Biological and Clinical Features of COVID-19

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DESCRIPTION

Immunity may be a natural defense mechanism of the body. Therefore it must be very strong and active during a balanced manner. For an immunocompromised individual and elderly people, the chances of being attacked by pathogens are very high and the probability of survival is very low due to their poor immunity. Both inborn and acquired immunity play a big role within the immune reaction toward the invaded external factors. So, so as to spice up the system for its timely action, immunomodulators are really important. Many other studies have already proven that immunomodulatory cytokines can be effectively used against various disease conditions. Hence, as a preventive measure or treatment strategy, implementation of immunomodulators like oral low dose cytokines will be very effective in tackling the severity caused by viral pathogens. Therefore, in the current scenario of COVID-19, oral low dose cytokines might be a potential therapeutic agent.

BIOLOGICAL AND CLINICAL FEATURES

The SARS-CoV-2 features a certain degree of homology with SARS-CoV and MERS-CoV. Compared to the previous SARS and MERS outbreaks, we found that COVID-19 features a few similarities with reference to the infection source and clinical symptoms, but it also some differences. For example, COVID-19 shares some routes of transmission in common with SARS and MERS, like respiratory droplets, but COVID-19 also can be transmitted by the fecal-oral route. It is important to think about all transmission routes when seeking to regulate the epidemic and protect medical staff and therefore the general public. The epidemiological research on the source of infection and the route of transmission could help prevent the further spread of the epidemic [1]. Different clinical symptoms might be used for the medical diagnosis of patients infected by coronaviruses. The medicines or therapeutic regimens that proved to be effective for SARS or MERS offer new approaches to the clinical treatment of COVID-19, which is important within the prevention and control of the COVID-19 epidemic. The Chinese government's control strategies in Wuhan and therefore the active cooperation of the people have substantially contributed to China's efforts to regulate the outbreak, which is vital to the global efforts to combat the epidemic. Testing medications that have been shown to have antiviral effects against SARS-CoV or MERS-CoV may accelerate the pace of drug development in this emergency situation. COVID-19 poses a big burden on the healthcare system everywhere the planet. A complete understanding of the characteristics of the disease is important for effective surveillance and public health response measures to be implemented in a timely manner [2]. Currently, although we've some basic understanding of the clinical and epidemiological features of COVID-19 patients, our knowledge is insufficient. This is because inconsistencies still exist in the findings of many published reports, and the sample sizes in most of these reports were too small for a reliable summary to be made. In this work, a systematic review and pooled analysis was performed to combine data from 69 previous reports, in order to yield a more accurate summary of the clinical and epidemiological characteristics of COVID-19 patients [3].

In many instances, susceptibility to viral infections may be related to factors such as gender and smoking habits. For the former, it is believed that X chromosome inactivation in females may cause cellular mosaicism which ensures the presence of at least one functional copy of X-linked immune genes, thus conferring women an increased resistance against viral infections. In addition, estrogen, the major female sex hormone, is known to promote adaptive immune response, while testosterone, the primary sex hormone in men, could contribute to the suppression of the innate immune response, rendering men more susceptible to viral infections [4]. On the other hand, cigarette smoking may reduce the level of circulating immunoglobulins, immune cells, and pro-inflammatory cytokines, as well as disrupt the response of antibodies to antigens. For these reasons, some studies have suggested that men and smokers are more susceptible to SARS-CoV-2 infections. In the present work, we noted that the ratios of male to female and smokers to non-smokers were close to 1:1. Although the relative risk or odds ratio of the association between these variables and SARS-CoV-2 infection couldn't be computed thanks to the shortage of a comparison group, a proportion of roughly 1:1 suggests that susceptibility to SARS-CoV-2 infection is universal.

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