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## Review Article

# A review on novel Coronavirus worldwide distribution and public health concerned

Noor Abady<sup>1</sup>, Ahmed Hamzah Mosa<sup>2</sup> and Hamed A. H. Al-jabory<sup>3</sup>

<sup>1</sup>Department of Microbiology, College of veterinary medicine, AL-Qasim Green University, Babylon, Iraq,

<sup>2,3</sup>Department of internal and Preventive Veterinary Medicine, College of veterinary medicine, AL-Qasim Green University, Babylon, Iraq.

\*Corresponding author: [ahmedvet@vet.uoqasim.edu.iq](mailto:ahmedvet@vet.uoqasim.edu.iq)

## Abstract

A new coronavirus, called SARS-CoV-2 with unclear background, in Hubei Province in the province of China spread in December 2019. The coronavirus-19 pandemic sickness induced by SARS-CoV-2 (COVID-19). Various symptoms showed the existence of COVID-19. Asymptomatic / minor symptoms, serious disease, and death. The viral virus has spread worldwide and WHO has issued an international public health emergency. Suspicious community have been divided and diagnostic/treatment protocols have been devised using clinical and epidemiological information from patients to promptly diagnose and control this highly contagious disease. The WHO invited hundreds of people early in the COVID-19 epidemic. Worldwide researchers to discover a quick diagnosis, treatment and vaccination, but not yet FDA have authorized special antiviral therapy or vaccination. COVID-19 is now run by antiviral medicines available for improvement of symptoms and supporting treatment includes oxygen in severe situations and for infected patients, mechanical ventilation is employed. But COVID-19 turn out to be a big problem for the medical community because of the global expansion of the virus. The number has risen to 8,708,008 and 461,715, according to the newest WHO figures, respectively. Because of the condition. To date, high-level death and financial harm to different populations are important for producing Successful 2019-nCoV infection medicines and vaccinations. This is why the virus features first and foremost, its infectious routes and pathogenicity must be thoroughly understood. This review therefore aims mainly at Provide a summary based on the current pandemic sickness.

**Keywords** COVID-19, Pandemic, Vaccine.

## Introduction

Novel coronavirus death warning (2019-nCoV) from China, City of Wuhan and is now proven in other nations quickly, globally and in many cases. COVID19 is a respiratory illness virus that starts and ends in lung cells, causing harm to the cilia, which is a hair-like protrusion (De Soto et al., 2020). When cells become infected, they color and shut down, leaving diseased tissue behind, which is why dry cough can occur. Another dangerous symptom is shortness of breath, exhaustion, and a cold. These symptoms might emerge anywhere from 4 to 24 days. Several instances were documented in Wuhan, China, patients with pneumonia. A new virus,, which was rebaptized by the WHO), subsequently altered its name to Severe SARS-CoV2 (Contini et al., 2020).

SARSCoV2 has a positive stranded coronavirus RNA virus, all of are in the family of Coronaviridae, and were reported in the 2012 Middle East Raising Syndrome (MERS-CoV) as a serious acute respiratory syndrome coronavirus (SARSCoV) and as a virus of the Middle East Respiratory Syndrome. Since the virus is spreading worldwide, on March 11, 2020, WHO publicly described the COVID-19 outbreak as a pandemic (Giwa & Desai, 2020).

## Coronavirus Comparison

The recently developed epidemic of COVID-19 can be equivalent in zoonotic transmission and clinical similarity (Hui et al., 2014), to the epidemic of SRS-CoV (2002–2003) in China and Middle East Respiratory Syndrome Coronavirus (2012) in Saudi Arabia. The phylogenetic test (Fig. 1) for the beta-coronavirus domain receptor-binding (RBD) lineages,

however, shows that 2019-nCoV is closely related to two SARS-like bat-derived coronaviruses (bat-SL-CoVZC-45 and bat-SL SL-CoVZXC21) with 88–89% resemblance to SARS-CoV and MERS-CoV. is accordingly 50% and 79% (Lai et al., 2020). Although substantial genetic variation exists between these 2019-nCoV and subgroups, RT-PCR and SARS or other beta-coronaviruses, cross-reactions occur if primers and antigenic epitopes are not properly selected (Nalla et al., 2020, Yan et al., 2020a). ACE2 is found largely in lung and gastrointestinal epithelial cells. High levels of ACE2 expression in tissues such as lung, gut, kidney etc can cause severe infection (Wan et al., 2020). The Swiss Model 33 program comprises of a core and an exterior subdomain, like RBD in other beta coronaviruses, of the three-dimensional structure of 2019-nCoV-RBD (Protein database ID: 2DD8) (Fig.1b-d). It is remarkable that 2019-nCoV equally employs ACE2 for entry into a host cell, because of resemblance between RBD's external subdomain in 2019-nCoV and SARS-CoV (Wan et al., 2020). Moreover, various RBD residuals for binding 2019-nCoV to the ACE2 Receptor such as Asn439, Asn501, Gln493, Gly485, were disclosed by the modelling investigations and Phe486 different from the SARS-CoV-RBD (Yan et al., 2020b).

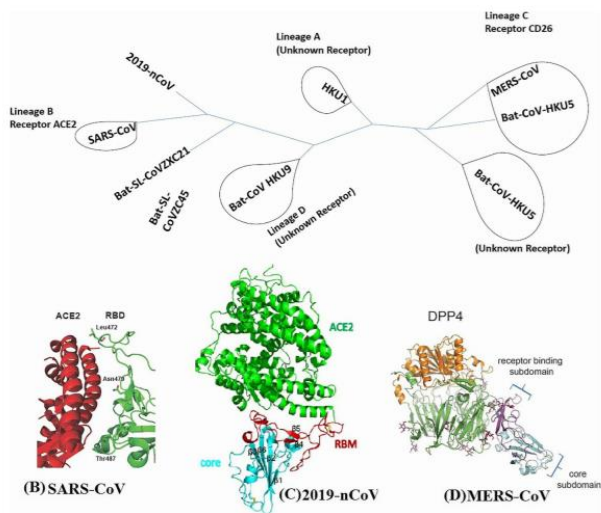


Fig. 1 The receptor-binding domain phylogenetic illustration (RBD) in several beta-corona viruses A. The SARS-CoV b, 2019-nCoV c, and MERS-CoV d structure of RBD, (Petrosillo et al., 2020).

### Major COVID-19 Manifestations

COVID-19 often occurs with fever, dry cough, and tiredness. Headache, dizziness, stomach discomfort, nausea and vomiting are less frequent symptoms. (Wang et al., 2020). With anosmia, dysgeusia, nausea, or diarrhea may occur in patients a few days prior to a fever (smell loss), distortion or loss of taste. Fever may be missing, but it is an important indication. Of the 191 patients in Wuhan, China, 94 percent developed fever on admission by January 2020. (Zhou et al., 2020). Note that only symptomatic hospitalized patients are typical of this statistics. A tiny number of patients who are hospitalized report dyspnea, headache, sore throat, congestion and hemoptysis might be generally asymptomatic, while

others may remain Six-eight. These symptoms are not exclusive to COVID-19 and overlap with other illnesses in viruses and bacteria.

### COVID-19's Impact on Other Organs

Besides lung diseases that may be linked to pneumonia, sepsis, or insufficient lung, there are discoveries showing that COVID-19 can impact other sections of the human being (Zaim et al., 2020). In individuals with COVID-19, displays several prevalent, unusual, and serious symptoms. 2019-nCoV infection, like other viral infections, can cause cardiac damage. A study of 400 individuals hospitalized in Wuhan, China, discovered that almost one-fifth of them Patients with COVID-19 had cardiac disease, which increased their death rate (Shi et al., 2020). Arrhythmias are caused by severe and abrupt swelling of the heart muscle, which inhibits the heart's capacity to properly pump blood (Zhu et al., 2020). As a result, patients with a record of cardiovascular disease and other metabolic disease such as high blood pressure are at a greater risk of mortality than healthy people. The element of oxygen Trauma to the lungs causes a deficit that affects the lining of the heart and blood vessels (Rizzo et al., 2020). Furthermore, fatty plaques in the coronary arteries of patients with or without cardiovascular disease may become unstable owing to heat and swelling, prominent to vascular blockage and cardiovascular issues (Abbasi and Boroumand, 2010). Other potential diseases found in hospitalized COVID-19 patients include venous thromboembolism and aberrant blood clotting, which need anticoagulants or thrombi prophylaxis for these patients (Kollias et al., 2020).

These settings, the release of numerous kinds of inflammatory cytokines might worsen these difficulties (Schett et al., 2020). As a result, cytokine inhibitors may be useful in lowering the severity of the condition. COVID-19 has been linked to CNS damage in several studies. Some noted symptoms include loss of smell, taste, or vision, as well as a decrease in responsiveness (Wu et al., 2020). Validated paraphrase stroke, Seizures and acute necrotizing hemorrhagic encephalopathy have also been documented in COVID-19-infected individuals (Wu et al., 2015). Neurological symptoms gradually reduce in individuals getting viral encephalitis therapy, according to therapeutic findings (Wu et al., 2020). Approximately half of COVID-19 patients have protein or blood in their urine, indicating early renal impairment (Larsen et al., 2020). It was observed that 15 to 30% of COVID-19 hospitalized patients in China and New York require renal therapies or dialysis (Cheng et al., 2020). However, the virus's direct attack on the kidneys is still being contested. The detection of a virus in fecal samples from some COVID-19 patients indicates that the virus may go into the human gastrointestinal tract. Approximately half of all patients have diarrhea vomiting, or other gastrointestinal problems. Some of these individuals also had acute viral hepatitis (Ding & Liang, 2020). Physicians associate COVID-19 with gastrointestinal diseases after acquiring fever and cough symptoms.

### Issue of Vaccination for COVID 19

Since the presence of novel coronavirus COVID-19, produced by the SARS-CoV-2 virus, this disease has proliferated rapidly around the world, the researcher has worked hard to create

therapeutic medicines. COVID-19 rushed because of the possible pandemic danger Scientists, clinicians, R&D Institutions understand the pathophysiology and the novel virus in this disease, so that suitable therapy regimes and successful vaccinations are discovered. And CAS presented an overview of scientific knowledge published in the CAS Content Collection to help existing research and development. (Stawicki et al., 2020). Highlights antiviral techniques including small chemicals and biology that target complicated molecular interaction related to the infection and recurrence of coronaviruses. The reuse effort reported here concentrates on elements known to work against other RNA viruses, notably SARS-CoV and MERS-CoV (Ganesh et al., 2021). It contains a patent biological analysis (Liu et al., 2020). The four biological approaches with the ability to cure and prevent infection by coronavirus, which can apply to COVID-19 have been found in more than 500 patents. The information in this report provides a strong intellectual basis for the continuous advancement of medicinal vehicles and vaccines (Liu et al., 2020).

#### How to avoid COVID19

Multiple steps were recommended by CDC to ensure no transmission and limit risk of SARS-CoV-2. Advising everyone should frequently hand washing lasting at least 20 seconds by using soap and water as well as sanitizers with at least 60% alcohol can also be used as an alternative this was the important announcement from the healthy service at that time (Ramphul and Mejias, 2020). Clinicians has also been asked to no touching of mucosal surfaces with hands that have not been washed (Rai et al., 2020). Seeking appropriate medical help if anyone have symptoms of the virus. So should also limit their exposure to other unaffected people and cover up their noses and mouths after coughing. Facemask should be warned anywhere they are going if they present with symptoms. Frequent disinfection and cleaning are advised for groups that are at risk of contracting the virus (Clark et al.).

#### Conclusions

2019-nCoV is found in COVID-19 individuals in their breathing, fecal and blood samples. The major transmission route is nevertheless through inhaling respiratory droplets or contact with infected fomites because the surface continuity of the virus. While various therapies have been suggested, no particular solutions presently exist for treating COVID-19 or avoiding 2019-nCoV infection. Like influenza, COVID-19 will decline with warm weather in summer and a gradual cooling of the air is likely to commence with the infection for 2019-nCoV in autumn. Sad to say, the question of the resistance or vulnerability of humans enhanced with COVID-19 to this second infection is not yet attainable. As a result of the huge number of deaths and economic damage to many communities thus far, there is a significant effort underway to develop feasible 2019-nCoV treatments and vaccines. In the absence of immunizations and antivirals, the most important method for managing sickness among the public is regular hand washing, the use of disinfectants, and the avoidance of face and mouth contact following contact with a contaminated environment.

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