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COVID – 19: PREVENTION IS BETTER THAN CURE

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ABSTRACT

The severe acute respiratory syndrome (SARS) coronavirus-2 is a novel coronavirus belonging to the family Coronaviridae and is now known to be responsible for the outbreak of a series of recent acute atypical respiratory infections originating in Wuhan, China. The disease caused by this virus, termed coronavirus disease 19 or simply COVID-19, has rapidly spread throughout the world at an alarming pace and has been declared a pandemic by the WHO on March 11, 2020. Today, there are thousands of infections and deaths that have been caused by the disease. Moreover, the symptoms of the disease include fever, cough, sneezing, sore throat, difficulty breathing, and tiredness. Additionally, the diagnosis of the disease starts by gathering samples of the upper and lower respiratory tracts of the infected person. Also, chest X-rays and CT scan are used in the diagnosis stage. Basically, there is no precise treatment for the ailment, and this calls for the need to prevent the disease from spreading. Notable prevention strategies are isolation of the infected persons, proper ventilation, hand hygiene and use of personal protective equipment.

Keywords - Coronavirus, COVID-19, Prevention, SARS-CoV-2, rRT-PCR.

1. INTRODUCTION

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was first identified in December 2019 in Wuhan, the capital of China's Hubei province, and has since spread globally, resulting in the ongoing 2019–20 coronavirus pandemic. The World Health Organization announced in February 2020 that COVID-19 is the official name of the disease. World Health Organization chief Tedros Adhanom Ghebreyesus explained that CO stands for corona, VI for virus and D for disease, while 19 is for when the outbreak was first identified: 31 December 2019. The name had been chosen to avoid references to a specific geographical location (e.g., China), animal species, or group of people, in line with international recommendations for naming aimed at preventing stigmatisation. ¹⁻³

As of 5 April 2020, more than 1.2 million cases of have been reported in more than two hundred countries and territories, resulting in over 64,700 deaths. More than 246,000 people have recovered. As a result, the way the illness spread from person-to-

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person has made it a public threat. In this case, COVID-19 is extremely transmissible, and this calls for the need to understand its pathophysiology, transmission, clinical features, diagnosis, treatment, and prevention so as to gain insight about the disease.

2. CLINICAL FEATURES, TRANSMISSION AND DIAGNOSIS

Common symptoms include fever, cough, and shortness of breath. Other symptoms may include muscle pain, diarrhoea, sore throat, loss of smell, and abdominal pain. While the majority of cases result in mild symptoms, some progress to viral pneumonia and multi-organ failure. Most infections are self-limiting. COVID-19 tends to cause more severe illness in elderly population or in patients with underlying medical problems. ⁴⁻⁸

The virus is mainly spread during close contact, and by small droplets produced when people cough, sneeze, or talk. These small droplets may be produced during breathing but the virus is not generally airborne. People may also catch COVID-19 by touching a contaminated surface and then their face. The virus can survive on surfaces up to 72 hours. It is most contagious during the first three days after symptom onset, although spread may be possible before symptoms appear and in later stages of the disease. Time from exposure to onset of symptoms is generally between two and fourteen days, with an average of five days.

The standard method of diagnosis is by reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab. The infection can also be diagnosed from a combination of symptoms, risk factors and a chest CT scan showing features of pneumonia.⁹⁻¹⁷

3. TREATMENT

There are currently no effective treatment options for the virus, but there are a few areas currently being investigated. Until an effective treatment is discovered, we're forced to wait and keep infected patients stabilized. The patient management involves treatment of symptoms, supportive care, isolation, and experimental measures. Treatments for the infected patients mainly involve fluid and oxygen therapy to keep the body in as stable a condition as possible. Drugs are also used to maintain homeostasis, keep blood pressure and heart rate stable, and ease the pain and discomfort of the condition while the immune system does its best to fight off the virus.

Researchers were able to isolate the virus which is an important step in identifying exactly how the virus works and potentially finding a cure. Vaccine and drug development is a multistep process, typically requiring more than five years to assure safety and efficacy of the new compound. In February 2020, the WHO said it did not expect a vaccine against SARS-CoV-2 – the causative virus for COVID-19 – to become available in less than 18 months, and conservative estimates of time needed to prove a safe, effective vaccine is one year. Several national regulatory agencies, such as EMA and FDA, approved procedures to expedite clinical testing.

In late January 2020 during the 2019–20 coronavirus pandemic, Chinese medical researchers stated that exploratory research into chloroquine and two other medications, remdesivir and lopinavir/ritonavir, seemed to have "fairly good inhibitory effects" on the 2019 novel coronavirus. Chloroquine had been also proposed as a treatment for SARS-CoV-2 with in vitro tests inhibiting the virus. According to the US CDC, either chloroquine or hydroxychloroquine is recommended for treatment of hospitalized people infected by COVID-19 in several countries, although there is no such recommendation in the United States, as of March 2020. Preliminary clinical trials to evaluate the safety and efficacy of hydroxychloroquine for treating COVID-19 infection are planned in the United States, but the CDC stated that "the use, dosing, or duration of hydroxychloroquine for prophylaxis or treatment of SARS-CoV-2 infection" were not established at this time. ¹⁸⁻²⁰

4. PREVENTION

Stay aware of the latest information on the COVID-19 outbreak, available on the WHO website and through national and local public health authority. Most people who become infected experience mild illness and recover, but it can be more severe for others. Take care of your health and protect others by doing the following (WHO guidelines):

• Wash your hands frequently

Regularly and thoroughly clean your hands with an alcohol-based hand rub or wash them with soap and water.

• Maintain social distancing

Maintain at least 1 metre (3 feet) distance between yourself and anyone who is coughing or sneezing.

• Avoid touching eyes, nose and mouth

Why? Hands touch many surfaces and can pick up viruses. Once contaminated, hands can transfer the virus to your eyes, nose or mouth. From there, the virus can enter your body and can make you sick.

Practice respiratory hygiene

Make sure you, and the people around you, follow good respiratory hygiene. This means covering your mouth and nose with your bent elbow or tissue when you cough or sneeze. Then dispose of the used tissue immediately.

Why? Droplets spread virus. By following good respiratory hygiene, you protect the people around you from viruses such as cold, flu and COVID-19.

If you have fever, cough and difficulty breathing, seek medical care early.

Stay home if you feel unwell

If you have a fever, cough and difficulty breathing, seek medical attention and call-in advance. Follow the directions of your local health authority.

Why? National and local authorities will have the most up to date information on the situation in your area. Calling in advance will allow your health care provider to quickly direct you to the right health facility. This will also protect you and help prevent spread of viruses and other infections.

• Stay informed and follow advice given by your healthcare provider

Stay informed on the latest developments about COVID-19. Follow advice given by your healthcare provider, your national and local public health authority or your employer on how to protect yourself and others from COVID-19.

Why? National and local authorities will have the most up to date information on whether COVID-19 is spreading in your area. They are best placed to advise on what people in your area should be doing to protect themselves.

Avoid Smoking

Recent evidence suggests smokers have much higher expressions of the protein ACE2 in the lungs — which gives the virus ample opportunity to attach itself and infect the cell. This could be one explanation of why men in China were more likely to experience the most severe symptoms of the disease. It's recommended that you avoid smoking anything, including marijuana or e-cigarettes — at least until the pandemic comes to an end.

5. CONCLUSION

COVID-19 has now spread globally with increasing morbidity and mortality among all populations. In the absence of a proper and effective antibody test, the diagnosis is presently based on a reverse-transcription PCR of nasopharyngeal and oropharyngeal swab samples. The clinical spectrum of the disease presents in the form of a mild, moderate or severe illness. Most patients are either asymptomatic carriers who despite being without symptoms have the potential to be infectious to others coming in close

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contact, or have a mild influenza-like illness which cannot be differentiated from a simple upper respiratory tract infection. Moderate and severe cases require hospitalisation as well as intensive therapy which includes non-invasive as well as invasive ventilation, along with antipyretics, antivirals, antibiotics and steroids.

Corona virus disease 2019 (COVID-19) has been spread to almost all continents of the world except Antarctica. WHO has declared COVID-19 as a pandemic. Elderly persons with co-morbidities are more affected. It spreads mainly via Respiratory droplets. Pneumonia is the most common complication. Severe cases have a mortality rate of 2.3 to 5%. Presently there is no standardized treatment or vaccine available for COVID-10. Therefore, prevention is only the best option lying with all of us. Strictly follow the instructions given by local government and health authorities for prevention and spread of COVID-19. Let us all join the hands to fight against COVID-19.

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