

The Wuhan Virus (Novel Coronavirus) and Covid-19



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Coronaviruses are small enveloped RNA viruses that circulate among animals but some of them are also known to infect humans since 1960's. The host range of Corona viruses is wide, for instance, the Middle East Respiratory Syndrome coronavirus (MERS-CoV) originated from camels and the Severe Acute Respiratory Syndrome coronavirus (SARS) originated from civet cats.

To date, seven Coronaviruses have been known to infect humans. The novel coronavirus detected in China is genetically closely related to the 2003 SARS virus and appears to have similar characteristics, although there is still limited data available on this virus. Less than sixteen weeks after its isolation in January 2020 as a novel strain, so far over 44,79,033 confirmed cases (as on 14th May 2020) have been reported from most of the countries. The virus has claimed over 3,00,284 lives, predominantly in USA and Europe. And, there seem to be no signs of the spread stopping; thousands of new cases are being reported daily. The 2019 novel coronavirus is now named SARS-CoV-2 while the disease associated with it is called COVID-19.

In 2002-2003, SARS virus emerged in China and more than 8000 SARS cases were reported by 33 countries over a period of 8 months and one in ten cases of SARS died.

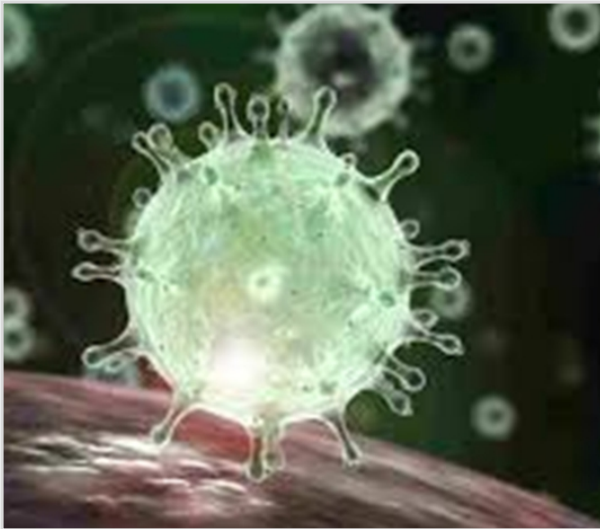
The ongoing COVID-19 epidemic has caused more than 82000 reported cases from China and later from Korea and some European countries. The preliminary data suggests that SARS-CoV-2 is spreading faster but is less fatal than SARS

coronavirus.

While animals are the source of this virus, it is now spreading from human to human. The virus seems to be transmitted mainly via respiratory droplets that people sneeze, cough or exhale. Symptoms may appear anytime from two to fourteen days after infection. The symptoms include fever, cough and difficulty in breathing, muscle pain and tiredness. More serious cases develop pneumonia, acute respiratory distress, septic shock which may lead to death. Elderly people and those who have chronic underlying conditions are expected to be more at risk of developing severe symptoms.

Anyone who has an acute respiratory infection (either cough / sore throat/ breathing difficulty) AND in the immediate past 14 days of these symptoms he was in close contact with confirmed/probable case of COVID-19 or travelled to an area where there is ongoing community transmission of COVID-19, or worked/lived in such areas, has to contact a physician and get himself tested for this infection. The local governments have listed the laboratories which can perform this test and also specified about the specimen collection and transport to laboratories.

Preventive measures, especially while visiting the areas with presumed ongoing spread of COVID-19 include the following: avoid contact with sick people, avoid visiting market places where animals are handled, follow general measures of hand hygiene, food hygiene, avoid contact with animals and their droppings. Face



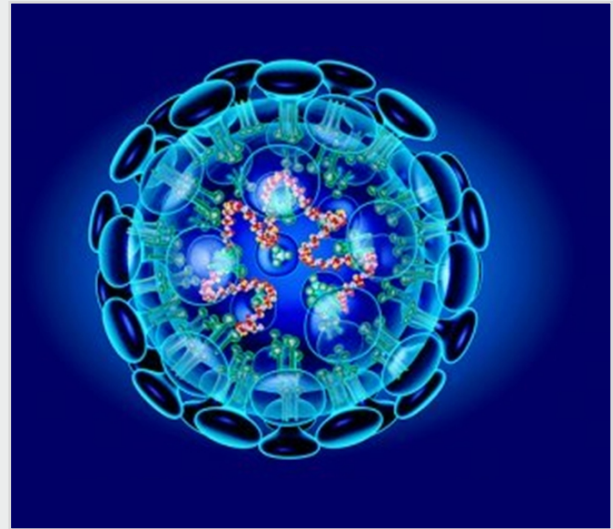
SARS-CoV by electron microscope

masks help prevent further spread of infection from those who are sick to others around them. Currently there are no vaccines against Coronaviruses. This makes it very important that prevention is the only way to contain the infection.

The World Health Organization (WHO) and policymakers around the world are in a anxious search for an action plan to contain the spread of this virus as quickly as possible. A key component of how the disease could be spreading is the environment. Although we don't know exactly how important the environment is in the spread of this virus, it has been a key component in other disease outbreaks.

The uncertainty surrounding the spread of the SARS-CoV-2 makes it difficult to identify specific measures to prevent environmental transmission. But the measures such as cleaning frequently touched surfaces (like walls, windows, toilets and baths) with bleach and ethanol have been suggested. Clothes and other textiles should be washed with hot water and detergents. In places prone to contamination, like hospitals, cleaners should wear personal protective equipment. China has gone as far as sterilizing bank notes, while in many other countries, including India the health officials have taken to spraying disinfectants in public places like markets.

Viral epidemics are often associated with climate crisis, which is affecting the movement of humans, animals and pathogens. The “Climate



Structure of Coronavirus

apocalypse” often fixates on the temperature changes, sea level rise and natural disasters. Epidemics are the overlooked result belonging to the future. Most coronaviral diseases are zoonotic and experts claim that climate change will accelerate their transmission.

In the wake of COVID-19, China's GDP growth in the first quarter of 2020 is projected to fall to 4 % (which was 6% before the virus emerged). While COVID-19 took the world by surprise and rattled the global markets, it offers a potential warning of what lies in store as zoonotic diseases proliferate at greater rates due to climate change.

India has over 80,000 confirmed cases, while more than 2500 have lost lives due to this disease. India is at special risk because of its dense population, patchy health care system and high rate of migration.

Hopes that the coronavirus would be contained to China have vanished as 213 countries across the globe have reported COVID-19 cases including sub-Saharan Africa (Nigeria), France, UAE etc and stock markets are pounding amid fears of a global recession.

As Arctic frost melts and global temperatures inch up, what pathogens that have been buried for millions of years will be released into atmosphere and can we combat them?

References

The disease statistics are as on 14/05/2020
<https://www.who.int/teams/risk-communication/epi-win-updates>