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Perspective

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Severe Acute Respiratory Syndrome Affected by COVID-19

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Introduction

Since the outbreak of the 2019 novel coronavirus (2019-nCoV) in Wuhan, China, in December 2019, it has spread fast throughout China and many other nations. 2019-nCoV has now infected over 43 000 people in 28 countries/regions, making it a major worldwide health risk. Furthermore, in one study, 41 percent of patients were suspected of being infected with SARS-CoV-2 as a result of hospitalisation. Based on evidence of an increase in the number of infections and the probability of infection transmission by asymptomatic carriers. SARS-CoV-2 can be transferred easily between humans and has a high risk of becoming a pandemic.

Adenovirus, coronavirus 229E/NL63/OC43, human bocavirus, human metapneumovirus, parainfluenza virus 1/2/3, rhinovirus, and respiratory syncytial virus A/B have all been described as pathogens causing pneumonia. Furthermore, in the situation of community-acquired bacterial pneumonia, these viruses can cause co-infection. SARS-CoV-2 was discovered to be a single-stranded, positive-sense RNA virus belonging to the Betacoronavirus genus. SARS-CoV-2 is closely linked to two bat-derived SARS-like coronaviruses, bat-SL-CoVZC45 and bat-SL-CoVZXC21, according to phylogenetic research, but it is further distant from SARS-CoV (79 percent similarity) and Middle East respiratory syndrome coronavirus. With 98.7% nucleotide similarity to the partial RNA-dependent RNA polymerase (RdRp) gene of the bat coronavirus strain, phylogenetic study shows that SARS-CoV-2 is similar to the coronavirus circulating in Rhinolophus (horseshoe bats).

In children, an uncommon complication known as multisystem inflammatory syndrome in children (MIS-C) has been identified; this may be associated to COVID-19 [1]. Fever, stomach pain, and a rash are symptoms that are comparable to Kawasaki illness, an uncommon ailment. In young and middle-aged adults, a similar consequence has been documented (multisystem inflammatory syndrome in adults). It is well known that immunity to other coronaviruses is very transient. The COVID-19 pandemic hasn't been around long enough for experts to know how long people will be immune after contracting the virus. However, a small number of instances have recently been described in which persons who had recovered from COVID-19 fell ill again after contracting a genetically different strain of SARS-CoV-2. Given the tens of millions of people who have had COVID-19, this re-infection appears to be incredibly unlikely, but researchers are unsure what will happen over time.

COVID-19 is caused by a novel beta coronavirus known as SARS Coronavirus-2 (Severe Acute Respiratory Syndrome Coronavirus-2) (SARS-CoV-2). High rates of transmission, mild to moderate phenotypic clinical symptoms, and severe clinical, radiologic, and pathologic abnormalities in the elderly are all clinical features of OVID-19. Although research into the disease's prospective impact on other tissues is now underway, it mostly affects the respiratory tract. Coronaviruses are a broad and diversified genus of enclosed viruses with genetic material that is positive-sense single-stranded RNA. These viruses cause a variety of respiratory disorders in humans and other mammals, including the common cold [2].

COVID-19 enters and spreads through the respiratory tract by using the angiotensin-converting enzyme 2 (ACE2) receptor, which is the same receptor exploited by its precursor, SARS-CoV. Fever, cough, and exhaustion are common COVID-19 symptoms, while SARS-CoV-2 can induce numerous neurological symptoms in a limited number of individuals. Severe forms of neurological malaise include acute cerebrovascular illness and meningitis/encephalitis. Although there is evidence that coronaviruses can infect the central nervous system (CNS), further research is needed to address SARS-CNS CoV-2's invasion and comprehend the virus's underlying neurotropic processes.

References

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