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Case report study of the first five COVID-19 patients treated with remdesivir in France

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Abstract

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been identified as the virus responsible for the coronavirus disease 2019 (COVID-19) outbreak worldwide. Data on treatment are scare and parallels have been made between SARS-CoV-2 and other coronaviruses. Remdesivir is a broad-spectrum antiviral with efficient in vitro activity against SARS-CoV-2. Evidence of clinical improvement in patients with severe COVID-19 treated with remdesivir is controversial. The aim of this study was to describe the clinical outcomes and virological monitoring of the first five COVID-19 patients admitted to the intensive care unit of Bichat-Claude Bernard University Hospital, Paris, France, for severe pneumonia related to SARS-CoV-2 and treated with remdesivir. Quantitative reverse transcription PCR was used to monitor SARS-CoV-2 in blood plasma and the lower and upper respiratory tract. Among the five patients treated, two needed mechanical ventilation and one needed high-flow cannula oxygen. A significant decrease in SARS-CoV-2 viral load in the upper respiratory tract was observed in most cases, but two patients died with active SARS-CoV-2 replication in the lower respiratory tract. Plasma samples were positive for SARS-CoV-2 in only one patient. Remdesivir was interrupted before the initialy planned duration in four patients, two because of alanine aminotransferase elevations (3 to 5 normal range) and two because of renal failure requiring renal replacement. This case series of five COVID-19 patients requiring intensive care unit treatment for respiratory distress and treated with remdesivir, highlights the complexity of remdesivir use in such critically ill patients.

Keywords: Antiviral therapy; Case reports; Remdesivir; SARS-CoV-2 viral load; Viral pneumonia.