When is remdesivir effective for COVID-19?

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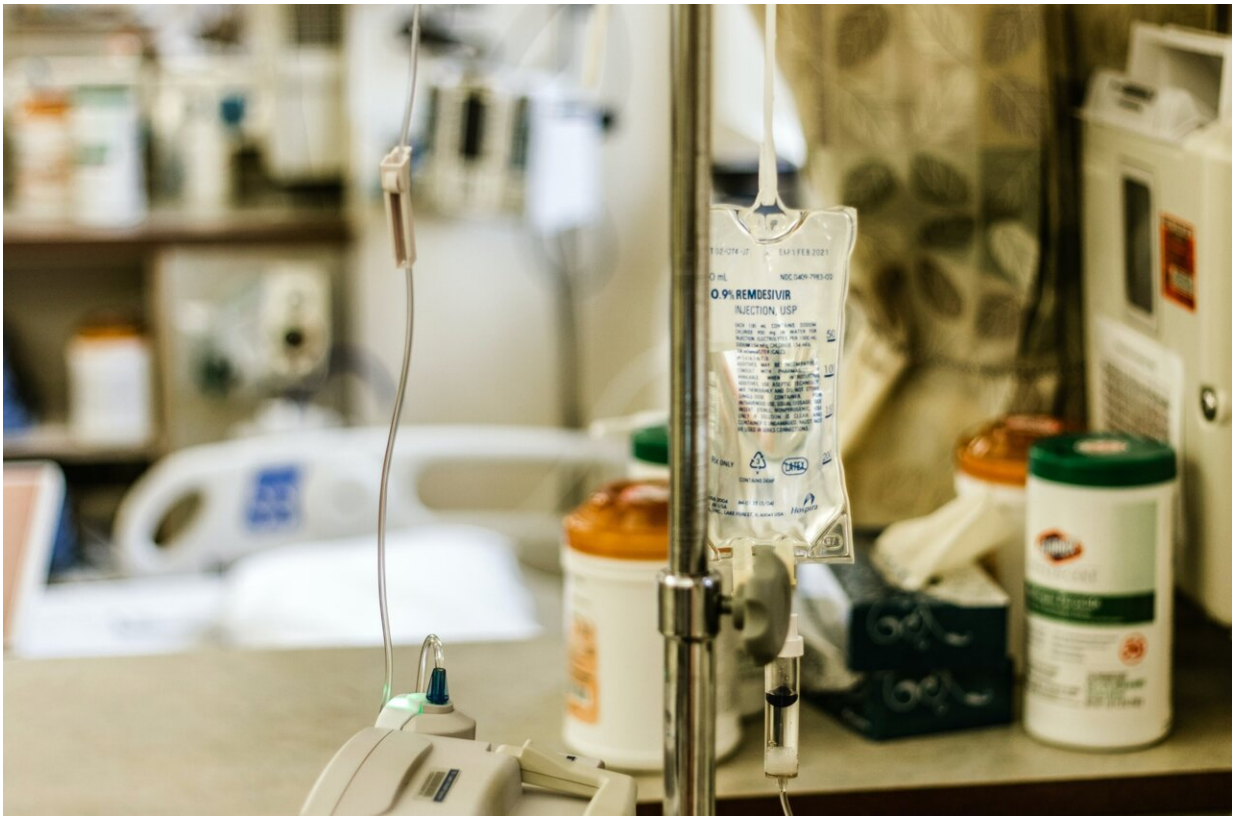

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Remdesivir was one of the first medications approved for treatment of COVID-19. Clinical studies evaluated its effectiveness, but did not generate conclusive results. A new analysis of the study data shows that a specific group of patients benefits the most from the drug.

Since the outbreak of the COVID-19 pandemic, researchers and medical practitioners have made a massive effort to find effective treatments for the illness. Remdesivir was the first antiviral agent approved for treatment of COVID-19, first in the U.S. in 2020 and later in Europe. The medication was a beacon of hope early in the pandemic and remains in use today.

Multiple international studies since 2020 have investigated how treatment with remdesivir affects mortality in adults hospitalized with COVID-19. The results have been contradictory. It has remained disputed how well the medication works and whether it benefits some patient groups more than others.

Analysis of data from more than 10,000 patients

A research team from the University of Basel and the University Hospital of Basel led by clinical epidemiologist Professor Matthias Briel has now collected and reanalyzed individual patient data from eight randomized clinical trials. The data covers more than 10,000 unvaccinated patients from more than 40 countries who were treated for COVID-19 in a hospital.

Using cutting-edge data analysis methods, the researchers investigated the benefit and potential side effects of the drug and its effects on sub-groups. The goal was to find out which patient groups, if any, benefited from remdesivir. The results have now appeared in the journal *The Lancet Respiratory Medicine.*

Beneficial with conventional oxygen therapy

The meta-analysis showed that patients who did not receive oxygen therapy or only received conventional oxygen support experienced a

significant survival benefit due to remdesivir. In this group, remdesivir lowered mortality during the four-week observation period by roughly 2%, leading to 20 fewer deaths per 1,000 patients.

However, this positive effect was not observed in all patient groups. "The benefit to patients with intensive ventilation support remains unclear," explains Dr. Alain Amstutz, first author of the study. This could also be due to the fact that little data is available about this group.

The results are consistent with the current WHO guidelines, which recommend remdesivir for patients with severe but non-critical COVID-19 infections.

There was no evidence that the drug's impact on patients varies depending on age, comorbidities, or various markers of high inflammation. Nor did treatment with remdesivir lead to earlier discharge from the hospital.

"Fortunately, we found that remdesivir does not lead to more serious unwanted side effects than standard treatment," says Dr. Benjamin Speich, joint first author of the study. The effects of remdesivir on vaccinated people and people who have recovered from COVID-19 and the question of how cost-effective remdesivir is remain to be clarified in future studies.

More information: Alain Amstutz et al, Effects of remdesivir in patients hospitalised with Covid-19: a systematic review and individual patient data metaanalysis of randomised controlled trials, *The Lancet Respiratory Medicine* (2023). DOI: 10.1016/S2213-2600(22)00528-8

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