Remdesivir study finally published, and an expert in critical care medicine gives us his verdict

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Credit: AI-generated image (disclaimer)

The results of the ACTT-1 trial, which looked at the effectiveness of remdesivir as a treatment for COVID-19, have finally been published. So far the only drug that has been shown to reduce deaths from the disease has been dexamethasone, a steroid that suppresses the immune

system through its anti-inflammatory effects. Steroids have a secondary effect on the disease—they don't target the virus itself. Remdesivir, on the other hand, goes straight to the cause of the disease by inhibiting the virus.

The drug, which was developed by Gilead Sciences, was approved for use by the US Food and Drug Administration under an "emergency use authorisation" on May 1. It was recently used to treat President Donald Trump.

Gilead Sciences has claimed that the drug has significant benefits for patients—but robust data has been lacking until now. This makes the long-awaited results of the ACTT-1 trial important. Having read the study, most physicians treating patients with COVID-19 will be asking themselves the same question: "Should I be using remdesivir for my patients?"

Should all COVID-19 patients get remdesivir?

The trial follows a gold-standard design of being double blind, randomized and controlled, and like most trials published in top medical journals, at first glance the outcomes are fairly impressive. They found that patients receiving the drug improved and recovered more quickly, were less likely to progress to severe disease, were discharged from hospital sooner, and had a lower death rate of 11.4% compared with 15.2% in patients receiving "usual" treatment.

Based on these positive findings, it would be tempting to conclude that all patients who have the disease should receive the drug, but since it costs around US$2,340 (£1,795) to treat one patient, and is likely to be in short supply in the UK for the foreseeable future, the question warrants a more considered analysis.

The use of any drug also has potentially negative consequences. Remdesivir has not been around long enough to have a track record for safety, and the reports of side-effects in COVID patients continue to grow.

When we unpick the data and look at analyzes of smaller groups (subgroup analyzes), the only patients for whom benefit was conclusively demonstrated were those who were less severely ill and receiving only supplemental oxygen rather than being on a ventilator. It is worth remembering that ACTT-1 is a relatively small trial and sicker patients may well benefit, but it has yet to be proven. Another interesting subgroup analysis showed that patients receiving dexamethasone showed added benefit with the addition of remdesivir, which is good news.

No magic bullet

So when I go into my hospital this week and am confronted on the wards with patients who are ill with COVID-19, ACTT-1 tells me that, provided I can find remdesivir on the pharmacy shelf, I should be confident to use it in any patients who are receiving oxygen alone, in the hope that they will recover sooner and, more importantly, avoid progression to needing ventilation on intensive care. I should also continue to use dexamethasone as normal, expecting added benefit.

The study also tells me that I should not shut the doors to the intensive care unit just yet. By prescribing remdesivir on top of applying the best treatment available, one in ten patients will continue to deteriorate and die. Remdesivir is not the magic bullet. If one exists, it has yet to be designed.

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