



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

GUIDELINE

Editor's Note: *Guidance for Corona Virus Disease 2019: prevention, control, diagnosis and management*, which was published by People's Medical Publishing House Co., Ltd., included the following documents issued by National Health Commission of the People's Republic of China and National Administration of Traditional Chinese Medicine of the People's Republic of China: *Diagnosis and treatment plan of Corona Virus Disease 2019 (tentative sixth edition)*, *Prevention and control plan of Corona Virus Disease 2019 (fourth edition)*, *Guidelines for prevention and control of 2019-nCoV* and their official interpretations. All contents were translated into English, as well as the experts' introductions of the changes from version to version.

Global Health Journal excerpted chapter 1 "Diagnosis and treatment plan of Corona Virus Disease 2019 (tentative sixth edition)", chapter 2 "Interpretation of the diagnosis and treatment plan of Corona Virus Disease 2019 (tentative fifth revised edition)", and chapter 3 "Interpretation of the diagnosis and treatment plan of Corona Virus Disease 2019 (tentative sixth edition)" from this book, to introduce China's experiences on the prevention and treatment of Corona Virus Disease 2019 (COVID-19) to the world actually and objectively, and provide guidance to countries and regions affected by the epidemic. Hope all countries around the world could share information and cooperate together on fighting the epidemics of COVID-19 possibly soon, and to safeguard global public health security.

Diagnosis and treatment plan of Corona Virus Disease 2019 (tentative sixth edition)

ARTICLE INFO

Article history:

Received 27 February 2020

Accepted 28 March 2020

Available online 17 March 2020

Since December 2019, an increasing number of cases of Corona Virus Disease 2019 (officially named by WHO, COVID-19) have been diagnosed in Wuhan, Hubei Province. With the spreading of the epidemic, COVID-19 cases have also been reported in other regions of China and abroad. COVID-19 was urgently classified, by the *Law on the Prevention and Treatment of Infectious Diseases of the People's Republic of China* as Class B communicable diseases, and is managed as Class A communicable diseases. With the in-depth understanding and accumulation of diagnosis and treatment experience of COVID-19, the *Diagnosis and Treatment Plan of Corona Virus Disease 2019* (Tentative Fifth Revised Edition) was revised and formed the current tentative sixth edition.

1. Pathogenic characteristics

The novel coronavirus 2019 (2019-nCoV, officially named as severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2] by International Committee on Taxonomy of Viruses) belongs to the genus β , with envelope, round or elliptic and often pleomorphic form, and 60–140 nm in diameter. The virus genetically differs considerably from those of SARSr-CoV and MERSr-CoV. Current

studies show that the homology between 2019-nCoV and bat-SARS-like coronavirus (bat-SL-CoVZC45) is over 85%. When cultured in vitro, 2019-nCoV can be found in human respiratory epithelial cells after about 96 hours, while it takes about 6 days to isolate and culture Vero E6 and Huh-7 cell lines.

Knowledge on the physical and chemical characteristics of coronaviruses is mainly derived from the study of SARSr-CoV and MERSr-CoV. Coronaviruses are sensitive to ultraviolet rays and heat, and can be effectively inactivated by heating at 56°C for 30 minutes and lipid solvents such as ether, 75% ethanol, chlorine-containing disinfectant, peroxyacetic acid and chloroform except chlorhexidine.

2. Epidemiological characteristics

2.1. Source of infection

At present, the major source of infection is the patients with COVID-19, and asymptomatic 2019-nCoV carriers seem also a potential source of infection.

2.2. Route of transmission

COVID-19 is mainly transmitted by droplets and contact. Aerosol transmission is possible when people have prolonged exposure to high concentrations of aerosols in relatively closed spaces.

2.3. Susceptible individuals

Humans of all ages are generally susceptible.

3. Clinical characteristics

3.1. Clinical manifestations

Based on current epidemiological investigations, the incubation period of COVID-19 is ranged between 1 and 14 days, and generally within 3 to 7 days.

Fever, fatigue and dry coughing are considered the main clinical manifestations, but symptoms such as stuffy nose, runny nose, pharyngalgia, myalgia and diarrhea are relatively less common. In severe cases, dyspnea and/or hypoxemia usually occurs after one week of disease onset, and the worse can rapidly progress to acute respiratory distress syndrome, septic shock, metabolic acidosis hard to correct, and hemorrhage and coagulation dysfunction, multiple organ failure, etc. It's worth noting that patients with severe or critical illness may have a moderate to low fever, or no fever at all.

Mild cases only present with light fever, mild fatigue and so on without manifestation of pneumonia.

From the cases treated currently, most of the patients have a favorable prognosis. The elderly and people with chronic underlying diseases usually have poor prognosis while cases with relatively mild symptoms are common in children.

3.2. Laboratory examination

In the early stage of COVID-19, a normal or decreased total white blood cell count and a decreased lymphocyte count can be found in patients. In addition, increased value of liver enzymes, lactate dehydrogenase (LDH), muscle enzymes and myoglobin can occur in some patients; and raised level of troponin can be seen in some critically ill patients. In most cases, the laboratory tests show a raised C-reactive protein value and erythrocyte sedimentation rate but a normal procalcitonin value. Among severe patients, D-dimer value is increased and peripheral blood lymphocytes decreased persistently. In addition, elevated values of inflammatory factors are accompanied with in severe and critical patients.

The nucleic acid of 2019-nCoV can be detected in biological specimens such as nasopharyngeal swabs, sputum, other lower respiratory tract secretions, blood and feces.

To improve the positive rate of nucleic acid detection, it is recommended to collect and retain sputum in general patients besides those performed with tracheal intubation (lower respiratory tract secretions should be collected); and all the specimens should be sent and tested as fast as possible.

3.3. Chest imaging

In the early stage of COVID-19, the images show that there are multiple small patched shadows and interstitial changes, especially in the lung periphery. As the disease progresses, the images of these patients further develop into multiple ground glass shadows and infiltration shadows in both lungs. In severe cases, lung consolidation may occur. It is seldom to find pleural effusion in patients with COVID-19.

4. Diagnostic criteria

4.1. Suspected cases

The suspected cases should be diagnosed through considering both the epidemiological histories and clinical manifestations:

4.1.1. Epidemiology

a. Having a history of travel or residence in Wuhan and its surrounding areas or other communities with cases reported within 14 days before the patient's onset; or

b. Having a contact history with patients (a positive results of nucleic acid test of 2019-nCoV) within 14 days before the patient's onset; or

c. Having a contact history with patients with fever or respiratory symptoms from Wuhan and its surrounding areas, or the communities with cases reported within 14 days before the patient's onset; or

d. Clustering occurrence of cases.

4.1.2. Clinical manifestations

a. Fever and/or respiratory symptoms;

b. Having the imaging features of pneumonia described above;

c. In the early stage, a normal or decreased total white blood cell count and a decreased lymphocyte count can be found.

Patients who meet any one of the epidemiological exposure histories as well as any two of the clinical manifestations can be diagnosed as suspected cases. Patients with no definite epidemiological history can be diagnosed only if all the three clinical manifestations are met.

4.2. Confirmed cases

The suspected cases with one of the following etiological evidences can be diagnosed as confirmed cases:

4.2.1. A positive result of the nucleic acid of 2019-nCoV by real-time fluorescence Reverse Transcription PCR (RT-PCR).

4.2.2. The virus gene sequence is highly homologous to the known 2019-nCoV.

5. Clinical classifications

5.1. Mild cases

The clinical symptoms are mild and no pneumonia manifestation can be found in imaging.

5.2. Ordinary cases

Patients have symptoms like fever and respiratory tract symptoms, etc. and pneumonia manifestation can be seen in imaging.

5.3. Severe cases

Meeting any of the following:

a. Respiratory distress, respiratory rate ≥ 30 breaths/min;

b. Pulse oxygen saturation (SpO₂) $\leq 93\%$ on room air at rest state;

c. Arterial partial pressure of oxygen (PaO₂)/fraction of inspired oxygen (FiO₂) ≤ 300 mmHg.

At higher altitudes (above 1 km), PaO₂/FiO₂ values should be adjusted based on equation of PaO₂/FiO₂ \times [Atmospheric Pressure (mmHg)/760].

Patients with >50% lesions progression within 24 to 48 h in pulmonary imaging should be treated as severe cases.

5.4. Critical cases

Meeting any of the following:

a. Respiratory failure occurs and mechanical ventilation is required;

b. Shock occurs;

c. Complicated with other organ failure that requires monitoring and treatment in ICU.

6. Differential diagnosis

6.1. The mild manifestations caused by COVID-19 should be distinguished from respiratory infections caused by other viruses.

6.2. COVID-19 should be distinguished from viral pneumonia caused by influenza virus, adenovirus or respiratory syncytial virus, and mycoplasma pneumonia. Especially for suspected cases, rapid antigen detection, multiple PCR nucleic acid test and other methods should be adopted to examine common respiratory pathogens.

6.3. In addition, differentiation from non-infectious diseases such as vasculitis, dermatomyositis, and organizing pneumonia should also be performed.

7. Case identification and report

Medical staff at all levels and types of medical institutions should immediately isolate and treat every suspected case that meet the definition of the disease in a single room. After in-hospital experts' consultation or attending physicians' consultation, people still be considered as suspected cases need to be reported online within 2 hours. Specimens should be collected and tested for the nucleic acid of 2019-nCoV. Suspected patients should be transferred to the designated hospitals as soon as possible. People intimately contacted with COVID-19 patients or those even with positive results in common respiratory pathogens test, are also recommended to conduct the pathogenic detection 2019-nCoV in time.

8. Treatment

8.1. Determine the treatment place according to the severity of the disease

8.1.1. Suspected and confirmed cases should be isolated and treated in designated hospitals with effective isolation and protective conditions. Suspected cases should be treated in single rooms, while confirmed cases can be admitted to the same ward.

8.1.2. Critical cases should be admitted to ICU as soon as possible.

8.2. General treatment

8.2.1. Rest patients in bed, strengthen supportive treatment, and ensure adequate nutrition. Keep the balance of water and electrolyte to maintain the stability of the internal environment. Closely monitor vital signs, oxygen saturation, etc.

8.2.2. Monitor blood routine, urine routine, C-reactive protein, biochemical indicators (liver enzyme, myocardial enzyme, renal function, etc.), coagulation function, arterial blood gas analysis, chest imaging, etc. according to the patient's condition. If possible, cytokine testing should be conducted.

8.2.3. Give effective oxygen therapy measures in time, including nasal cannula, mask oxygen, high-flow nasal oxygen therapy.

8.2.4. Antiviral treatment: Alpha-interferon nebulization (5 million units or equivalent with 2 ml of sterile water for injection per time for adult, twice per day); lopinavir/ritonavir (200 mg/100 mg/capsule, two capsules each time, twice per day for adults, the course of treatment should be < 10 days); ribavirin (for adults, 500 mg ribavirin injection combined with interferon or lopinavir/ritonavir per time is recommended, two or three times per day, the course of treatment should be < 10 days); chloroquine phosphate (for adult, 500 mg each time, twice per day, the course of treatment should be < 10 days); arbidol (for adults, 200 mg each time, three times per day, the course of treatment should be < 10 days). Keep alert on side effects related to lopinavir/ritonavir, such as diarrhea, nausea, vomiting, and liver damage, as well as harmful interaction with other drugs. Effects of current trial drugs should be further evaluated during clinical usage. Simultaneously use of three or more types of antiviral drugs is not recommended and relevant drug treatment should stop if unacceptable side effects or toxicity occur.

8.2.5. Antibacterial drug treatment: unselective or inappropriate use of antibiotics should be avoided, especially in combination with broad-spectrum antibiotics.

8.3. Treatment of severe and critical cases

8.3.1. Treatment principles: On the basis of symptomatic treatment, actively prevent complications, treat accompanying diseases, prevent secondary infections, and provide organ function support in time.

8.3.2. Respiratory support

8.3.2.1. Oxygen therapy

Severe patients should be provided inhalation oxygen with facemask or nasal catheter. Timely assess whether respiratory distress and/or hypoxemia are relieved.

8.3.2.2. High-flow nasal cannula oxygen therapy (HFNC) or non-invasive mechanical ventilation (NIV)

When respiratory distress and/or hypoxemia cannot be relieved after standard oxygen therapy, HFNC or NIV should be considered. If the condition does not improve or even worsen within a short period of time (1 – 2 hours), endotracheal intubation and invasive mechanical ventilation should be performed promptly.

8.3.2.3. Invasive mechanical ventilation

Use lung protective ventilation strategies, which means small tidal volume (4–8 ml/kg ideal weight) and low inspiratory pressure (platform pressure < 30 cmH₂O) for mechanical ventilation to reduce ventilator-related lung injuries. For several patients, human-machine synchronization is not available, and sedative and muscle relaxants should be used in time.

8.3.2.4. Salvage treatment

For patients with severe ARDS, it is recommended to perform lung expansion. If possible, prone position ventilation should be performed for more than 12 hours per day. For those with poor prone position ventilation, extracorporeal membrane oxygenation (ECMO) should be considered as soon as possible if conditions permit.

8.3.3. Circulation support: On the basis of adequate fluid resuscitation, improve microcirculation, use vasoactive drugs, and perform hemodynamic monitoring when necessary.

8.3.4. Convalescent plasma therapy: suitable for treating rapidly developed cases, severe cases and critical cases. Administrations and dosage refer to *Clinical Plasma Therapy Plan for Corona Virus Disease 2019 Convalescents during Recovery (Tentative First Edition)*.

8.3.5. Other treatments

According to the severity of respiratory distress and the progress of chest imaging, glucocorticoids can be used within a short period of time (3–5 days) as appropriate. Dose does not exceed the equivalent of 1–2mg/(kg·day) of methylprednisolone is recommended. It should be noted that higher doses of glucocorticoids would delay coronavirus clearance due to immunosuppressive effects; Xuebijing injection (a traditional Chinese medicine) can be given intravenously 100 ml/day, twice a day for treatment; microecological preparation can be used to keep the equilibrium for intestinal microecology and prevent secondary bacterial infection; plasma exchange, adsorption, perfusion, hemofiltration/plasma filtration and other extracorporeal blood purification technologies should be considered if possible for critical cases with severe inflammatory reactions.

Anxiety and fear usually occur in many patients, therefore psychological counseling should be strengthened.

8.4. Traditional Chinese medicine treatment

COVID-19 can also be treated with traditional Chinese medicine, which considers it caused by epidemic pathogenic factors located in the lungs. Different regions can refer to the following schemes for dialectical treatment according to the disease condition, local climate characteristics, and different physical conditions. Use drugs under the guidance of doctors if the dose of drug exceeds the pharmacopoeia.

8.4.1. Medical observation period

8.4.1.1. Clinical Manifestation 1: fatigue with gastrointestinal upset

Recommended Chinese Medicine: Huoxiangzhengqi Capsule (pill, oral liquid).

8.4.1.2. Clinical Manifestation 2: fatigue with fever

Recommended Chinese medicines: Jinhua Qinggan Granules, Lianhua Qingwen Capsules (granules), Shufeng Jiedu Capsules (granules).

8.4.2. Clinical treatment period (for confirmed cases)

8.4.2.1. Lung-clearing and detoxification soup

Application Scope: Suitable for mild, general and severe cases; reasonable for treating critical cases according to clinical symptoms.

Basic Prescription: *Herba Ephedrae* 9 g, roasted *Radix Glycyrrhizae* 6 g, *Semen Armeniacae Amarum* 9 g, raw *Gypsum Fibrosum* 15–30 g (decocted first), *Ramulus Cinnamomi* 9 g, *Rhizoma Alismatis* 9 g, *Polyporus Umbellatus* 9 g, *Rhizoma Atractylodis Macrocephalae* 9 g, *Poria* 15 g, *Radix Bupleuri* 16 g, *Radix Scutellariae* 6 g, *Rhizoma Pinelliae Preparata* 9 g, *Rhizoma Zingiberis Recens* 9 g, *Radix Asteris* 9 g, *Flos Farfarae* 9 g, *Rhizoma Belamcandae* 9 g, *Herba Asari* 6 g, *Rhizoma Dioscoreae* 12 g, *Fructus Aurantii Immaturus* 6 g, *Pericarpium Citri Reticulatae* 6 g, *Herba Pogostemonis* 9 g.

Administrations and dosage: The basic prescription is a traditional Chinese medicine, which should be decocted by water for drink. Decoct same drugs twice per day, in the morning and in the evening (40 minutes after meals), three pieces are regarded as a course of treatment.

Take half bowl of rice soup if possible after taking the medicine, or a bowl of rice soup for people with dry tongue and deficient body fluid. (Notes: the dosage of raw gypsum should be decreased for people without fever, and be increased for people with mild or severe fever.) Take the second course of treatment if the symptoms are improve but not disappeared, and it can be modified according to the actual situation for people with special requirements or other basic diseases. The medicine should be discontinued if the symptoms disappear.

Sources of prescription: Recommendation of Lung-Clearing and Detoxification Soup in the Treatment of Corona Virus Disease 2019 by Integrated Traditional Chinese and Western Medicine (Official Letter of the Office of National Administration of Traditional Chinese Medicine, No. [2020]22) issued by the General Office of National Health Commission and the Office of National Administration of Traditional Chinese Medicine of the People's Republic of China.

8.4.2.2. Mild type

a. Cold dampness stagnating lungs

Clinical manifestations: Fever, fatigue, soreness, coughing, expectoration, chest tightness, suffocation, nausea, vomiting and sticky stools. Pale or red tongue with fat tooth marks, moss white thick rotten or greasy fur, and soft and floating or slippery pulse.

Recommended prescription: Raw *Herba Ephedrae* 6 g, raw *Gypsum Fibrosum* 15 g, *Semen Armeniacae Amarum* 9 g, *Rhizoma et Radix Notopterygii* 15 g, *Semen Lepidii* 15 g, *Rhizoma Cyrtomii* 9 g, *Lumbricus* 15 g, *Radix Cynanchi Paniculati* 15 g, *Herba Pogostemonis* 15 g, *Herba Eupatorii* 9 g, *Rhizoma Atractylodis* 15 g, *Poria* 45 g, raw *Rhizoma Atractylodis Macrocephalae* 30 g, charred *Fructus Hordei Germinatus*, charred *Fructus Crataegi* and charred *Massa Medicata Fermentata* 9 g each, *Cortex Magnoliae Officinalis* 15 g, charred *Semen Arecae* 9 g, *Fructus Tsaoko* 9 g, *Rhizoma Zingiberis Recens* 15 g.

Administrations and dosage: One dose per day, decocted with 600 ml water, taken in the morning, noon and evening respectively before meals.

b. Damp-heat accumulated lung

Clinical manifestations: Low fever or normal body temperature, slight chills alternate, head and body heaviness, muscle soreness, dry cough and less sputum, sore throat, dry mouth and no desire to drink, or chest tightness, epigastric fullness, no sweat or unsmooth sweating, or vomiting, nausea, loose stool or constipation. Pale or red tongue with white, thick, greasy or thin yellow fur, and smooth or moist pulse.

Recommended prescription: *Semen Arecae* 10 g, *Fructus Tsaoko* 10 g, *Cortex Magnoliae Officinalis* 10 g, *Rhizoma Anemarrhenae* 10 g, *Radix Scutellariae* 10 g, *Radix Bupleuri* 10 g, *Radix Paeoniae Rubra* 10 g, *Fructus Forsythiae* 15 g, *Herba Artemisiae Annuae* 10 g (decocted later), *Rhizoma Atractylodis* 10 g, *Folium Isatidis* 10 g, raw *Radix Glycyrrhizae* 5 g.

Administrations and dosage: One dose per day, decocted with 400 ml water, taken once in the morning and once in the evening.

8.4.2.3. General type

a. Damp-poison stagnating lung

Clinical manifestations: Fever, cough with less sputum or yellow sputum, chest tightness, shortness of breath, abdominal distension. Dark red and fat tongue with yellow greasy or dry fur, rapid and/or slippery pulses.

Recommended prescription: Raw *Herba Ephedrae* 6 g, *Semen Armeniacae Amarum* 15 g, raw *Gypsum Fibrosum* 30 g, raw *Semen Coicis* 30 g, *Rhizoma Atractylodis* 10 g, *Herba Pogostemonis* 15 g, *Herba Artemisiae Annuae* 12 g, *Rhizoma Polygoni Cuspidati* 20 g, *Herba Verbenae* 30 g, Dry *Rhizoma Phragmitis* 30 g, *Semen Lepidii* 15 g, *Exocarpium Citri Grandis* 15 g, *Radix Glycyrrhizae* 10 g.

Administrations and dosage: One dose per day, decocted with 400 ml water, taken once in the morning and once in the evening.

b. Cold dampness obstructing lung

Clinical manifestations: Low fever, hiding fever, or no fever, dry cough, little sputum, fatigue, chest tightness, nausea, or vomiting, loose stools. Pale or red tongue, white greasy fur, soft and floating pulse.

Recommended prescription: *Rhizoma Atractylodis* 15 g, *Pericarpium Citri Reticulatae* 10 g, *Cortex Magnoliae Officinalis* 10 g, *Herba Pogostemonis* 10 g, *Fructus Tsaoko* 6 g, raw *Herba Ephedrae* 6 g, *Rhizoma et Radix Notopterygii* 10 g, *Rhizoma Zingiberis Recens* 10 g, *Semen Arecae* 10 g.

Administrations and dosage: One dose per day, decocted with 400 ml water, taken once in the morning and once in the evening.

8.4.2.4. Severe type

a. Lung blocked by epidemic toxin

Clinical manifestations: Fever, flushing, cough, less yellow sticky sputum with or without blood, wheezing and shortness of breath, fatigue, bitter and sticky dry mouth, nausea with anorexia, poor stool movements, less brown urine. Red tongue with yellow greasy, slippery pulse.

Recommended prescription: Raw *Herba Ephedrae* 6 g, *Semen Armeniacae Amarum* 9 g, *Gypsum Fibrosum* 15 g, *Radix Glycyrrhizae* 3 g, *Herba Pogostemonis* 10 g (decocted later), *Cortex Magnoliae Officinalis* 10 g, *Rhizoma Atractylodis* 15 g, *Fructus Tsaoko* 10 g, *Rhizoma Pinelliae Preparatum* 9 g, *Poria* 15 g, raw *Radix et Rhizoma Rhei* 5 g (decocted later), raw *Radix Astragali seu Hedysari* 10 g, *Semen Lepidii* 10 g, *Radix Paeoniae Rubra* 10 g.

Administrations and dosage: One or two doses per day, decocted with 100–200 ml water, taken 2–4 times a day, oral or nasal feeding.

b. Flaring heat in qi and ying

Clinical manifestations: Severe fever and polydipsia, dyspnea and anhelation, delirium, blurred vision, rash, or hematemesis and epistaxis, or convulsion of the limbs. Tongue with little or no fur, deep and count pulse, or large and rapid pulse.

Recommended prescription: Raw *Gypsum Fibrosum* 30–60 g (decocted first), *Rhizoma Anemarrhenae* 30 g, *Radix Rehmanniae* 30–60 g, *Cornu Bubali* 30 g (decocted first), *Radix Paeoniae Rubra* 30 g, *Radix Scrophulariae* 30 g, *Fructus Forsythiae* 15 g, *Cortex Moutan* 15 g, *Rhizoma Coptidis* 6 g, *Folium Phyllostachydis Henonis* 12 g, *Semen Lepidii* 15 g, *Radix Glycyrrhizae* 6 g.

Administrations and dosage: One dose per day, decocted with 100–200 ml water, decoct *Gypsum Fibrosum* and *Cornu Bubali* firstly, taken 2 to 4 times per day, oral or nasal feeding.

Recommend Chinese medicine: Xiyanping injection, Xuebijing injection, Reduning injection, Tanreqing injection, Xingnaojing injection. Drugs with similar effects may be selected according to individual conditions or may be used jointly according to clinical symptoms. Traditional Chinese medicine injection can be used in combination with decoction.

8.4.2.5. Critical type (internal block and outward desertion)

Clinical manifestations: Dyspnea, asthma requires assisted ventilation, dizziness, irritability, cold sweaty limbs, purple tongue, thick or dry fur, large floating and rootless pulse.

Recommended prescription: *Radix Ginseng* 15 g, *Radix Aconiti Lateralis Preparata* 10 g (decocted first), *Fructus Corni* 15 g, drinking with Suhexiang pills or Angong Niuhuang pills.

Recommended Chinese medicine: Xuebijing injection, Reduning injection, Tanreqing injection, Xingnaojing injection, Shenfu injection, Shengmai injection, Shenmai injection. Drugs with similar effects may be selected according to individual conditions or may be used jointly according to clinical symptoms. Traditional Chinese medicine injection can be used in combination with decoction.

Notes: Recommended usage of traditional Chinese medicine injections for severe and critical cases

The use of traditional Chinese medicine injections should follow the principle of starting with low dose and modifying gradually and dialectically according to the drug instructions. The recommended usage is as follows:

Viral infection or combined with mild bacterial infection: Xiyanning injection 100 mg in saline solution 250 ml intravenous drip, twice daily; or Reduning injection 20 ml in saline solution 250 ml intravenous drip, twice daily; or Tanreqing injection 40 ml in saline solution 250 ml intravenous drip, twice per day.

Severe fever with consciousness disturbance: Xingnaojing injection 20 ml in saline solution 250 ml intravenous drip, twice daily.

Systemic inflammatory response syndrome (SIRS) and/or multiple organ failure: Xuebijing injection 100 ml in saline solution 250 ml intravenous drip, twice daily.

Immunosuppression: Shenmai injection 100 ml in saline solution 250 ml intravenous drip, twice daily.

Shock: Shenfu injection 100 ml in saline solution 250 ml intravenous drip, twice daily.

8.4.2.6. Recovery period

a. Lung deficiency and spleen qi

Clinical manifestations: Shortness of breath, tiredness, anorexia, distention and fullness, constipation, loose stool, pale tongue, whitish greasy fur.

Recommended prescription: *Rhizoma Pinelliae Preparatum* 9 g, *Pericarpium Citri Reticulatae* 10 g, *Radix Codonopsis* 15 g, roasted *Radix Astragali seu Hedysari* 30 g, roasted *Rhizoma Atractylodis Macrocephalae* 10 g, *Poria* 15 g, *Herba Pogostemonis* 10 g, *Fructus Amomi Villosi* 6 g (decocted later), *Radix Glycyrrhizae* 6 g.

Administrations and dosage: One dose per day, decocted with 400 ml water, take once in the morning and once in the evening.

b. Deficiency of qi and yin

Clinical manifestations: Fatigue, shortness of breath, dry mouth, thirst, hyperhidrosis, anorexia, low fever or no fever, dry cough, less sputum, dry tongue, thin or weak pulse.

Recommended prescription: *Radix Adenophorae* 10 g, *Radix Glehniae* 10 g, *Radix Ophiopogonis* 15 g, *Radix Panacis Quinquefolii* 6 g, *Fructus Schisandrae Chinensis* 6 g, raw *Gypsum Fibrosum* 15 g, *Herba Lophatheri*

10 g, *Folium Mori* 10 g, *Rhizoma Phragmitis* 15 g, *Radix Salviae Miltiorrhizae* 15 g, *Radix Glycyrrhizae* 6 g.

Administrations and dosage: One dose per day, decocted with 400 ml water, intake once in the morning and once in the evening.

9. Release of isolation and notes after discharge

9.1. Release of isolation and discharge standards

9.1.1. With normal body temperature for >3 days.

9.1.2. With significantly recovered respiratory symptoms.

9.1.3. Lung imaging shows obvious absorption and recovery of acute exudative lesion.

9.1.4. With negative results of the nucleic acid tests of respiratory pathogens for consecutive two times (sampling interval at least 1 day).

Patients meeting the standards mentioned above can be released from the isolation and discharged.

9.2. Notes after discharge

9.2.1. Designated hospitals should strengthen communication with basic medical institutions in patients' residence, share medical records, and forward information of discharged cases to relevant neighborhood committee and basic medical institutions.

9.2.2. Discharged cases are recommended for continuous health monitor for 14 days, wearing facial masks, living in a ventilated single room, reducing frequency of close contact with family members, eating alone, keeping hand hygiene and avoiding outdoor activities due to the compromised immunome and risk of being infected with other pathogens.

9.2.3 A follow-up and return visit in the second and fourth weeks respectively after discharge is recommended.

10. Transfer principle

In accordance with the *Novel Coronavirus Pneumonia Case Transfer Program (Tentative Edition)* issued by National Health Commission of the People's Republic of China.

11. Hospital infection control

Strictly comply with the requirements of the *Technical Guide for the Prevention and Control of Novel Coronavirus Infection in Medical Institutions (First Edition)* and *Guidelines for Usage of Common Medical Protective Equipment in Protection of Novel Coronavirus Pneumonia (Tentative Edition)*.