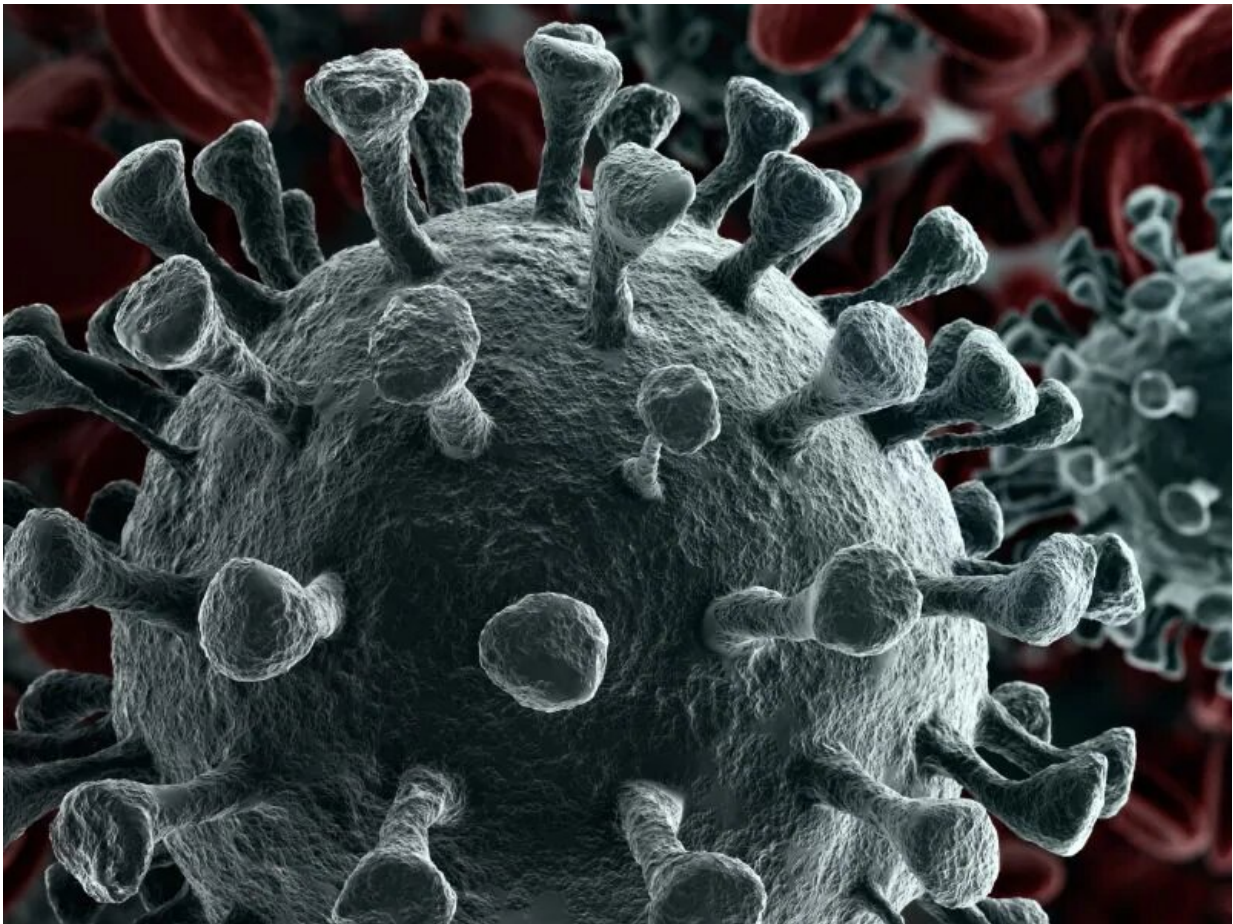


Infusion of certain immune cells may help in severe coronavirus cases

July 15 2020, by Dennis Thompson, Healthday Reporter



(HealthDay)—An infusion of cells that dampen the body's immune

response might help people with severe cases of the new coronavirus recover more quickly, a new report suggests.

Two patients so sick with COVID-19 that they'd been put on a ventilator improved quickly when given an infusion of regulatory T-[cells](#), which are cells that check the immune system and prevent it from overreacting to an infectious threat, said researchers at Johns Hopkins University School of Medicine.

Some patients' immune systems respond to COVID-19 so strongly that they wind up with pneumonia and other [health problems](#) caused by severe inflammation, explained Dr. Douglas Gladstone, a hematologist at the Johns Hopkins Kimmel Cancer Center in Baltimore.

"What's a little bit unique to COVID is that these cells that dampen the immune system, called T regulatory cells, are afflicted by coronavirus," Gladstone said. "Their natural dampening response is blunted because they lack 'T regs.' The immune system is out of balance."

One way to counter this might be to treat people with fresh T reg cells from some other source, Gladstone and his colleagues figured.

So, they obtained doses of T regulatory cells derived from umbilical cord blood by a biotech company called Cellenkos, and tried treating a pair of very sick COVID-19 patients with the cells.

The first patient was a 69-year-old nursing home resident who had to be put on a ventilator after a week in the hospital, while the second was a 47-year-old man who needed ventilation after just two days of hospitalization.

"The ventilatory machine was basically maxed out" for both patients, Gladstone said, and both were in shock. "Their inflammatory system was

so revved up they were on medications to artificially raise their blood pressure," he noted.

Doctors infused the T reg cells into the two patients via IV two to three times, with a few days separating each dose.

"It turned out their inflammation markers dropped very quickly after the infusion of these cells," Gladstone said.

The patients were able to stop taking the drugs to raise their [blood pressure](#) within about two days, and both came off ventilation in a matter of weeks.

The cells worked so well that researchers now want to pursue a follow-up trial involving 45 people treated with one of two doses of T reg cells or a placebo, Gladstone said.

A positive result from that trial could lead to an even larger trial involving more hospitals.

The hope is to have a treatment that helps patients bounce back quickly, reducing their long-term recovery time.

"Currently people can be intubated for 30 days and survive, but gee whiz, being intubated for 30 days, the recovery from that takes a long, long time. We want to take a bite out of it," Gladstone said.

A report on the new therapy was published online July 6 in the *Annals of Internal Medicine*.

This sort of treatment makes sense given what doctors know about how COVID-19 affects the [immune system](#) and harms the body, said Dr. Greg Poland, director of the Vaccine Research Group at the Mayo Clinic

in Rochester, Minn.

"You do see inflammatory markers pretty rapidly drop, and the concern in the more severe level of COVID-19 is it may be the body's overreaction, the so-called cytokine storm, that is enough to tip over into being pathologic," Poland said.

The only problem Poland sees is where this therapy might fit in with all of the other COVID-19 research that's ongoing.

"The hard part is there's a limited number of COVID patients that are in hospitals, because most won't end up in hospitals, and that are sick enough to be in these kind of trials," Poland explained. "You wouldn't do this with somebody who had mild or even moderate disease."

More information: The U.S. Centers for Disease Control and Prevention has more about [COVID-19](#).

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