

Two cases show COVID virus mutating around standard treatment remdesivir

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Patients with weakened immune systems could be inadvertently helping

COVID-19 develop resistance to the antiviral drug remdesivir, a new study reports.

After lengthy COVID infections, two [kidney transplant patients](#) on immune-suppressing drugs to prevent [organ rejection](#) developed a mutated version of SARS-CoV-2 resistant to remdesivir, according to [researchers at NYU Grossman School of Medicine and NYU Long Island School of Medicine](#).

"It is possible that the [antiviral treatment](#) itself, combined with the [patients'](#) weakened immune systems, may have driven the evolution of this concerning mutation," said lead author Dr. John Hogan, an assistant professor of medicine at NYU Langone Health.

[Remdesivir](#) remains an important weapon against COVID-19, and is essential for treating transplant patients, because the newer antiviral [Paxlovid](#) can interfere with the immunosuppressant drugs they require, the researchers explained in an NYU news release.

A weak immune system enables COVID-19 to remain in the body longer, copy itself and continually change in ways that flout existing treatments, the study authors said.

Both patients were initially infected with a version of COVID-19 that responded normally to remdesivir, according to the investigators.

During their months-long bouts with COVID-19, both patients were treated with remdesivir. The researchers later found a COVID strain in their bodies containing a mutation that makes the virus more resistant to remdesivir.

This is the first study to identify this specific mutation—called V7921—in organ-[transplant patients](#) treated with remdesivir, Hogan

said.

"Our results highlight the importance of continuing to monitor how the coronavirus changes over time and keeping on the lookout for [genetic mutations](#) that allow the virus to overcome the medical community's efforts to thwart it," said senior author Adriana Heguy, a professor of pathology at NYU Langone in New York City. "In the future, physicians might also screen for such mutations before making treatment decisions for their most vulnerable patients."

The findings were published online Sept. 26 in the journal [Clinical Infectious Diseases](#).

More information: The U.S. Centers for Disease Control and Prevention has more about [COVID variants](#).

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