



Demerits of Remdesivir: An Unseen Trouble

Sundus Nasim¹, Sohail Kumar², Dua Azim³, Areej Haider Hashmi⁴, Muhammad Taha Nasim⁵

¹Undergraduate Student (MBBS), Dow University of Health Sciences, Karachi, Sindh State, Pakistan; ²Undergraduate Student (MBBS), Dow University of Health Sciences, Karachi, Sindh State, Pakistan; ³Undergraduate Student (MBBS), Dow University of Health Sciences, Karachi, Sindh State, Pakistan; ⁴Undergraduate Student, Bachelor of Arts (BA) in Global Public Health, University of Virginia College of Arts and Sciences, USA; ⁵A-levels Student, Karachi Grammar School (College Section), Karachi, Sindh State, Pakistan

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Abstract

Remdesivir is an investigational antiviral agent available for COVID-19 therapy. Even though its efficacy has been proven through various clinical trials, the evidence is still scarce. The side effects of remdesivir are highlighted in this paper and should be kept in mind during its use. Moreover, the availability of this drug is limited, and we fear an impending shortage of the said medicine in the near future. Thus through this letter we hope to increase awareness regarding this potentially lifesaving medicine. [*Bangladesh Journal of Infectious Diseases, October 2020;7(suppl_2):S67-S68*]

Keywords: Antiviral; remdesivir; COVID-19; drug; pandemic

Correspondence: Sundus Nasim, Undergraduate Student (MBBS), B-255, Block N, North Nazimabad, Karachi, Pakistan.

Email: sundusnasim9@gmail.com, contact number: +923412505475.

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Introduction

The coronavirus disease (COVID-19) is a highly contagious respiratory illness caused by severe acute respiratory coronavirus 2 (SARS-CoV-2). The havoc caused by this disease led to it being identified by the World Health Organization (WHO) as a public health emergency of global concern on January 30, 2020 and later as a pandemic on March 11, 2020. Following the surge

in the rate of casualties, various clinical trials were initiated to explore potential treatment strategies. Our interest was piqued upon reading an article by Khan TM, in which preventive and control measures against SARS-CoV-2 are comprehensively described¹. However, this article did not stress upon the potential therapies and consequences of their use against COVID-19. Thus, through this letter, we aim to highlight the recent

concerns surrounding one of the antiviral drugs, remdesivir.

Remdesivir Drug

Remdesivir, an RdRp inhibitor, is a broad-spectrum antiviral agent originally synthesized by the Gilead Sciences to treat Ebola virus². Encouraged by the promising role of remdesivir in combatting Ebola, compassionate use of intravenous remdesivir for treatment of COVID-19 patients was initiated in the United States. Favorable treatment results led people to believe that this drug has the potential to eradicate the virus¹.

Different Clinical Trials

However, clinical trials regarding the use of remdesivir in COVID-19 seem to be rather inconclusive. In a cohort of hospitalized patients with severe COVID-19, compassionate use of remdesivir resulted in clinical improvement in 68% of the patients³. Nevertheless, robust trials are required to establish a definitive view regarding its clinical efficacy, as mentioned by Ko et al². It is also imperative to mention that the use of remdesivir is limited due to a multitude of side effects. These include rashes, diarrhea, elevated liver enzymes, and hypotension. Furthermore, the adverse effects were found to be more common in patients on mechanical ventilation. Septic shock, multiple organ dysfunction, and premature renal failure with elevated transaminases were also observed⁴.

Demerits of Remdesivir

Following remdesivir's Emergency Use Authorization (EUA) by the Food and Drug Administration (FDA) in the United States, a new concern arose regarding its limited availability and distribution disparity. Evidence from Mumbai, India also reported widespread shortage of remdesivir and tocilizumab earlier this month⁵. In addition, Pakistan, a resource-restricted country, is already facing acute scarcity of COVID medicines including tocilizumab, dexamethasone, and even multivitamins. This has led to Pakistani government officials expressing concerns regarding the hoarding of medicines during the pandemic⁶. This raises suspicions that Pakistan may face a similar dilemma in terms of remdesivir in the upcoming months.

Another major concern regarding the reduced availability of novel treatment options is racial disparity when providing these medicines to the

general public. Sarpatwari et al⁷ hypothesize that the availability of remdesivir could be difficult for certain populations, including Blacks and Hispanics, which comprise of nearly half of the hospitalized COVID-19 patients. Such disparities could give rise to widespread resentment among minorities throughout various low-income countries that are notorious for prior occurrence of such incidences.

This warrants the need for a transparent distribution system. We suggest that the distribution of remdesivir should be based on infection statistics from varied regions. Considering the changing dynamics of the outbreak, this strategy should also be modifiable. No discrimination concerning age or ethnicity should be tolerated to enable a transparent outcome. The strategy should be designed to avoid a rapid influx of patients at facilities recognized or believed to have access to the drug.

Conclusion

In conclusion, this broad-spectrum antiviral agent may be a solution to tackle this ongoing SARS-CoV-2 pandemic. However, following its increased demand, we fear that the disparity between need and supply will intensify. While we advise clinicians to proceed with caution when using this drug, we would also like to emphasize the need for a well-structured plan to ensure sufficient supply in order to avoid any future challenges.

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