UPDATE ALERTS

Update Alert: Remdesivir for Adults With COVID-19

This is the third update for our living rapid review on remdesivir for adults with COVID-19 (1). Our first update, which included studies published through 7 December 2020, led to a major update (**Supplement Figure 1**) (2). Our second update found no new evidence (3). This third quarterly update, done using the same search strategies as the original review (1), identified 707 citations between 9 February and 10 May 2021. One new randomized controlled trial was eligible for inclusion (**Supplement Figure 2**) (4).

The last major update included 5 trials for any disease severity. On the basis of the results of 4 trials, a 10-day course of remdesivir probably results in little to no difference in mortality but probably reduces serious adverse events and may reduce time to recovery in hospitalized patients (5–8). Two trials found that a 10-day course was not more effective than a 5-day course for moderate and severe disease (5, 9). One trial with low risk of bias (5) found that a 5-day course of remdesivir may result in a small mortality reduction in moderate disease.

In this update, one small randomized controlled trial with high risk of bias (n = 82) (4) (**Supplement Table 1**) involving adults hospitalized with severe COVID-19 found that remdesivir for 5 days, compared with standard of care, in a per protocol analysis, resulted in a numerically higher, but not statistically significant different, mortality at days 12 through 24 (14.7% [5 of 34] vs. 8.3% [3 of 36]; absolute risk difference, 6.4% [95% CI, −8.6% to 21.3%]) and subsequent need for invasive ventilation between days 12 and 24 (11.8% [4 of 34] vs. 5.6% [2 of 36]; absolute risk difference, 6.2% [CI, −7.0% to 19.4%]). There were no differences in frequency of nausea or vomiting, elevated liver enzymes, or creatinine level. Patients in the remdesivir and standard-of-care groups had an "equal time to recovery between 10 and 20 days" (no numerical data reported). Our analyses of all randomized patients provided similar mortality results.

Given the study's high risk of bias, our original conclusions about certainty and strength of evidence of remdesivir for adults with COVID-19 remain unchanged (**Supplement Tables 2** and **3**).

Anjum S. Kaka, MD
Timothy J. Wilt, MD, MPH
Minneapolis VA Health Care System and University of Minnesota School of Medicine, Minneapolis, Minnesota

Roderick MacDonald, MS
Eric J. Linskens, BS
Minneapolis VA Health Care System, Minneapolis, Minnesota

Disclaimer: The materials presented here solely represent the views of the authors and do not necessarily represent those of the U.S. Department of Veterans Affairs or the U.S. government.

Financial Support: The original review was funded by the Department of Veterans Affairs, Office of Research and Development, Health Services Research and Development Service, Evidence Synthesis Program.

Disclosures: Disclosures can be viewed at www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=L21-0375.

Corresponding Author: Roderick MacDonald, MS, Minneapolis VA Health Care System, One Veterans Drive, Minneapolis, MN 55417; e-mail, roderick.macdonald@va.gov.

doi:10.7326/L21-0375

References

1. Wilt TJ, Kaka AS, MacDonald R, et al. Remdesivir for adults with COVID-19: a living systematic review for American College of Physicians practice points. Ann Intern Med. 2021;174:209-220. [PMID: 33017170] doi:10.7326/M20-5752
2. Kaka AS, MacDonald R, Greer N, et al. Major update: remdesivir for adults with COVID-19: a living systematic review and meta-analysis for the American College of Physicians practice points. Ann Intern Med. 2021;174:663-672. [PMID: 33560863] doi:10.7326/M20-8148
3. Kaka A, MacDonald R, Greer N, et al. Surveillance update–02/08/21. Ann Intern Med. 10 February 2021. Accessed at https://www.acpjournals.org/doi/10.7326/M20-8148 on 8 June 2021.
4. Mahajan L, Singh AP. Clinical outcomes of using remdesivir in patients with moderate to severe COVID-19: a prospective randomised study. Indian J Anaesth. 2021;65:S41-S46. [PMID: 33814589] doi:10.4103/ija.IJA_149_21
5. Spinner CD, Gottlieb RL, Criner GJ, et al; GS-US-540-5774 Investigators. Effect of remdesivir vs standard care on clinical status at 11 days in patients with moderate COVID-19: a randomized clinical trial. JAMA. 2020;324:1048-1057. [PMID: 32821939] doi:10.1001/jama.2020.16349
6. Beigel JH, Tomashek KM, Dodd LE, et al; ACTT-1 Study Group Members. Remdesivir for the treatment of Covid-19–final report. N Engl J Med. 2020;383:1813-1826. [PMID: 32445440] doi:10.1056/NEJMoa2007764
7. Pan H, Peto R, Henao-Restrepo A, et al; WHO Solidarity Trial Consortium. Repurposed antiviral drugs for Covid-19–interim WHO Solidarity trial results. N Engl J Med. 2021;384:497-511. [PMID: 33264556] doi:10.1056/NEJMoa2023184
8. Wang Y, Zhang D, Du G, et al. Remdesivir in adults with severe COVID-19: a randomised, double-blind, placebo-controlled, multicentre trial. Lancet. 2020;395:1569-1578. [PMID: 32423584] doi:10.1016/S0140-6736(20)31022-9
9. Goldman JD, Lye DCB, Hui DS, et al; GS-US-540-5773 Investigators. Remdesivir for 5 or 10 days in patients with severe Covid-19. N Engl J Med. 2020;383:1827-1837. [PMID: 32459919] doi:10.1056/NEJMoa2015301