Supplementary

Table S1 Comparison of the latest four versions of "Diagnosis and treatment protocol for Novel Coronavirus Pneumonia (trial version)"

Date issued	Subtype	Version 3rd	Version 4th	Version 5th	Version 6th	Version 7th
		Jan, 22	Jan, 27	Feb, 04	Feb, 18	Mar, 03
Severe group and critical severe group	Oxygen therapy	Not mentioned.	Not mentioned.	Nasal cannula, mask oxygen.	Same as the 5th version.	Same as the 5th version.
	Mechanical ventilation/ respiratory support	NIV; invasive mechanical ventilation (take lung protective ventilation strategies, if necessary, use supine ventilation or lung recruitment); ECMO therapy.		Add: HFNO therapy. Add: salvage therapy: lung recruitment or ECMO.	Same as the 5th version.	Add: closed sputum aspiration or bronchoscopy examination if conditions need
	Circulation support	On the basis of full fluid resuscitation, improve microcirculation, use vasoactive drugs; if necessary, use hemodynamic monitoring.				Add: closely monitor blood pressure, heart rate and urine. Add: pay attention to liquid balance strategy to avoid excessive and insufficient.
	Glucocorticoids therapy	Not mentioned.	(1) Systemic use of glucocorticoids needs to be cautious, according to the severity of the disease, methylprednisolone per day can be considered in a short time (3~5 days), the total daily dose should not exceed 1~2 mg/kg. (2) Xuebijing injection 50ml iv bid. (3) Use intestinal microecological regulators. (4) Convalescent plasma therapy may be considered if conditions permit.	Add: pay attention to the immunosuppressive effect, which can delay the recognition of coronavirus.	Add: glucocorticoids could be used as appropriate for patients with rapid imaging progress and overreacts with inflammation.	Same as the 6th version.
	Plasma therapy (convalescent patients Plasma)	Not mentioned.	It could be considered if conditions permit.	Add: extracorporeal blood purification techniques may be considered if high inflammatory response occurs.	Recommend.	Recommend.
	Renal failure and renal replacement therapy	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned.	Pay attention to liquid balance, acid base balance and electrolyte balance. In terms of nutritional support, pay attention to nitrogen balance, calories and trace element supplements. CRRT may be used in severe cases.
	Blood purification therapy	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned.	Plasma exchange, adsorption, perfusion, blood/plasma filtration, etc., used in the early and middle treatment of severe and critical patients with cytokine storm.
	Immunotherapy	Not mentioned.	Not mentioned.	Not mentioned.	Not mentioned.	In patients with extensive lung lesions and severe lung disease, laboratory detection of elevated il-6 levels: tocilizumab, initial dose 4-8mg/kg, the recommended dose is 400mg, diluted to 100ml with 0.9% normal saline, and infusion time is greater than 1 hour. For patients with poor efficacy of the first dose, 1 additional dose can be applied after 12 hours (the dose is the same as before), with the maximum of 2 cumulative doses and the maximum single dose not exceeding 800mg. Pay attention to the allergic reactions, patients with tuberculosis and other active infection is contraindicated.
	Others	Not mentioned.	Strengthen psychological counseling.	Same as the 4th version.	Same as the 4th version.	Add: children with severe or critical cases, Intravenous infusion of gamma globulin may be considered. Add: pregnant women with severe or critical cases should actively terminate their pregnancy, preferred Cesarean.
General treatment						
	Supportive treatment	(1) Sufficient energy and nutrients. (2) Bed rest. (3) Balance for water, electrolytes, acid base levels and other internal environment factors.				
	Close monitoring	Vital signs (blood routine, urine routine, CRP, organ function (liver enzyme, myocardial enzyme, creatinine, urea nitrogen, urine volume, etc), coagulation function, arterial blood gas analysis and chest imaging, etc).		Add: test cytokine if conditions permit.	Same as the 5th version.	Same as the 5th version.
	Oxygen therapy	(1) Nasal cannula, oxygen. (2) If necessary, use HFNO therapy, NIV or invasive mechanical ventilation.		No longer recommended NIV or invasive mechanical ventilation as general treatment, only for severe and critical severe group patients.	Same as the 5th version.	Same as the 5th version.
	Antiviral therapy	(1) The α-interferon atomization inhalation 5 million U per time in sterile injection water, bid (for adults). (2) Lopinavir/litonavir orally, 2 capsules each time, bid.	Add: Lopinavir/litonavir (200mg/50mg) orally, 2 capsules each time, bid.	Add: recommend Ribavirin 500mg iv bid/tid in combination (for adults)[a], Pay attention to the adverse reactions of Lopinavir/litonavir and drug interactions.	Add: recommend Ribavirin 500mg iv bid/tid in combination, with α-interferon or Lopinavir/litonavir (for adults); Pay attention to the adverse reactions of Lopinavir/ litonavir and drug interactions. Add: Chloroquine Phosphate 500mg bid (for adults); Arbidol 200mg tid (for adults, less than 10days); Not recommended using more than 3 kinds of antiviral drugs at the same time, when intolerable side effects occurs, stop using related drugs.	Add: Chloroquine Phosphate : 500mg bid 7days (for 18-65 years adult, weight > 50kg); 500mg bid for the first two days, 500mg qd for the third to seventh days (for for 18-65 years adult, weight <50kg). Add: pay attention to the drug contraindications, chloroquine is contraindicated in patients with cardiac adverse reactions. Add: for pregnant women, consider the number of weeks of gestation, choose drugs with less impact on the fetus as far as possible, and whether to terminate the pregnancy and other issues.
	Antibacterial therapy	Avoid blind or inappropriate use of antibacterials, especially the combination of broad-spectrum antibacterials, enhancement of bacteriological surveillance should be performed and promptly given appropriate drugs when it occurs secondary bacterial infection.				
	Glucocorticoids therapy	Systemic use of glucocorticoids needs to be cautious, according to the severity of the disease, methylprednisolone per day can be considered in a short time (3~5 days), the total daily dose should not exceed 1~2 mg/kg.	No longer recommended glucocorticoids as general treatment, but only limited as the choice for severe and critical severe group.			
	Traditional Chinese medicine	Treat the patient based on syndromes differentiation individually, different versions of the guidelines have been further refined the corresponding recommendations in detail.				

[a], February 04, 2020-February 08, 2020, ribavirin was recommended: ribavirin 1.2g iv q8h with the first dose was 4g or ribavirin 8mg/kg iv q8h (for adults). ECMO, extracorporeal membrane oxygenation; HFNO, high-flow nasal oxygen therapy; NIV, non-invasive ventilation; CRRT, continuous renal replacement therapy.

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Table S2 Clinical features of 165 patients with coronavirus disease 2019 (COVID-19)

Clinical features	All patients (n=165)	Baseline disease severity[a]		P value
		Non-severe group (n=139)	Severe group (n=26)	
Symptoms and signs				
Fever	125 (75.8)	102 (73.4)	23 (88.5)	0.100
Fatigue	20 (12.1)	18 (12.9)	2 (7.7)	0.743
Dry cough	4 (2.4)	4 (2.9)	0 (0.0)	1.000
Anorexia	3 (1.8)	2 (1.4)	1 (3.8)	0.404
Myalgia	7 (4.2)	7 (5.0)	0 (0.0)	0.598
Dyspnea or shortness of breath	12 (7.3)	6 (4.3)	6 (23.1)	0.004
Chill	2 (1.2)	2 (1.4)	0 (0.0)	1.000
Expectoration	13 (7.9)	11 (7.9)	2 (7.7)	1.000
Pharyngalgia	5 (3.0)	3 (2.2)	2 (7.7)	0.177
Diarrhea or abdominal pain	9 (5.5)	8 (5.8)	1 (3.8)	>0.9999
Nausea or vomiting	5 (3.0)	4 (2.9)	1 (3.8)	0.581
Dizziness or headache	4 (2.4)	4 (2.9)	0 (0.0)	>0.9999
Nasal congestion	2 (1.2)	1 (0.7)	1 (3.8)	0.291
Enlargement of lymph nodes	1 (0.6)	1 (0.7)	0 (0.0)	>0.9999
No. of Symptoms and signs	1 (1-2)	1 (1-2)	1 (1-2)	0.300
Days of fever	10 (5-14)	9 (5-13)	15 (10-24)	0.007
Abnormalities on chest CT				
Ground-glass opacity	4 (2.4)	4 (2.9)	0 (0.0)	>0.9999
Bilateral patchy shadowing	3 (1.8)	3 (2.2)	0 (0.0)	>0.9999

[a], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. Data are presented as No. (%) or median (IQR).

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Table S3 The combination and the number of the medications for 165 patients with coronavirus disease 2019 (COVID-19)

	Administering Medication			P value
	All patients (n=165)	Disease severity[a]		
		Non-Severe Group (n=139)	Severe group (n=26)	
Antivirals[b]	153 (92.7)	129 (92.8)	24 (92.3)	>0.9999
Medication combination[c]				0.209
Antivirals + glucocorticoids + TCM	81 (49.1)	66 (47.5)	15 (57.7)	
Antivirals + glucocorticoids	23 (13.9)	17 (12.2)	6 (23.1)	
Only antivirals	27 (16.4)	25 (18.0)	2 (7.7)	
Antivirals + TCM	22 (13.3)	21 (15.1)	1 (3.8)	
Others (all without antivirals)	12 (7.3)	10 (7.2)	2 (7.7)	
Total kinds of all medications (generic names)				
Overall	17 (10-29)	15 (10-27)	27 (18-41)	<0.0001
With comorbidities	21 (14.5-39.5)	20 (13-37)	28 (19-46)	0.103
Without comorbidities	12 (8-19)	11 (8-19)	22.5 (17.5-33)	0.034
Total kinds of all antiviral medications (generic names)	1 (1-2)	1 (1-2)	1 (1-2)	0.206

Data are presented as No. (%) or median (IQR). [a], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. [b], antivirals was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with J05, glucocorticoids (H02AB), traditional Chinese medicine (TCM, identified using drug name). [c], medication combination analysis were concentrated on antivirals, glucocorticoids and TCM (traditional Chinese medicine) without considering other coexisting medications. IQR, interquartile range.

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Table S4 Dose distribution of antivirals and glucocorticoids for patients with coronavirus disease 2019 (COVID-19)

	All patients (n=165)	Baseline disease severity[a]		P value
		Non-severe group (n=139)	Severe group (n=26)	
Antivirals[b]				
α-interferon				
No. of its prescription	107 (100.0)	92 (86.0)	15 (14.0)	0.002
3 million U	79 (73.8)	73 (79.3)	6 (40.0)	
5 million U	24 (22.4)	15 (16.3)	9 (60.0)	
Others (power, etc.)	4 (3.7)	4 (4.3)	0 (0.0)	
Lopinavir/litonavir				
No. of its prescription	35 (100.0)	27 (77.1)	8 (22.9)	0.237
2·00 co	27 (77.1)	20 (74.1)	7 (87.5)	
400·00 co	6 (17.1)	6 (22.2)	0 (0.0)	
Others (tablet, etc.)	2 (5.7)	1 (3.7)	1 (12.5)	
Arbidol				
No. of its prescription	20 (100.0)	20 (100.0)	0 (0.0)	-
200·00 mg	19 (95.0)	19 (95.0)	0 (0.0)	
Others (dispersible tablet, etc.)	1 (5.0)	1 (5.0)	0 (0.0)	
Oseltamivir				
No. of its prescription	419 (100.0)	361 (86.2)	58 (13.8)	0.835
150.00 mg	16 (3.8)	13 (3.6)	3 (5.2)	
75.00 mg	324 (77.3)	279 (77.3)	45 (77.6)	
Capsule	77 (18.4)	67 (18.6)	10 (17.2)	
Others (Granules)	2 (0.5)	2 (0.6)	0 (0.0)	
Glucocorticoids[c]				
Hexadecadrol				
No. of its prescription	75 (100.0)	72 (96.0)	3 (4.0)	>0.9999
3.00 mg	68 (90.7)	65 (90.3)	3 (100.0)	
5.00 mg	4 (5.3)	4 (5.6)	0 (0.0)	
Others (7.50 mg, 20.00 mg, or hydro-acupuncture)	3 (4.0)	3 (4.2)	0 (0.0)	
Methylprednisolon				
No. of its prescription	373 (100.0)	293 (78.6)	80 (21.4)	0.039
20.00 mg	198 (53.1)	158 (53.9)	40 (50.0)	
40.00 mg	83 (22.3)	67 (22.9)	16 (20.0)	
60.00 mg	33 (8.8)	23 (7.8)	10 (12.5)	
80.00 mg	30 (8.0)	18 (6.1)	12 (15.0)	
Others (power, etc.)	16 (4.3)	15 (5.1)	1 (1.3)	
Other dosage	13 (3.5)	12 (4.1)	1 (1.3)	

Data are presented as No. (%) or median (IQR). [a], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. [b], antivirals was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with J05. [c], glucocorticoids was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with H02AB. NA, not applicable; IQR, interquartile range.

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Table S5 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without antivirals

Features	Antivirals[a]		P value
	Without (n=12)	With (n=153)	
Age (y)			
Median (IQR)	53 (37-64)	56 (42-67)	0.565
Groups			
15-49	5 (41.7)	54 (35.3)	0.931
50-64	4 (33.3)	51 (33.3)	
≥65	3 (25.0)	48 (31.4)	
Sex female	7 (58.3)	74 (48.4)	0.506
Comorbidities			
Any	4 (33.3)	80 (52.3)	0.206
No. of comorbidities	0 (0-2)	1 (0-2)	0.230
Disease severity[b]			>0.9999
Non-severe group	10 (83.3)	129 (84.3)	
Severe group	2 (16.7)	24 (15.7)	
Outcomes			
Days of imaging tests changing to negative (-)	9 (9-9)	9 (6-13)	0.608
Days of nucleic acid tests changing to negative (-)	9 (9-9)	6 (4-8)	0.256
Death	1 (8.3)	23 (15.0)	0.870
Recovered	10 (83.3)	120 (78.4)	
Staying in hospital/transferred to another hospital	1 (8.3)	10 (6.5)	

Data are presented as No. (%) or median (IQR). [a], antivirals was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with J05. [b], The patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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Table S6 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without glucocorticoids

Features	Glucocorticoids[a]		P value
	Without (n=52)	With (n=113)	
Age (y)			
Median (IQR)	54 (37-61)	58 (42-70)	0.194
Groups			
15-49	19 (38.0)	40 (34.8)	0.107
50-64	21 (42.0)	34 (29.6)	
≥65	10 (20.0)	41 (35.7)	
Sex female	31 (62.0)	50 (43.5)	0.029
Comorbidities			
Any	25 (50.0)	59 (51.3)	0.878
No. of comorbidities	1 (0-2)	1 (0-2)	0.896
Disease severity[b]			
Non-Severe group	47 (94.0)	92 (80.0)	0.023
Severe group	3 (6.0)	23 (20.0)	
Outcomes			
Days of imaging tests changing to negative (-)	8 (4-11)	10 (8-14)	0.058
Days of nucleic acid tests changing to negative (-)	5 (2-5)	7 (5-9)	0.042
Death	2 (4.0)	22 (19.1)	0.020
Recovered	46 (92.0)	84 (73.0)	
Staying in hospital/ transferred to another hospital	2 (4.0)	9 (7.8)	

Data are presented as No. (%) or median (IQR). [a], glucocorticoids was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with H02AB. [b], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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Table S7 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without antimycotics

Features	Antimycotics[a]		P value
	Without (n=141)	With (n=24)	
Age (y)			
Median (IQR)	54 (39-65)	67 (50-80)	0.004
Groups			
15-49	52 (38.5)	7 (23.3)	0.003
50-64	49 (36.3)	6 (20.0)	
≥65	34 (25.2)	17 (56.7)	
Sex female	66 (48.9)	15 (50.0)	0.912
Comorbidities			
Any	65 (48.1)	19 (63.3)	0.132
No. of comorbidities	0 (0-2)	2 (0-3)	0.107
Disease severity[b]			
Non-severe group	113 (83.7)	26 (86.7)	0.789
Severe group	22 (16.3)	4 (13.3)	
Outcomes			
Days of imaging tests changing to negative (-)	9 (6-12)	14 (7-20)	0.974
Days of nucleic acid tests changing to negative (-)	6 (4-8)	5 (2-11)	0.562
Death	15 (11.1)	9 (30.0)	<0.0001
Recovered	116 (85.9)	14 (46.7)	
Staying in hospital/transferred to another hospital	4 (3.0)	7 (23.3)	

Data are presented as No. (%) or median (IQR). [a], antimycotics was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with J02. [b], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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Table S8 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without general nutrients

Features	General nutrients[a]		P value
	Without (n=39)	With (n=126)	
Age (y)			
Median (IQR)	51 (34-65)	57 (43-67)	0.487
Groups			
15-49	18 (47.4)	41 (32.3)	0.231
50-64	10 (26.3)	45 (35.4)	
≥65	10 (26.3)	41 (32.3)	
Sex female	24 (63.2)	57 (44.9)	0.048
Comorbidities			
Any	12 (31.6)	72 (56.7)	0.007
No. of comorbidities	0 (0-1)	1 (0-2)	0.007
Disease severity[b]			
Non-severe group	35 (92.1)	104 (81.9)	0.129
Severe group	3 (7.9)	23 (18.1)	
Outcomes			
Days of imaging tests changing to negative (-)	9 (8-12)	9 (6-13)	0.914
Days of nucleic acid tests changing to negative (-)	6 (4-7)	6 (4-9)	0.894
Death	2 (5.3)	22 (17.3)	0.073
Recovered	35 (92.1)	95 (74.8)	
Staying in hospital/transferred to another hospital	1 (2.6)	10 (7.9)	

Data are presented as No. (%) or median (IQR). [a], general nutrients was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with V06. [b], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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Table S9 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without traditional Chinese medicine

Features	Traditional Chinese medicine[a]		P value
	Without (n=74)	With (n=91)	
Age (y)			
Median (IQR)	57 (44-67)	55 (37-66)	0.485
Groups			
15-49	25 (39.1)	34 (33.7)	0.524
50-64	18 (28.1)	37 (36.6)	
≥65	21 (32.8)	30 (29.7)	
Sex Female	30 (46.9)	51 (50.5)	0.650
Comorbidities			
Any	37 (57.8)	47 (46.5)	0.158
No. of comorbidities	1 (0-2)	0 (0-2)	0.149
Disease severity[b]			
Non-severe group	51 (79.7)	88 (87.1)	0.201
Severe group	13 (20.3)	13 (12.9)	
Outcomes			
Days of imaging tests changing to negative (-)	9 (6-12)	10 (6-14)	0.163
Days of nucleic acid tests changing to negative (-)	5 (3-7)	7 (4-10)	0.270
Death	10 (15.6)	14 (13.9)	0.702
Recovered	51 (79.7)	79 (78.2)	
Staying in hospital/transferred to another hospital	3 (4.7)	8 (7.9)	

Data are presented as No. (%) or median (IQR). [a], traditional Chinese medicine was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with TCM, identified using drug name. [b], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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Table S10 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without vasoactive drugs

Features	Vasoactive drugs[a]		P value
	Without (n=128)	With (n=37)	
Age (y)			
Median (IQR)	52 (37-64)	66 (54-78)	0.003
Groups			
15-49	53 (42.4)	6 (15.0)	0.001
50-64	42 (33.6)	13 (32.5)	
≥65	30 (24.0)	21 (52.5)	
Sex female	66 (52.8)	15 (37.5)	0.092
Comorbidities			
Any	55 (44.0)	29 (72.5)	0.002
No. of comorbidities	0 (0-1)	2 (0-3)	0.001
Disease severity[b]			
Non-severe group	112 (89.6)	27 (67.5)	0.001
Severe group	13 (10.4)	13 (32.5)	
Outcomes			
Days of imaging tests changing to negative (-)	9 (6-12)	13 (9-16)	0.451
Days of nucleic acid tests changing to negative (-)	6 (5-9)	5 (3-6)	0.283
Death	4 (3.2)	20 (50.0)	0.000
Recovered	116 (92.8)	14 (35.0)	
Staying in hospital/transferred to another hospital	5 (4.0)	6 (15.0)	

Data are presented as No. (%) or median (IQR). [a], vasoactive drugs was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with C01DA, C01CA, C04AB01. [b], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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Table S11 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without intestinal microecological regulators

Features	Intestinal microecological regulators[a]		P value
	Without (n=138)	With (n=27)	
Age (y)			
Median (IQR)	54 (39-65)	65 (48-77)	0.045
Groups			
15-49	51 (38.3)	8 (25.0)	0.034
50-64	47 (35.3)	8 (25.0)	
≥65	35 (26.3)	16 (50.0)	
Sex female	62 (46.6)	19 (59.4)	0.195
Comorbidities			
Any	60 (45.1)	24 (75.0)	0.002
No. of comorbidities	0 (0-1)	2 (1-3)	0.002
Disease severity[b]			
Non-severe group	112 (84.2)	27 (84.4)	0.982
Severe group	21 (15.8)	5 (15.6)	
Outcomes			
Days of imaging tests changing to negative (-)	9 (7-13)	12 (4-20)	0.501
Days of nucleic acid tests changing to negative (-)	6 (4-7)	8 (4-12)	0.926
Death	17 (12.8)	7 (21.9)	0.004
Recovered	111 (83.5)	19 (59.4)	
Staying in hospital/transferred to another hospital	5 (3.8)	6 (18.8)	

Data are presented as No. (%) or median (IQR). [a], intestinal microecological regulators was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with A07F. [b], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe, respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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Table S12 Baseline features of all patients with coronavirus disease 2019 (COVID-19) who started treatment with or without immunoglobin

Features	Immunoglobin[a]		P value
	Without (n=140)	With (n=25)	
Age (y)			
Median (IQR)	55 (42-67)	59 (43-66)	0.389
Groups			
15-49	50 (36.5)	9 (32.1)	0.906
50-64	45 (32.8)	10 (35.7)	
≥65	42 (30.7)	9 (32.1)	
Sex female	72 (52.6)	9 (32.1)	0.049
Comorbidities			
Any	69 (50.4)	15 (53.6)	0.757
No. of comorbidities	1 (0-2)	1 (0-2)	0.738
Disease severity[b]			
Non-severe group	117 (85.4)	22 (78.6)	0.395
Severe group	20 (14.6)	6 (21.4)	
Outcomes			
Days of imaging tests changing to negative (-)	9 (6-13)	11 (7-14)	0.501
Days of nucleic acid tests changing to negative (-)	6 (5-8)	5 (3-10)	0.624
Death	23 (16.8)	1 (3.6)	0.012
Recovered	108 (78.8)	22 (78.6)	
Staying in hospital/ transferred to another hospital	6 (4.4)	5 (17.9)	

Data are n (%) or median (IQR). [a], immunoglobin was defined as Anatomical Therapeutic Chemical (ATC) classification codes started with J06BA. [b], the patient's baseline condition was classified into four levels according to the guidelines: mild, general, severe, critical severe respectively, the first two levels were further classified as a non-severe subgroup and the latter two as a severe subgroup. IQR, interquartile range.

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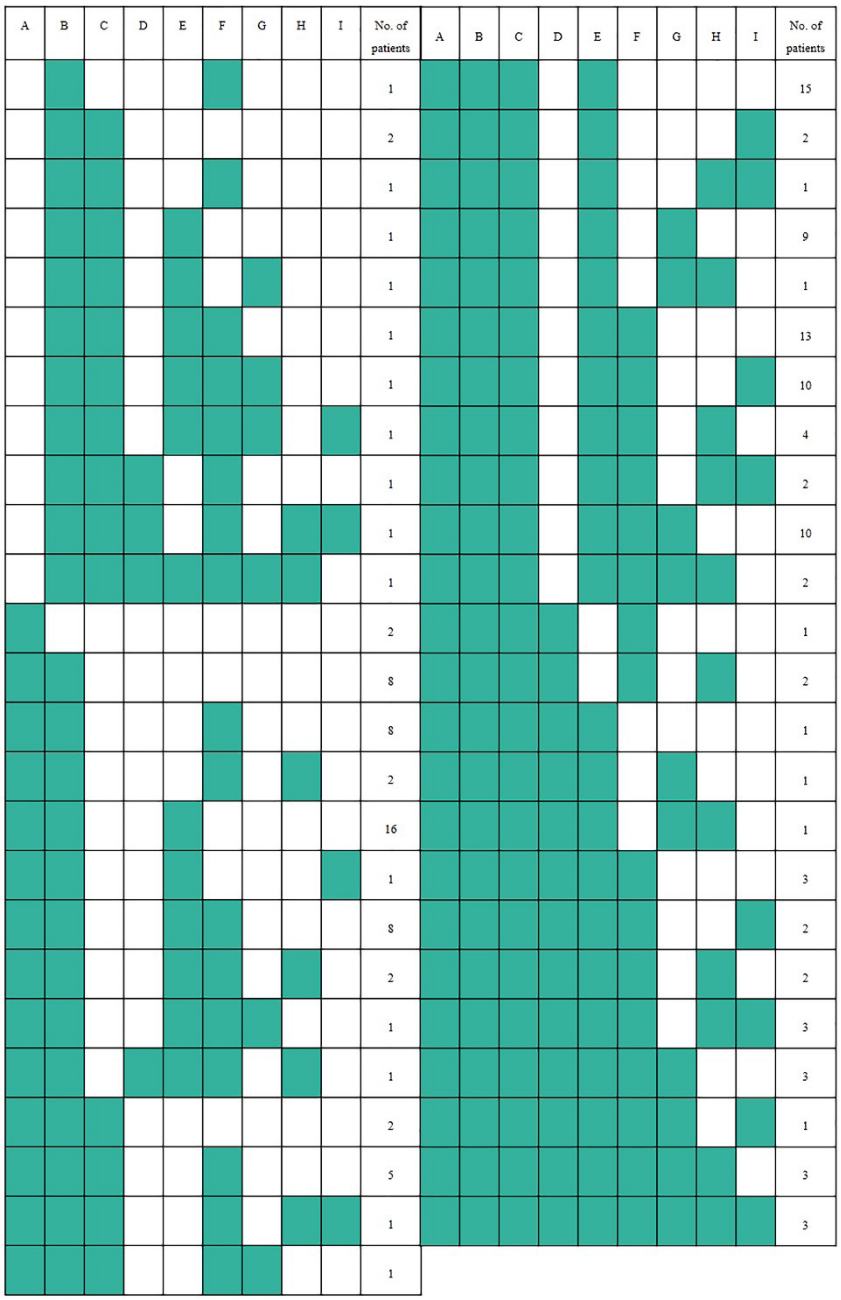

Figure S1 Medication combinations of 165 patients with coronavirus disease 2019 (COVID-19). The column with green color means with that specific medication. A. antivirals [Anatomical Therapeutic Chemical (ATC) classification codes started with J05]. B. antibacterials (J01). C. glucocorticoids (H02AB). D. antimycotics (J02). E. general nutrients (V06). F. traditional Chinese medicine (TCM, identified using drug name). G. vasoactive drugs (C01DA, C01CA, C04AB01). H. intestinal microecological regulators (A07F). I. immunoglobin (J06BA).

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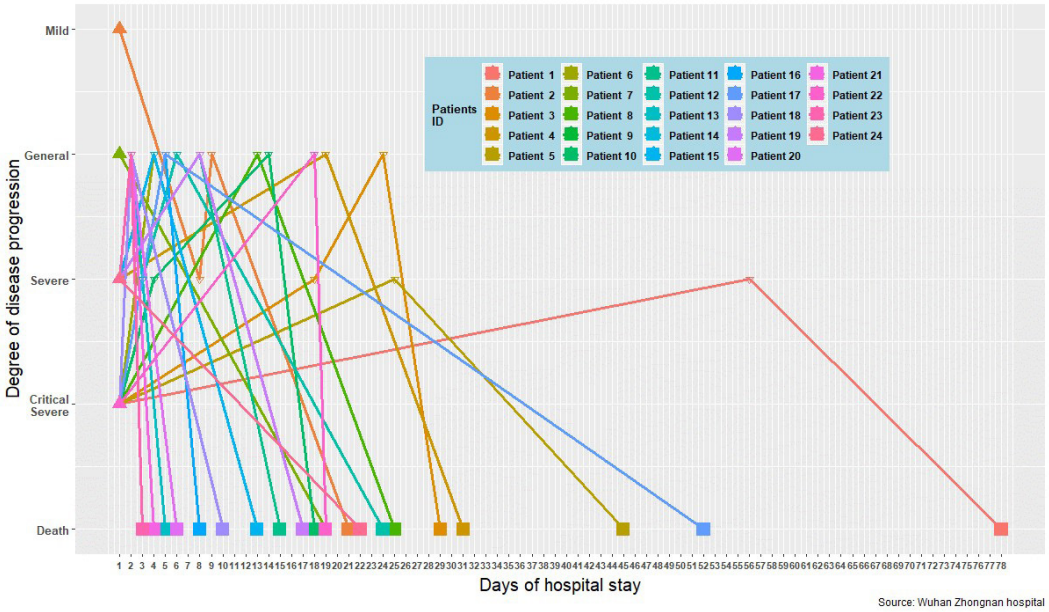

Figure S2 Disease progression of 24 death patients with coronavirus disease 2019 (COVID-19) by days of hospital stay. This figure presented the disease progression of 24 death patients since baseline. The patient's baseline condition was classified into four levels according to the guidelines "Diagnostic and treatment protocol for Novel Coronavirus Pneumonia (trial fifth version)": mild, general, severe, critical severe, respectively.

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