Influence of corona virus on human body

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Abstract

Corona virus (COVID-19) is a highly contagious disease which originated in Wuhan, China. The virus supposed to have come from bats, transmit to civet cats to humans. This viral infection has impelled the World Health Organization (WHO) to announce public health crisis throughout the globe. The ailment first attacks the respiratory system, prompting respiratory failure in serious cases and it may enter the blood circulatory system, causing sepsis. By and large, this occurs among senior residents and people who have other co-morbid conditions such as diabetes and hypertension. After the confirmation of first positive COVID-19 case on 30 January 2020, in Kerala state, followed by two more evidence from the same state, has generated panic within India. The spread shoots up in March 2020, following numerous cases were appeared across the country. The majority of the positive cases have travel history to coronavirus affected countries (China, Italy, Iran, England, and Dubai). COVID-19 rate of infection in India is 2 %, altogether lower than in the most exceedingly terrible influenced nations. Although, the further impact of this novel virus is yet uncertain within India.

Keywords: Coronavirus, COVID-19 mechanism, India situation

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1. Introduction

Novel COVID-19 is a big cluster of viruses which develop ailments starting from the ordinary cold to further stern diseases such as Middle East Respiratory Syndrome (MERS-CoV) as well as Severe Acute Respiratory Syndrome (SARS-CoV). Figure 1 depicts the impending animal genesis of human corona-virus. SARS-CoV discovered in 2003 and associated with about 650 humans’ mortalities in Hong-Kong/ P.R. China between 2002-2003 years. This virus is predicted to have originated from bats, transmit to civet cats to peoples (Sohrabi et al. 2020). Further, MERS-CoV thought to come from Arabian camels to human beings in Saudi Arabia (2012) killed nearly 800 persons in the Middle East. Recently, the outbreak of new china strain, i.e. SARS-CoV-2 in Wuhan city, Hubei province of P.R. China, has evolved as a worldwide health danger. On 31 Dec 2019, 27 cases of pneumonia from unidentified origin were recognized in Wuhan. Researchers correlate the epidemiologically of this infection among peoples to a live seafood marketplace in Wuhan, P.R. China (Bogoch et al., 2020; Lu et al. 2020). After that, China


informed about this occurrence to the World Health Organization (WHO) and shut down the seafood market completely. Investigations revealed that this virus as a coronavirus. (Xinhua, 2020). Next, the count of infected patient’s starts rising exponentially indicated the beginning of human-to-human spread. From 2 Jan 2020, 41 inpatients had been found positive with COVID-19 infection (Huang et al. 2020). All these peoples were infected within the hospital, prone to nosocomial infection (Rothan and Byrareddy, 2020). Therefore, COVID-19 is probably extended as of numerous patients receiving infection at different areas all during the medical clinic throughout murky systems.

Afterwards, on Jan 30, 2020, the WHO reported that the coronavirus outbreak is a community health crisis having global distress posturing a soaring menace to countries with weak health systems (WHO, situation report). Even before the announcement of COVID-19 as a deadly disease (pandemic) by WHO (March 11, 2020), the world recognized the COVID-19 as a swiftly expanding global threat that raced across continents at rapid speed. New current disease epicenters were reported in Italy, Iran, Spain, France, Germany, UK, America, South Korea and Iran. However, a clear understanding of the epidemiology of this novel coronavirus is still not explained. The main objective of this article is to understand the COVID-19 virus since its outbreak to incoming within India. Firstly, we explained about coronavirus (COVID-19), its effect on human health as well as the impact of this deadly virus in India after the detection of the first case.

![Figure 1](http://doi.org/10.36295/ASRO.2020.231768)

Figure 1 Genesis of human corona-virus (Rodriguez et al. 2020)
2. Tracking Corona in humans

Generally, four types of coronaviruses have been in exchange with humans such as NL63, 229E, HKU1 and OC43, and they cause easygoing respiratory disease. (Singhal, 2020) WHO gave name to this deadly disease, as novel Corona virus (COVID-19) on 11 Feb 2020) which has reproduction rate higher than 1 (~2.23 to 3.48) (Zhao et al. 2020). Corona virus originated from SARS-CoV-2 (beta corona virus). It has from 60 nm- 140 nm diameter and crown-like spikes on the outer surface; therefore, it was named as corona virus, as indicated in Figure 2 (Shereen et al., 2020).

![Image of Novel Corona Virus](image)

Figure 2 Animated picture of Novel corona virus-2 (Sohrabi et al. 2020)

COVID-19 infection moves from the rear of the throat to the lungs and afterward to the blood and can likewise be spreads through respiratory droplets released by a tainted individual during cough/sneeze. Sound individuals get this disease through breathing in these droplets or contacting the surfaces on which these drops land and afterward touching their eyes, nose, and mouth. Subsequent to entering inside the body, the spikes like protein remain together with angiotensin-changing enzyme 2-receptor, present on the respiratory cells (Rothan et al. 2020). From that point onward, entering inside it and replicating to build the disease inside. As the infection continues duplicating, it moves to the lungs, causing aggravation in the alveoli or lung sacs filling them with liquid and discharge causing pneumonia. The aroused lungs make it hard for the individual to inhale, prompting intense respiratory pain disorder between day eight and day 15 of the beginning of indications. The virus first attacks the respiratory framework, prompting respiratory disappointment in serious cases, and it may enter the circulation system, causing sepsis. At that point, there can be auxiliary infections followed by death. Ordinarily, this occurs among senior residents and people who have other co-morbid conditions like diabetes and hypertension. The sickness is known to kill between 3-4 % of those infected. The ongoing investigation of the 191 adults admitted to Jinyintan and Wuhan pneumonic emergency clinics in China shows that 48% had co-bleak conditions, for example hypertension (30%), trailed by diabetes (19%) and coronary heart infections (8%). The infection has additionally indicated some gastro-intestinal side effects like the diarrhoea (5%). The normal period of non-survivors was 17 years more than the survivors (Zhou et al. 2020).

3. Impact of COVID-19 in India

India situation

The chronologies of corona infections in India are as follows. After the confirmation of first positive COVID-19 case on 30 January 2020, in Kerala state, supported by two more evidence from the same state, generated panic ...

within the country. All these three were students and came from Wuhan, i.e. epicentre of COVID-19. Further, the epidemic has reached many other cities in the country, infecting several people. The infection rate of COVID-19 in India is 2%, altogether lower than in the most exceedingly terrible influenced nations. The spread shoots up in mid March, following numerous cases were appeared across the country.

![Flow chart of COVID-19 effect on the human body](image)

**Figure 3** Flow chart of COVID-19 effect on the human body

The majority of the cases have a travel history to coronavirus affected countries (China, Italy, Iran, England, and Dubai). According to MoHFW, the percentages of corona virus positive cases of various age groups are as follows: 0-20 years (9%); 21-40 years (41%); 41-60 years (33%); and above 60 years (17%). Local spread of coronaviurs


(infection amongst those which have no journey to affected countries) reported in five states: Delhi, Karnataka, Kerala, Maharashtra and Uttar Pradesh. Haryana, Jammu & Kashmir, Ladakh, Punjab, Rajasthan, Tamil Nadu, Telangana and Andhra Pradesh have only imported cases. Kerala released the Time-Location chart of the positive instances so that contacts can reach out to the health service. While, in other states, tracking of contacts, home quarantine and isolation of cases is ongoing along with other containment measures.

**Diagnosis**

As per the guidelines of WHO a suspect case is that which has symptoms like sore throat, fever, and dry cough as well as who has travel history to China/regions of local spread or get in touch with corona virus-infected patients. Though these victims may be of asymptomatic or having no fever. Generally, molecular type test has conducted to confirm the coronavirus (throat swab/ nasopharyngeal swab). COVID-19 virus can also be investigated through excreta and in stern cases by blood. In India, the taken samples were sent to nominated reference labs or the National Institute of Virology in Pune.

**Treatment**

Treatment of corona virus-infected person is supportive and symptomatic. The people-to-people spread of COVID-19 infection led to the separation of inpatients and administered under a mixture of treatments. Due to absence of any certain antiviral vaccine, most of the infected patients were treated by all-purpose antiviral agents such as nucleoside analogues as well as HIV-protease inhibitors that may be used until the availability of any effective drug (Lu H., 2020). Three patients in Rajasthan state recovered with the mixture of anti-malaria, anti-Swine flu as well as anti-HIV drugs. On 23 March 2020, the Indian council of medical research (ICMR) prescribed hydroxychloroquine for frontline health care workers to lower the rate of infection.

**Additional preventive steps**

For controlling the outbreak of infections, patient isolation and contact tracing are endless ways used throughout the world (Fraser et al. 2004). Previously, these techniques had outstanding results for controlling outbreaks, like smallpox as well as SARS. However, these are not very effective in controlling the transmission of influenza (Ferguson et al. 2001; Klinkenberg et al. 2006). But in the majority of the cases, patient isolation and contact tracing are not much effective to control new pandemic i.e.Covid-19 within three months due to long delays from the onset of symptoms to isolation (Hellewell et al. 2020). The various preventive strategies are taken by China to curb the new coronavirus outbreak, like epidemic regions lockdown, control of traffic, restriction on travelling, compulsory facial masks, shut down of schools and work from home etc. resulted in zero newly positive cases. Therefore, Prime Minister of India issued an order for State/UTs prescribing lockdown for containment of COVID-19 epidemic in the entire country for 21 days with effect from 25 March 2020. This was mainly done to maintain the social distancing within the peoples and to reduce the chances of community transmission.
Take home recommendations

- Keep away from individuals who are ill. Keep up in any event three feet separation among yourself and any individual who is sniffling or coughing.
- Keep away from touching your eyes, nose, as well as mouth.
- Clean and sanitize oftentimes contacted items and surfaces utilizing a standard family unit cleaning splash or wipe.
- Wearing a mask isn't vital except if you are dealing with a contaminated individual. The centers for disease control (CDC) recommend that solitary infected individuals wear masks to forestall the spread of the infection.
- Keep as a main priority the travel warning set out by the Ministry of Health and Welfare.
- Keep in touch with the timely information/recommendations shared by WHO, CDC and other associations regarding COVID-19, quickly spreading and possibly hazardous corona virus disease of worldwide concern.

4. Conclusions

The outbreak of COVID-19 virus has been adjudged as a worldwide health emergency. This infection spreads through respiratory droplets released by a contaminated individual during cough/sniffle. Typically, this occurs among senior residents and people who have other co-morbid conditions like diabetes and hypertension. The infection is known to kill between 3-4 % of those it infects. After the confirmation of first positive COVID-19 case on 30 January 2020, in Kerala state, supported by two more evidence from the same state, has generated panic within the India. The percentage rate of fatalities, as well as recovery rate out of the total positive cases, was 2.43% & 6.39%. The infection rate of COVID-19 in India is 2, altogether lower than in the most exceedingly terrible influenced nations. Thus, apart from cut this epidemic, various preventive strategies (epidemic regions lockdown, control of traffic, restriction on travelling) should be taken to curb the new corona virus outbreak. Even though, the future impact of this novel virus is yet uncertain within India.

References


