

An update on novel COVID-19 pandemic: a battle between humans and virus

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Abstract. – In the 21st century, human civilization has witnessed three major epidemics caused by Coronaviruses namely severe acute respiratory syndrome coronavirus (SARS CoV) in 2003, Middle East respiratory syndrome coronavirus (MERS CoV) in 2012 and 2019 novel coronavirus (2019 nCoV) or coronavirus disease (COVID 19) in 2019. Among these, COVID-19 has greater transmission and mortality rate. 2019 nCoV belongs to a large family of positive sense single-stranded RNA viruses (+ssRNA) that can be isolated in different animal species. The most communal symptoms of COVID-19 include fever, cough, and shortness of breath during the incubation period (2-14 days) of infection. COVID-19 transmission is occurring from infected humans to close contact with one another through respiratory droplets, coughs, and sneezes of infected person. Moreover, the virus containing surfaces may also transmit the infection. Diagnosis is being carried out by collecting a nasopharyngeal swab or sputum specimen for detection of SARS-CoV-2 RNA by reverse-transcription polymerase chain reaction (RT-PCR). Rapid diagnosing methods are also under development which can diagnose COVID 19 in few minutes to hours. Currently, there is no specific cure or preventive therapeutics available. Hence, based upon limited in-vitro and anecdotal data, Chloroquine, or Hydroxychloroquine, Remdesivir, Lopinavir and Ritonavir are being employed in the management. Search for new specific anti-viral drugs from natural/synthetic origins is under full swing and many of them are currently used as chemotherapeutic drugs under clinical investigation. Yet, there is a strong need for development of vaccine, which may take several months to few years for the development

Key Words:

Coronavirus, Virus, COVID-19, Novel, nCov, Vaccine, Chloroquine.

Introduction

Epidemic outbreak of a viral disease is a curse for human civilization and represents a serious issue to public health. In the last two decades, several viral diseases have been reported such as the Ebola, Swine flu, Bird flu, Hanta virus, H1N1 influenza and severe acute respiratory syndrome coronavirus (SARS-CoV) ¹. Among all viral outbreaks, epidemic of SARS-CoV has been more severe and shown to have high transmission rate. SARS is a zoonotic disease caused by SARS-CoV², first emerged in China in 2002 and later it was reported in other parts of the world in 2003 and affected 8,908 people with 9.6% fatality rate. Similarly to new COVID-19, the nosocomial transmission of SARS-CoV was related with travel history. The primary reservoir is also suspected through bats, although unproven and more intermediary source also suggested transmission via civet cats in the wet markets in Guangdong³. MERS (Middle East respiratory syndrome), a novel lethal zoonotic disease of humans caused by another member of corona virus family i.e. MERS-CoV. Humans are thought to acquire MERS-CoV infection through contact with camels or camel products with a fatality rate of 35% while nosocomial transmission is also a hallmark ⁴. In late 2019, the recent outbreak of a novel human coronavirus (beta-coronavirus) that is now termed as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 or HCoV19 or COVID-19) has reported in Wuhan, China, which announced as a pandemic by World Health Organization (WHO) ⁵. On December 2019, WHO office of China perceived 29 cases of pneumonia like disease in Wuhan, however they unable to identify the causative agent, and classified it as “pneumo-