

Could COVID-19 survivors' blood help save very ill patients?

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As more people recover from COVID-19, that means more people

should have antibodies against the virus. And it's possible that blood donations from those survivors could help protect or treat other people, according to some infectious disease experts.

The general notion is far from new. In the first half of the 20th century, doctors used "convalescent serum" in an effort to treat people during outbreaks of viral infections like measles, mumps and influenza—including during the 1918 Spanish flu pandemic.

The principle is fairly simple: When a pathogen invades the body, the immune system produces antibodies that latch onto the enemy, marking it for destruction. After recovery, those antibodies remain circulating in a person's blood, for anywhere from months to years.

In theory, transferring some of those antibodies to other people with the same virus could help their bodies fight it off. Or, given to healthy people—like the [health care workers](#) on the front lines—the antibodies might offer some temporary protection from infection.

In the midst of the COVID-19 pandemic—with no vaccine or antiviral drug coming soon—antibodies from recovering patients could provide a "stopgap" measure, according to Drs. Arturo Casadevall and Liise-anne Pirofski.

Casadevall, of the Johns Hopkins School of Public Health in Baltimore, and Pirofski, of Albert Einstein College of Medicine in New York City, lay out their case in the March 16 online edition of the *Journal of Clinical Investigation*.

For one, the authors pointed out, convalescent serum is not a thing of the past. It has been tried in limited numbers of patients during more-recent viral crises, including the 2003 SARS ([severe acute respiratory syndrome](#)) epidemic, the 2009 "swine flu" epidemic, and the 2012 outbreak of

MERS (Middle East respiratory syndrome).

Reports on those attempts indicate the antibody treatment generally reduced the severity of patients' illnesses and improved survival.

"In addition to public health containment and mitigation protocols, this may be our only near-term option for treating and preventing COVID-19," Casadevall said in a statement from Johns Hopkins. "And it is something we can start putting into place in the next few weeks and months."

The authors could not be reached for an interview. But other specialists in infectious disease and public health agreed the tactic is worth considering.

"It's a good idea. It's something that's been used before, and we know how to do it," said Dr. Gregory Poland, who heads the Vaccine Research Group at the Mayo Clinic, in Rochester, Minn.

Doctors' experience with the general approach is not limited to viral pandemics, Poland pointed out. They routinely use injections of immune globulin—purified antibody preparations taken from donated [human blood](#)—to treat certain medical conditions.

In addition, modern blood-banking techniques, which screen for infectious agents, should ensure any such tactic against COVID-19 would be as safe as a standard blood transfusion, Poland said.

That's not to say doctors can just start doing it. "You still have to go through the FDA," Poland said, referring to the U.S. Food and Drug Administration.

It's not clear what such an approval process would look like. The

traditional clinical trial approach, where researchers randomly assign people to a treatment or a placebo (inactive substance), is too laborious and time-consuming to put the brakes on a pandemic.

But standard protocols will be needed, including logistic matters like coordination among local doctors, blood banks and hospitals, according to Casadevall.

"We'll have to put protocols in place to make sure that the use of this sera is safe," Casadevall said. But, he added, "we're not talking about research and development—this is something that physicians, blood banks, and hospitals already know how to do and can do today."

In fact, the commentary noted, there are reports that doctors in China have used convalescent serum in at least 245 COVID-19 patients. The details are sketchy, but available information suggests the approach has been safe and reduced the amount of virus in patients' blood.

Dr. Bruce Y. Lee is a professor of health policy management at City University of New York. He said the convalescent serum idea is "certainly worth exploring."

"We're in a situation where the toolbox is pretty empty," Lee said.

Both he and Poland pointed to some key unknowns, including: How long do antibodies against this novel virus last? What amount of antibody would be necessary to help treat the infection or offer some protection?

What is clear is that any protection would be temporary. "This would not replace a vaccine," Lee stressed. Vaccines, he noted, work by training the immune system to launch its own response to an invader, which involves more than [antibodies](#).

And what about people who've recovered from COVID-19? Are they immune to it, at least for a while? There have been reports from China and Japan of patients being declared infection-free then testing positive again.

However, Poland said those cases probably reflect an issue with the testing. "I don't think they represent re-infections," he said. "That would be highly unusual."

More information: The World Health Organization has updates on [COVID-19](#).

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