The reality and challenges for the treatment options of COVID-19

Surya Pratap Singh
BBAU (A Central University) Lucknow, (U.P.) India.

Abstract

The outbreak related to the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first reported in Wuhan city of China in December 2019. It is an extremely high potential for dissemination resulted in the global COVID-19; coronavirus disease 2019 pandemic in 2020. Despite the worsening trends of COVID-19, no drugs are validated to have significant efficacy in clinical treatment of COVID-19 patients in large-scale studies. The drug Remdesivir is considered as the most promising antiviral agent; it works by inhibiting the activity of the RNA-dependent RNA polymerase (RdRp). A large-scale study investigating the clinical efficacy of the drug remdesivir (200 mg on day 1, followed by 100 mg once daily) is on-going. The other excellent anti-influenza RdRp inhibitor drug favipiravir is also being clinically evaluated for its efficacy in coronavirus disease 2019 (COVID-19) patients. The protease inhibitor lopinavir/ritonavir (LPV/RTV) alone is not shown to provide better antiviral efficacy than standard care. However, the regimen of LPV/RTV plus ribavirin was also shown to be effective against SARS-CoV in vitro. The another promising alternative is hydroxychloroquine (200 mg thrice daily) plus azithromycin (500 mg on day 1, followed by 250 mg once daily on day 2-5), which showed excellent clinical efficacy on Chinese COVID-19 patients and anti-SARS-CoV-2 potency in vitro. The roles of the drug teicoplanin (which inhibits the viral genome exposure in cytoplasm) and the monoclonal and polyclonal antibodies in the treatment of SARS-CoV-2 are under investigation. So avoiding the prescription of non-steroidal anti-inflammatory drugs, angiotensin converting enzyme inhibitors, or angiotensin II type I receptor blockers is advised for COVID-19 patients.

Keywords: Coronavirus disease 2019 (COVID-19); Angiotensin converting enzyme inhibitors; Non-steroidal anti-inflammatory drugs; Hydroxychloroquine; Remdesivir; Favipiravir; RNA-dependent RNA polymerase (RdRp); Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).