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Remdesivir and bradycardia in covid-19 patients: review of literature and meta-analysis**Prithi Choday, Umeh Chukwuemeka, Sabina Kumar, Sumanta Chaudhuri, Pranav Barve***Hemet Global Medical Center, USA*

Introduction: As of December 2021, there have been over 259 million cases of SARS-CoV-2 which has resulted in 5.17 million deaths worldwide. Thus, there has been a dire need to develop therapies to treat and tackle the novel SARS-CoV-2. Antiviral agents, such as remdesivir, shows some of the most promising results for helping reduce the morbidity and healthcare burden of COVID-19 in today's society. However, Remdesivir is a relatively new antiviral drug, with scarce data regarding its adverse effects and safety profile. There has been an increasing number of case reports and qualitative studies that have reported a relationship between Remdesivir and bradycardia.

Methods: A meta-analysis was designed according to the guidelines included in the PRISMA statement with the hypothesis that remdesivir use in COVID-19 patients was associated with bradycardia. Articles were obtained by doing a PubMed database and google scholar search with words that included: bradycardia, remdesivir, and bradyarrhythmia. All abstracts after our literature search were independently reviewed by two researchers to assess if they met the inclusion and exclusion criteria to be included in the study. A qualitative data analysis was conducted by combining the outcome of interest, bradycardia, in patients that received remdesivir and those that did not, as well as a relative risk assessment and 95% confidence interval for each study. In addition, a sensitive analysis was completed with the studies that we found.

Results: The pooled estimate of the effect of remdesivir on bradycardia in COVID-19 patients compared to patients who did not receive remdesivir in 4 studies with 13,755 patients showed that remdesivir led to increased bradycardia in COVID-19 patients (OR 2.64, 95% CI 1.56 – 4.47, $p < 0.001$).

Conclusion: Our study showed that the use of remdesivir was associated with bradycardia in COVID-19 patients. However, the study is limited by the small number of studies included in the review. Therefore, it is imperative that the international community reports on the adverse side effect of bradycardia with remdesivir so clinicians are more aware of the side effect?

Biography

Prithi Choday is currently a 2nd year internal medicine resident at Hemet Global Medical Center in Southern California. She is interested in starting a gastroenterology fellowship in the fall of 2023. She has a passion for global health and research. He is the director of research and outpatient clinic at KPC Global and assistant program director of the residency program at Hemet Global Medical Center. He went to residency at Yale University and has his MPH from John's Hopkins. His interest includes: cardiovascular disease, women's health, pulmonary fibrosis, and pancreatic cancer