

Editorial on COVID-19: Therapeutic Prevention

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Received: November 25, 2020, **Accepted:** November 26, 2020, **Published:** November 30, 2020

Editorial

From the beginning spread of SARS-CoV-2, as it became a pandemic, the number of cases had been continuously growing worldwide. Numerous recommendations and suggestions have been published to prevent the acquisition and spread of the virus, especially to protect health workers and front-line caregivers along with their families. After a remarkable scientific research also, as of now there are no approved specific antiviral agents for COVID19 disease caused by SARS-CoV-2.

SARS-CoV-2 is transmitted by aerosol, rendering air defense with suitable ventilation and adequate mask use would be pivotal. There is a high demand for a simple, inexpensive, and effective method that will be able to prevent or significantly reduce the SARS-CoV-2 affecting humans. If proven effective, locally applied antiviral agents such as PVP-I, selected mouthwashes, nanoparticles sprays blocking the ACE2 receptors, or chemical modulators of the nasal and nasopharynx epithelia could be used by health care workers exposed to COVID-19 patients, their family members, school teachers, office workers who are in contact with a high number of clients, flight passengers, and cabin crews, as well as others working in potentially highly contaminated environments such as COVID-19 isolation/quarantine centers. It is very crucial for development of therapeutic and preventive strategies requires an accurate understanding of the role that spike and other proteins that play a major role in the SARS-CoV-2 infection process and progression of COVID-19.

As cross-species zoonotic transmission of SARS-CoV-2 has caused severe pathogenicity and led to more fatalities worldwide. Outbursts of this virus underlined the importance of controlling infectious pathogens across the Globe. Unfortunately, there is currently no clinically approved antiviral drug or vaccine against SARS-CoV-2, although several time-being antiviral drugs targeting multiple RNA viruses have shown a positive response and improved recovery rate in patients.

Presently, the results of in vitro and in vivo data from various scientific studies, which have broadened our knowledge of potential drug candidates for the successful prevention and also the treatment of patients infected with this virus and discuss possible virus and host-based treatment options against SARS-CoV-2. Well-designed and controlled clinical trials are needed,

both for existing therapies and for future prospective direct as well as indirect therapies.

After several clinical trials, it showed convalescent plasma (CP) therapy was well tolerated and could potentially improve the clinical outcomes through neutralizing the viral effect in severe COVID-19 cases. The optimal dose and time point, as well as the clinical benefit of CP therapy, needs further investigation in larger well-controlled trials.

Until now many of the viruses that have resulted for the pandemic situations have hampered development of corona virus specific therapeutics. But, the emergence of severe acute respiratory syndrome coronavirus (SARS-CoV-2) has prompted the discovery of therapeutics including viral specific drugs. Further studies in animal models demonstrated the efficacy of SARS-CoV-2 specific monoclonal antibodies against SARS-CoV-2. Furthermore, several antiviral drugs have shown to be effective against other viruses were tested in vitro. Because of availability and shown efficacy, the use of interferons and other therapeutic drugs may be considered to fight against SARS-CoV-2 or a related coronavirus. The more recent design of wide-spectrum inhibitors targeting the coronavirus main proteases may lead to the discovery of new antivirals against multiple coronavirus induced diseases.

In conclusion, the main therapies being used to treat the disease are antiviral drugs (Ex: chloroquine/hydroxychloroquine) and respiratory therapy. Even though many therapies have been proposed, quarantine is the only intervention that appears to be effective in decreasing the contagion rate. There is a need of specifically designed randomized clinical trials to determine the most appropriate treatment for this coronavirus.

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Citation: Leiferman J (2020) Editorial on COVID-19: Therapeutic Prevention. J Prev Med Vol. 5 Iss No. 5: e05