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COVID-19: An Emerging Pandemic

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Abstract

There have been a recent cluster of pneumonia cases in Wuhan, China which has now spread globally affecting thousands of people i.e. more than 85,000 cases as per recent records and killing 2924 people all over the world. This pneumonia was identified to be caused by a novel betacoronavirus-the 2019 novel coronavirus (2019-nCoV). So far 60 countries have been affected and there is a Case Fatality Rate of 3.43%. These coronaviruses can cause illness which rangefrom the common cold to severe diseases like Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS). A recently discovered new strain i.e. "SARS-CoV-2 has not been identified in humans before.[1]

Key words: Coronavirus, Pandemic, COVID-19, WHO, India.

INTRODUCTION

The Coronaviruses are enveloped non-segmented positive-sense RNA viruses belonging to the family Coronaviridae and the order Nidovirales and broadly distributed in humans and other mammals.

A novel coronavirus (CoV) is a new strain of coronavirus that has not been previously identified in humans before the outbreak was reported in Wuhan, China in the last month of the year 2019.[1]

Most of the human coronavirus infections are mild unlike the epidemics of the two Betacoronaviruses i.e. severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV). These have caused more than 10 000 cases in the past two decades, with mortality rates of 10%.[2]

BACKGROUND

Coronaviruses are mainly transmitted by large respiratory droplets and direct or indirect contact with infected secretions. They have also been detected in blood, faeces and urine and, under certain circumstances, airborne transmission is thought to have occurred from aerosolised respiratory secretions and faecal material. COVID-19 has been classified as an airborne high consequence infectious disease (HCID).

In the absence of effective drugs or a vaccine, the control of this disease relies on the following measures-

- Prompt identification
- Appropriate risk assessment
- Management and isolation of possible cases
- Investigation and follow up of close contacts to minimise potential onward transmission.[3]

PROBLEM STATEMENT

As of Thursday February 13, 1,369 people had died from COVID-19. This represents about 2.9 per cent of the 46,550 cases. By comparison, around 25 per cent of MERS cases resulted in the death of the patient.

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However, at this stage it is still too early to determine how deadly the virus is: thousands of patients are being tested, with more than 8,200 in a serious condition and it is not yet known how these cases will evolve. With the virus now present in some 24 countries, international solidarity is of utmost importance.[4]

Coronavirus Situation Globally[5]

There are a total of 1,610,062 cases globally with deaths reaching upto 1 lakh i.e 96,365 cases. The three countries with the maximum case load are

1) USA- 4,68,895 Cases and 16,697 Deaths

2) Spain- 1,53,222 Cases and 15,447 Deaths

3) Italy - 1,43,626 Cases and 18,279 Deaths

China being the country to have detected the virus now has a total of 81,907 cases with 3,336 deaths and have been successful in controlling their cases significantly.

Our country at the moment has about 6771 cases and 228 deaths which are rapidly on the rise even though the entire nation has been on the lockdown for the 17 days.

EPIDEMIOLOGY

The WHO reports that human to human transmission is occurring with a preliminary R0 estimate of 1.4-2.5. Current estimates of the incubation period of the virus range from 2-10 days. Experts are unclear whether transmission can occur from asymptomatic individuals or during the incubation period.[6]

CLINICAL PRESENTATION

For confirmed coronavirus disease 2019 (COVID-19) cases, reported illnesses have ranged from mild symptoms to severe illness and death. Symptoms can include:

- Fever
- Cough
- Shortness of breath[7]

PREVENTION

During previous outbreaks due to other coronavirus (Middle-East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS), human-to-human transmission occurred through droplets, contact and fomites, suggesting that the transmission mode of the 2019-nCoV can be similar.

The basic principles to reduce the general risk of transmission of acute respiratory infections include the following:

- Avoiding close contact with people suffering from acute respiratory infections.
- Frequent hand-washing, especially after direct contact with ill people or their environment.
- Avoiding unprotected contact with farm or wild animals.
- People with symptoms of acute respiratory infection should practice cough etiquette (maintain distance, cover coughs and sneezes with disposable tissues or clothing and wash hands).
- Within health care facilities, enhance standard infection prevention and control practices in hospitals, especially in emergency departments.[7]

TREATMENT

To date, there is no specific medicine recommended to prevent or treat the novel coronavirus. However, those infected with 2019-nCoV should receive appropriate care to relieve and treat symptoms and those with severe illness should receive optimized supportive care. Some specific treatments are under investigation and will be tested through clinical trials. WHO is helping to coordinate efforts to develop medicines to treat nCoV with a range of partners.

Measures which are not recommended-

- Taking Vitamin C
- Smoking
- Drinking tradition herbal teas
- Wearing multiple masks to maximize protection
- Taking self-medication such as antibiotics

In any case, if you have fever, cough and difficulty breathing seek medical care early to reduce the risk of developing a more severe infection and be sure to share your recent travel history with your health care provider. Antibiotics do not work against viruses, they only work on bacterial infections. The novel coronavirus is a virus and, therefore, antibiotics should not be used as a means of prevention or treatment.[8]

Public Health Measures

WHO does not recommend any specific health measures for travellers. In case of symptoms suggestive of respiratory illness either during or after travel, travellers are encouraged to seek medical attention and share their travel history with their health care provider. During previous outbreaks due to other coronavirus (Middle-East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS), human-to-human transmission occurred through droplets, contact and fomites, suggesting that the transmission mode of the 2019-nCoV can be similar. The basic principles to reduce the general risk of transmission of acute respiratory infections include the following:

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None.

CONFLICT OF INTEREST

None.

ABBREVIATIONS USED

WHO: World Health Organization; **MERS:** Middle-East Respiratory Syndrome.

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