LETTER TO THE EDITOR

Long COVID manifestations in HIV-positive patients

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Dear Editor,

Since December 2019, the coronavirus disease (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has spread rapidly in the world and caused irreversible damage in various fields, such as health, economy, and other matters of human societies. By the end of 2021, about 38.4 million people in the world were infected with human immunodeficiency virus (HIV). Acquired immunodeficiency syndrome (AIDS) and its challenges are still strong and prevailing with the emergence of the COVID-19 pandemic [1].

COVID-19 can affect people living with HIV (PLWH) in numerous ways, including the increased risk of COVID-19 infection and interruptions in HIV treatment and care. The COVID-19 pandemic has had an unprecedented negative impact on HIV treatment around the world [2].

Several studies have been conducted on the infection of COVID-19 among PLWH. The results show that there is no difference in general clinical manifestations, including fever, cough, and shortness of breath compared with HIV-negative people [3]. In PLWH who are also infected with COVID-19, symptoms, such as fever and cough are more severe, they experience a prolonged duration of fever as well as delayed improvement in lung computed tomography (CT) scan findings [4]. It is also evident that there is a lower level of IgG antibody against SARS-CoV-2, which is due to the low level of CD4+ lymphocytes in HIV/AIDS. It should be noted that people living with HIV/AIDS are not necessarily more susceptible to COVID-19, but in case of infection, they face a more severe form of the disease, which is associated with high mortality. The risk factors of COVID-19 infection, such as old age and underlying diseases, are similar to those in people without HIV [5].

The prevalence of long COVID is higher in people living with HIV compared with HIV-negative individuals. Long COVID is a condition, in which symptoms persist for weeks, months, or even years after recovery from COVID-19. Indications, such as chronic pain, shortness of breath, chest pain, and severe fatigue, can be debilitating [6].

It should be noted that the relationship between COVID-19 and HIV is not linear, and may be influenced by various underlying diseases, the patient's lifestyle, and social factors determining health. The relationship between these two is still controversial, and there are contradictory results regarding the vulnerability and severity of the consequences [7]. More research is needed to understand the interaction between the two viruses taking into account factors, such as disease stage, CD4+ count, and antiretroviral therapy.

According to the guidelines of the Centers for Disease Control and Prevention (CDC), it is recommended to carry out the vaccination of PLWH as well as others, although the vaccine's immunogenicity is lower in HIV-positive people and requires more efforts by researchers to develop more specific vaccines [8]. The vaccination in HIV-infected individuals is imperative due to the defect in the immune system. Their body are not able to completely eliminate SARS-CoV-2, which may lead to the emergence of new variants of the virus in the future [9].

In low-income and middle-income countries, the distribution of COVID-19 vaccines among people infected with HIV is limited. Two-thirds of HIV-infected individuals are living in Africa, and only 15% of the 1.3 billion people living

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in that continent have been fully vaccinated. The only way to access vaccination is the participation and cooperation of other countries in the distribution of vaccines. Studies show that people infected with HIV, who have not been vaccinated against COVID-19 are four times more likely to experience symptoms of long COVID than those, who are HIV-negative [10].

Due to the successive quarantines of communities, a great deal of psychological burden has been imposed on these patients. It is suggested that behavioral health centers continue intense communication and counseling with these people, ensuring they receive medicines and vaccines. Although different studies have been conducted on the outcomes of COVID-19 among patients living with HIV compared with HIV-negative individuals, studies with larger number of patients and in different countries are still needed in order to obtain and recommend new information for the proper management of the disease.

To prevent the long COVID severe manifestations in HIV-positive patients, the following is proposed:

1. Equitable COVID-19 vaccine distribution.
2. Improving access to care for PLWH.
3. Improving lifestyle of HIV-infected people.
4. Using vitamins and supplements to regulate PLWH immune systems.

Disclosures

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