

Could the blood of Ebola survivors help patients?

September 4 2014, by Maria Cheng



This handout file photo taken Sept. 2, 2014, provided by National Institute of Allergy and Infectious Diseases (NIAID) shows A 39-year-old woman, the first participant enrolled in VRC 207, receiving a dose of the investigational NIAID/GSK Ebola vaccine at the NIH Clinical Center in Bethesda, Md. As West Africa struggles to contain the biggest ever outbreak of Ebola, some experts say an unusual but simple treatment might help: the blood of survivors. The evidence is mixed for using infection-fighting antibodies from survivors' blood for Ebola, but without any licensed drugs or vaccines for the deadly disease, some say it's worth a shot. (AP Photo/NIAID, File)

As West Africa struggles to contain the biggest ever outbreak of Ebola, some experts say an unusual but simple treatment might help: the blood of survivors.

The evidence is mixed for using infection-fighting antibodies from survivors' blood for Ebola, but without any licensed drugs or vaccines for the deadly disease, some say it's worth a shot.

"This is something that's fairly simple to do," said Dr. Peter Piot, director of London's School of Hygiene and Tropical Medicine and the co-discoverer of the Ebola virus.

Using blood of survivors is one of the experimental Ebola treatments under discussion at a two-day meeting that began Thursday in Geneva. The more than 200 experts assembled by the World Health Organization are looking at issues of safety and effectiveness and considering which treatments should be prioritized for testing during the current outbreak.

There are about a half dozen medicines and vaccines in development. None has been tested in humans but an early trial of one vaccine began this week in the United States.

Much attention has focused on the unproven drug ZMapp, which was given to seven patients, two of whom died. But the limited supply is now exhausted and its developer says it will take months to make even a modest amount.

In contrast, WHO's blood network, an international group of blood regulators, noted recently there are thousands of survivors from past Ebola outbreaks in Africa who could be tapped as a source. The group said blood from survivors should be considered experimental and recommended that studies be done during the crisis.

In another document published this week, WHO estimated the first batches of survivor blood could be available by the end of the year. The agency said it had identified several recovered patients as potential donors, but acknowledged "logistics of blood collection are an issue."

Some scientists think antibodies in the blood of Ebola survivors could help patients infected with the deadly disease.

Antibodies are produced by the body's immune system to fight off harmful things like viruses. They remain in the blood ready to fight off any future infections by the same foreign substance.

Piot said it is vital to find out if the blood treatment is effective.

"I hope this is the last Ebola outbreak where all we have is isolation, quarantine and supportive care to treat patients," he said.

Experts say blood from survivors could be collected and processed for multiple patients, or a survivor could donate blood to an individual patient. Both methods require screening the blood for diseases like HIV or malaria.

While direct donation would be easier, the levels of Ebola-fighting antibodies produced by a survivor can vary. Ideally, experts said, the amount of antibodies should be measured.

"With drugs, you can at least do some quality control," said Tom Geisbert, an Ebola expert at the University of Texas Medical Branch at Galveston. "If you're just taking blood blindly from (survivors) without testing it for antibody levels, how can we predict what outcome they will have?"

In West Africa, there have been no organized attempts to use the blood

of survivors to treat patients. Blood from a 14-year-old boy who survived Ebola was given in July to American doctor Kent Brantly, who was infected in Liberia. Brantly also got some ZMapp and was released from an Atlanta hospital last month. It's unknown whether the drug or the boy's blood aided his recovery.

Blood from survivors of diseases including Ebola, bird flu and anthrax has been used in the past when doctors ran out of options and seems to work best in diseases where there's a toxin, like anthrax and tetanus.

For treating Ebola, "you would need to come up with how much you should give, how long, and what's a safe infusion rate," said Dr. Michael Kurilla, director of BioDefense at the U.S. National Institutes of Health. "If you know what the potency of the serum is, you could theoretically help the body clear Ebola out of their cells before it can do too much damage."

Dr. Colin Brown, who recently worked in Ebola clinics in Sierra Leone for King's College London's partnership with the country, said local hospitals should be able to provide survivors' blood if doctors want to offer it.

So far, more than 3,000 people have been infected. Last week, WHO estimated there could be another 20,000 cases before the Ebola outbreak is stopped, a figure Brown described as unfortunate but realistic.

"It does give us the opportunity to try some new therapies," he said. "And as long as they are not harmful, why shouldn't we try to do something, hopefully help some patients and learn from this?"

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