

COVID-19: A COMPREHENSIVE REVIEW**DR. PIYUSH SHUKLA**

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❖ ABSTRACT:

Coronavirus disease 2019 (COVID-19) is a novel infectious disease with lack of established laboratory markers available to evaluate illness severity. Coronaviruses are viruses of medical importance. They include transmissible gastroenteritis virus (TGEV), porcine epidemic diarrhea virus (PEDV), and the human coronaviruses severe acute respiratory syndrome coronavirus (SARS-CoV) responsible for the epidemic in 2003, and Middle East respiratory syndrome coronavirus (MERS-CoV). COVID-19, popularly known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), emerged in China. Despite drastic containment measures, the spread of this virus is ongoing. SARS-CoV-2 is the aetiological agent of coronavirus disease 2019 (COVID-19) characterised by pulmonary infection in humans.

Keywords: COVID-19, SARS-CoV

1. INTRODUCTION:

Coronaviruses are viruses of both medical and research importance (Masters, 2006 Lippi et al., 2020). They include transmissible gastroenteritis virus (TGEV), porcine epidemic diarrhea virus (PEDV), and the human coronaviruses severe acute respiratory syndrome coronavirus (SARS-CoV) blameworthy for the epidemic in 2003, and Middle East respiratory syndrome coronavirus (MERS-CoV) (Lippi et al., 2020). COVID-19, popularly known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), emerged in China. Despite substantial containment assess, the spread of this virus is ongoing. SARS-CoV-2 is the anatomizing agent of coronavirus disease 2019 (COVID-19) signalize by pulmonary infection in humans (Devaux et al., 2020).

Coronavirus disease 2019 (COVID-19) is a novel contagious affliction with lack of established laboratory markers obtainable to gauge ailment severity (Lippi et al., 2020). WHO has proclaimed that there is no peculiar ministrations or vaccines for the COVID-19, however, there are R & D ongoing efforts (WHO, 2020). As of February 10, 2020, a total of 40,554 cases with laboratory- confirmed COVID-19 infection have been detected in the world reported by the World Health Organization (WHO) (WHO, 2020). Since its emergence in December 2019, the outbreak of novel Coronavirus Disease 2019 (COVID-19) outbreak has infected over 113,000 people globally with nearly 4000 deaths (WHO, 2020). The COVID-19 infection was generally susceptible, and with a relatively low fatality rate. (Tian et al.,

2020). An emerging outbreak of COVID-19 has been detected in at least 26 countries worldwide (Husnayain et al., 2020).

2. EPIDEMIOLOGY:

An outbreak of respiratory illness proved to be infected by a 2019 novel coronavirus, officially named Coronavirus Disease 2019 (COVID-19), was notified first in Wuhan, China, and has spread rapidly in China and to other parts of the world (Cheng et al., 2020). The imported patients with COVID-19 were those who visited or originated from Wuhan city, and were detected at the end of January 2020; subsequently, secondary and tertiary transmissions occurred nationwide (Tian et al., 2020).

Because the first cases of the COVID-19 disease were linked to direct exposure to the Huanan Seafood Wholesale Market of Wuhan, the animal-to-human transmission was presumed as the main mechanism. Nevertheless, subsequent cases were not associated with this exposure mechanism. Therefore, it was concluded that the virus is transmitted from human-to-human, and symptomatic people are the most frequent source of COVID-19 spread (Cascella et al., 2020).

3. COVID-19 AND TEMPERATURE:

Exploring the role of ambient temperature in coronavirus disease 2019 (COVID-19) transmission is of importance in understanding the patterns of the epidemic (Ran et al., 2020). Temperature has a positive linear relationship with the number of COVID-19 cases (Xie et al., 2020). It is reformed that covid-19 spread rates will decrease with warm summer temperatures (Jamil et al., 2020). Some studies give hope that, for northern hemisphere countries, the growth rate should significantly decrease as a result of both warmer weather and lockdown policies (Notari et al., 2020). The weather factor is one of the factors that triggered the spread of Covid-19 (Tosepu et al., 2020). One study in Indonesia shows a strong correlation of covid-19 with weather (Tosepu et al., 2020). A study performed in Brazil suggest that case counts of COVID-19 could decline when the weather becomes warmer, in temperatures is above 25.8°C. (Prata et al., 2020). A chinese research study suggested that countries and regions with a lower temperature in the world adopt the strictest control measures to prevent future reversal (Wang et al., 2020). One study shows that the association between COVID-19 transmissibility and temperature might be complex in nature, which may be overlooked by a linear analytical framework (Ran et al., 2020).

Temperature and humidity showed negative associations with COVID-19. Countries and regions with low temperature and humidity should pay more attention (Qi et al., 2020). One study suggests the temperature variation and humidity may also be important factors affecting the COVID-19 mortality (Ma et al., 2020). Yao et al., 2020 has view that there is No association of COVID-19 transmission with temperature or UV radiation (Yao et al., 2020). Betacoronaviruses such as MERS-CoV and SARS-CoV are not thought to be seasonal (Sajadi et al., 2020). A Canada based study suggests that there is no significant association between ambient temperature and COVID-19 incidence (To et al., 2021). The virulence of coronavirus diseases due to viruses like SARS-CoV or MERS-CoV decreases in humid and hot weather. The putative temperature dependence of infectivity by the new coronavirus SARS-CoV-2 or covid-19 has a high predictive medical interest (Demongeot et al., 2020).

3. CLINICAL SYMPTOMS OF COVID-19:

Besides how COVID-19 is spread, dental practitioners need to be familiar with clinical symptoms. This can help them identify the suspected patients and decide what to do next include taking appropriate protecting measures, advising patients to go to fever clinics, taking emergency dental treatment in a negative pressure clinic and so on. The clinical symptoms of the COVID-19 are fever, dry, cough and fatigue. Some patients are accompanied by symptoms such as nasal congestion, runny nose, sore throat, myalgia and diarrhoea.

Mild patients only show low fever, mild fatigue without signs of pneumonia. Several patients often have dyspnea or hypoxemia, one week after the onset of the symptoms, and even develop acute respiratory distress syndrome, septic shocks, metabolic acidosis and multifunctional organ failure etc.

Severe acute respiratory syndrome corona virus-2 (SARS-Cov-2) is a strain of corona viruses that causes corona virus disease-2019 (COVID-19). In these days, the spread of the Sars-CoV-2 viruses through the air has become a controversial topic among scientists. Various organizations provide standard method for sampling and determination of viruses in air (Rohmani et al., 2020).

4. SYMPTOMATIC FEATURES OF COVID-19:

The main symptoms of Covid-19 include runny nose, sneezing, common cold, cough, confusion, myalgia, diarrhea, vomiting, shortness of breath, wheezing and fever (Nasar et al., 2018). Severe acute respiratory illness with

fever and respiratory symptoms, such as cough and shortness of breath, comprise the working case definition used to select people for viral testing (Vetter et al., 2020). One study analysed physiological and activity data from 32 individuals infected with COVID-19, identified from a cohort of nearly 5,300 participants, and found that 26 of them (81%) had alterations in their heart rate, number of daily steps or time asleep (Mishra et al., 2020). A similar research shows that daily smokers rate in patients with symptomatic COVID-19 is lower as compared to general population (Miyara et al., 2020).

5. CONCLUSION:

In the presence of this rapidly emerging, novel infection uncharacteristic of the era of modern medicine, identification of biomarkers that could predict disease severity and prognosis are essential to guiding clinical care. Uniquely to COVID-19, a wide range of variability in disease severity is observed ranging from asymptomatic to critical (WHO, 2020). Scientists and researchers are still working on possible knowledge about emergence and origination of corona virus. However, its zoonotic source to human has not been confirmed yet (Sherren et al., 2020).

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