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LETTER TO THE EDITOR

Remdesivir versus ritonavir/lopinavir in COVID-19 patients

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To the Editor:

The new coronavirus SARS-CoV-2 is responsible for the current global pandemic COVID-19. To date, data indicate 1.11 million deaths. [1] Several vaccines and monoclonal antibodies to SARS-CoV-2 are in clinical trials. In the meantime, several studies have been conducted to test the risk factors COVID-19 and drugs with antiviral efficacy against SARS-CoV-2. [2] The trials have attributed some efficacy to the antivirals Remdesivir and Ritonavir/lopinavir. However, recent literature evidence shows some differences between the two antiviral treatments. Remdesivir is a drug of the nucleotide analogues family, with antiviral activity against several RNA viruses, and is considered a potential antiviral agent against SARS-CoV-2. Lopinavir is an inhibitor of HIV-1 protease, which is in combination with ritonavir to increase its plasma half-life time. Lopinavir is associated with an in vitro inhibitory activity against SARS-CoV and SARS-CoV-2. [3] In these months, several epidemiological studies have been carried out to evaluate the antiviral efficacy of the above mentioned drugs. Recent evidence associates Remdesivir's significant clinical improvements in COVID-19 positive patients hospitalized, leading to a reduction in mortality and a decrease in recovery time. [4] Recent evidence suggests that Ritonavir/lopinavir is not an effective treatment for severe and hospitalized COVID-19 patients, excluding any benefit on the probability of mortality from COVID-19 and length of hospital stay, highlighting discrepancies between reported in vitro and in vivo results. Probably further studies are necessary to understand the most effective dose, also considering the safety profile of the drug, in the treatment of COVID-19 viral infection. However, the existing EBM shows that today the drug with the most effective antiviral SARS-CoV-2 and improving clinical parameters is Remdesivir. However, we believe that further epidemiological studies are needed to clarify the optimal dose to be used in severe COVID-19 patients, and possible dose modifications to be made to avoid drug-drug interaction, and drug-pathology, considering that the COVID-19 patient is a complex patient. [5] Epidemiological studies associate Remdesivir with the gold standard of SARS-CoV-2 antiviral therapy, demonstrating some efficacy, and with Ritonavir/lopinavir association, there are no results of SARS-CoV-2 antiviral efficacy. However, further studies are needed to provide further data on these COVID-19 treatments.

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Compliance with ethical standards

There are no sensitive data and no patients were recruited for this study

Conflict of interest The authors declare that they have no conflict of interest.

Copyright The authors certify that the manuscript is original, never submitted to other journal for publication before. All authors contributed equally to the manuscript and had the opportunity to revise and approve the final text. The authors accept the full TRANSFER OF COPYRIGHT to the journal.

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