

Different Management Strategy of Covid19 Patients

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TO THE EDITOR,

Coronaviruses are important human and animal pathogens. At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei Province of China. It rapidly spread, resulting in an epidemic throughout China, followed by an increasing number of cases in other countries throughout the world. In February 2020, the World Health Organization designated the disease COVID-19, which stands for coronavirus disease 2019¹. The virus that causes COVID-19 is designated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2); previously, it was referred to as 2019-nCoV.

Full-genome sequencing and phylogenetic analysis indicated that the coronavirus that causes COVID-19 is a beta coronavirus in the same subgenus as the severe acute respiratory syndrome (SARS) virus (as well as several bat coronaviruses), but in a different clade. The structure of the receptor-binding gene region is very similar to that of the SARS coronavirus, and the virus has been shown to use the same receptor, the angiotensin-converting enzyme 2 (ACE2), for cell entry². The Coronavirus Study Group of the International Committee on Taxonomy of Viruses has proposed that this virus be designated severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)³. The Middle East respiratory syndrome (MERS) virus, another beta coronavirus, appears more distantly related⁴⁻⁵. The closest RNA sequence similarity is to two bat coronaviruses, and it appears likely that bats are the primary source; whether COVID-19 virus is

transmitted directly from bats or through some other mechanism like through an intermediate host is unknown⁶.

As it is very new in origin so there is no definite treatment protocol till date. Treatment depends according to manifestation and immunity status of the sufferers.

Incubation Period: The incubation period for COVID-19 is thought to be within 14 days following exposure, with most cases occurring approximately four to five days after exposure⁷.

Spectrum of Illness Severity: The spectrum of symptomatic infection ranges from mild to critical; most infections are not severe⁸⁻¹².

- Mild with no or mild pneumonia
- Severe disease with dyspnea, hypoxia, or >50 percent lung involvement on imaging within 24 to 48 hours
- Critical disease with respiratory failure, shock, or multiorgan dysfunction

Risk factors for severe illness: Comorbidities that have been associated with severe illness and mortality include cardiovascular disease, diabetes mellitus, hypertension, chronic lung disease, cancer and chronic kidney disease. Particular laboratory features have also been associated with worse outcomes. These include lymphopenia, elevated liver enzymes, elevated lactate dehydrogenase (LDH), elevated inflammatory markers like C-reactive protein (CRP), ferritin, elevated D-dimer (>1 mcg/mL), elevated prothrombin time (PT),

elevated troponin, elevated creatinine phosphokinase (CPK) and acute kidney injury¹³⁻¹⁷.

Clinical Manifestations

Initial Presentation: Pneumonia appears to be the most frequent serious manifestation of infection, characterized primarily by fever, cough, dyspnea, and bilateral infiltrates on chest imaging. There are no specific clinical features that can yet reliably distinguish COVID-19 from other viral respiratory infections. The most common clinical features at the onset of illness were fever, fatigue, dry cough, anorexia, myalgia, dyspnea and sputum production. Less common symptoms have included headache, sore throat and rhinorrhea. In addition to respiratory symptoms, gastrointestinal symptoms like nausea and diarrhea have also been reported and in some patients, they may be the presenting complaint.

Site of Care

Home Care: Home management is appropriate for patients with mild infection who can be adequately isolated in the outpatient setting. Management of such patients should focus on prevention of transmission to others and monitoring for clinical deterioration, which should prompt hospitalization. Outpatients with COVID-19 should stay at home and try to separate themselves from other people and animals in the household. They should wear a facemask when in the same room (or vehicle) as other people and when presenting to health care settings. Disinfection of frequently touched surfaces is also important.

Treatment: Symptomatic

- Fever: Paracetamol 500 mg according to body weight
- Nasal Discharge: Anti-Histamine
- Fluid intake as much as possible.

When to Discontinue Home Isolation

When a test-based strategy is used resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms like cough, shortness of breath and Negative results of molecular assay for COVID-19 from at least two consecutive nasopharyngeal swab specimens collected ≥ 24 hours apart (total of two negative specimens).

When a non-test-based strategy is used at least seven days have passed since symptoms first

appeared and at least three days (72 hours) have passed since recovery of symptoms which has been defined as resolution of fever without the use of fever-reducing medications and improvement in respiratory symptoms like cough, shortness of breath.

Hospital Care

1. Severe Diseases

- In adults with COVID-19, supplemental oxygen should be started by standard non-breather oxygen face mask. If the peripheral oxygen saturation (SPO₂) is $< 92\%$.
- If acute hypoxemic respiratory failure persist despite conventional oxygen therapy, HFNC (High flow nasal oxygen cannula) should be used over conventional oxygen therapy.
- If HFNC not available, then trial of NIPPV with close monitoring and short-interval assessment for worsening of respiratory failure should be done.
- COVID-19 receiving NIPPV or HFNC, close monitoring should be ensuring for worsening of respiratory status, and early intubation in a controlled setting if worsening occurs.

2. Critical Diseases

- In adults with COVID-19 and shock, using dynamic parameters skin temperature, capillary refilling time, and/or serum lactate measurement over static parameters in order to assess fluid responsiveness.
- For the acute resuscitation of adults with COVID-19 and shock, conservative strategy should be followed over a liberal fluid strategy.
- First option should be crystalloids and target MAP (mean arterial pressure) will be 60 to 65 mm of Hg or more.
- If fluid not sufficiently improve pressure, then vasoactive agent can be used and first choice should be Norepinephrine.
- If Norepinephrine not available, then vasopressin or epinephrine.
- For adults with COVID-19 and shock with evidence of cardiac dysfunction and persistent hypoperfusion despite fluid resuscitation and norepinephrine, dobutamine should be added rather increasing norepinephrine dose.
- Routine use of corticosteroid should be avoided as it may increase viral replication.
- If ARDS established than 200mg corticosteroid can be given in divided dose over a day.
- If patient needs mechanical ventilation, then expert hand should attend to intubate as because failed intubation raises the chance of more contamination and video guided intubation is more preferable.

- Full set of apparatus of mechanical ventilation should be used in each new patient.

Drugs Therapy

Lots of trial is going on but none of that is completed. Scientists have suggested dozens of existing compounds for testing, but WHO is focusing on what there are the four most promising therapies which are an experimental antiviral compound called remdesivir, the malaria medications chloroquine and hydroxychloroquine, a combination of two HIV drugs, lopinavir and ritonavir and that same combination plus interferon-beta, an immune system messenger that can help cripple viruses.

Convalescent Plasma therapy: On 24/03/2020 FDA has given small basis trial for giving plasma therapy collecting from recovered patient after proper procedure.

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