

Occurrence and Signification of COVID-19 Pandemic

Tamal Kanti Choudhury¹, Pinaki Bhattacharjee², PK Basu² and Sujit K Bhattacharya^{2*}

¹Former Professor and Head, Department of Surgery, SSKM Hospital, Kolkata, India

²Ultracare Hospital and Research Centre, Kolkata, India

*Corresponding Author: Sujit K Bhattacharya, Ultracare Hospital and Research Centre, Kolkata, India.

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Abstract

A highly infectious virus, COVID-19, currently causing a pandemic, does not show any signs of abetting. Most of the cases/deaths were reported from the USA, Spain, Italy, UK, France, Germany and Iran. The most common symptoms of Coronavirus disease (COVID-19) are fever, tiredness, sneezing, dry cough and breathlessness. Most people (about 80%) recover from the disease. More rarely, the disease can be serious and even fatal. Older people and people with other medical conditions (such as asthma, diabetes, or heart disease), may be more vulnerable to becoming severely ill. An antibody test to detect antibodies against the virus has been developed and is being utilized to identify individuals who have been infected by the virus. These individuals can be isolated so that the infection does not spread. Nasopharyngeal throat swab is used to demonstrate presence of COVID-19 by RT-PCR. There is no standard evidence-based treatment of Coronavirus infection. An effective vaccine is needed.

Keywords: Coronavirus Disease (COVID-19); Pandemic

Introduction

A highly infectious virus, COVID-19, currently causing a pandemic, does not show any signs of abetting. The virus was first detected in Wuhan province in China. Worldwide till 25 April 2020, 2.9M confirmed cases with 203K deaths were reported in 203 areas, countries or territories. 817K cases recovered. Most of the cases/deaths were reported from the USA, Spain, Italy, UK, France, Germany and Iran (Table 1 and 2).

Country	Cases	Deaths
USA	219,764	55,415
Spain	195,351	23190
Italy	154175	26644
UK	122875	20732
France	107773	22,856
Iran	84338	5,710
Germany	148381	5,976
Worldwide	2.9 M	203K

Table 1: Country-wise cases and deaths.

Region	Cases
Europe	1,341,851
Americas	1,094,846
Eastern Mediterranean	165,369
Western Pacific	142,639
South-East Asia	44,592
Africa	20,316

Table 2: Cases WHO Region-wise.

The virus

The name Coronavirus is derived from the Latin corona, meaning “crown” or “halo”, which refers to the characteristic appearance reminiscent of a crown or a solar corona around the virions (virus particles) when viewed under two-dimensional transmission electron microscopy, due to the surface being covered in club-shaped protein spikes. It is an RNA virus. Apart from mammals the Coronaviruses cause infection in birds. In humans, Coronaviruses cause respiratory tract infections that can be mild, such as some cases of the common cold (among other possible causes, predominantly rhinoviruses), and others that can be lethal, such as SARS and MERS.

Clinical features

People may be infected with the virus for 1 to 14 days before developing symptoms (incubation period). The most common symptoms of Coronavirus disease (COVID-19) are fever, tiredness, sneezing, dry cough and breathlessness. Most people (about 80%) recover from the disease. More rarely, the disease can be serious and even fatal. Older people and people with other medical conditions (such as asthma, diabetes, or heart disease), may be more vulnerable to becoming severely ill. Vertical transmission has been reported from China. Recurrent infections have been reported which may be attributed to relapse of the previous infection or a new infection. The viruses are transmitted by droplet infection, possibly by aerosol and close contact with the saliva of infected patients. The viruses can survive on the surface of furniture, door handles and similar structures for some time.

Laboratory investigations

An antibody test to detect antibodies against the virus has been developed and is being utilized to identify individuals who have been infected by the virus. The antibody test is simple to perform and is positive after about 7 days of infection. These individuals can be isolated so that the infection does not spread. Nasopharyngeal throat swab is used to demonstrate presence of COVID-19 by RT-PCR.

Prevention

Protect yourself and others around you by knowing the facts and taking appropriate precautions. Follow advice provided by your local public health agency.

To prevent the spread of COVID-19:

- Clean your hands repeatedly using soap and water, or an alcohol-based sanitizer.
- Maintain a safe distance from anyone who is coughing or sneezing.
- Avoid touching your eyes, nose or mouth.

- Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze. It is better to wear a mask.
- Stay home if you are unwell.
- If you have a fever, coughs, and difficulty breathing, seek medical attention. Telemedicine may be helpful. Doctors are often doing video conferencing to advice patients.
- Follow the directions of your local health authority.
- Avoiding unneeded visits to medical facilities allows healthcare systems to operate more effectively, therefore protecting you and others.
- Drink plenty of warm water

However, coughing covering the mouth and nose, keeping distance of at least 1 to one and half meter, and repeated handwashing's with soap and plenty of water are recommended. Isolation of patients and quarantine of contacts are of utmost importance. When the infection is apprehended to spread to the community, lockdown of the communities is essential, although this might cause some inconvenience to the people.

Treatment

There is no standard evidence-based treatment of Coronavirus infection. Anecdotal data indicates that anti-malarial drug, hydroxychloroquine, in combination with anti-retroviral may be useful. No randomised trial is available. The anti-retroviral drugs tried are lopinavir and ritonavir and often used along with azithromycin and hydroxychloroquine.

Argument

Epidemiology data shows that the virus has affected fewer people in South-East Asia and Africa than in Europe, Americas, Eastern Mediterranean, and Western Pacific. One may argue that this difference could be attributed to climate. Genetic resistance may be another factor. Crowding of people in the high incidence countries might have contributed to the widespread spread of the deadly virus in these countries. Virulence of the virus may vary from one place to another.

Economic consequences

Maintaining economy during prolonged lockdown is an extremely difficult task. Mobilization of resources, allocation of funds judiciously and encouraging donations towards the relief of the poorest of the poor are important principles of mitigation of loss of revenue. Education of children and also adults and office work are hampering tremendously. Work from home and teaching can be done.

Future need

- Develop user-friendly, high sensitive and specific test for diagnosis and surveillance
- Elucidate the epidemiology better
- Develop safe and effective drug to treat the infection. Plasma of recovered COVID-19 patients contain antibodies which if transfused may be useful. Trials are going on in many countries including in three centres in India
- Develop suitable preventive vaccine
- Maintain economic growth, support poor people and daily wage earners
- Prevent spread of fake news
- A responsible media is desired [1-9].

Conclusion

There is no doubt that the virus is going to stay with us for uncertain period of time. Till effective drugs and suitable vaccine are found out, preventive measures are the main stay to protect us from getting the infection. This means that our way of daily living will change to a large extent to adjust to different activities like health related practices, work, education and many other issues. Maintaining social distance, wearing masks, not to spit, work from home and distance learning is some of the newer activities that will become part of daily life.

Further developments

1. Treatment: So long treatment of Human COVID-19 disease has been supportive measures with unsure benefits of use of hydroxychloroquine. Now, the world Health Organization has categorically advised not to use it because it has much potential cardiac toxicity. On the other hand the Indian Council of Medical Research, New Delhi, the apex body for Biomedical Research in India has informed that the drug is in use in India for long time and can be used to treat COVID-19 patients without much problem. The drug should be taken after food.
2. Remdesivir, an antiviral drug, has been shown in preliminary results to reduce mortality to about 7.1% from 11.9% in the placebo group. Further research will confirm the usefulness of the drug in the treatment of COVID-19 disease.
3. Although, the incidence of COVID-19 has been reported to be less in children, but it should be remembered that children are at risk of the disease and should take similar measures as in the adults. Kawasaki disease has similar manifestations as COVID-19 disease in children.
4. The COVID-19 disease may manifest as conjunctivitis and we should keep this in mind during the pandemic of the virus.

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