Ebola Clinical Trial News Update

A health worker wearing Ebola protection gear at a Biosecure Emergency Care Unit treatment center in Beni, Democratic Republic of Congo.
Credit Baz Ratner/Reuters

Although Modality Solutions LLC is not mentioned in this *New York Times*, August 12, 2019 article on a possible cure for Ebola, we were asked to assist with this study because of our reputation of expertise in the field and previous collaboration with BARDA, CDC, and NIH during the 2015 - 2016 Ebola outbreak in West Africa. The Mitchell Group (TMG) and Leidos Biomed, working with the US National Institute of Health (NIH) and World Health Organization (WHO) requested our assistance for storage and transport of time and temperature-sensitive products (TTSPs) such as the investigational drugs, biological specimens, and laboratory reagents. In February and March 2019, our Subject Matter Experts (SMEs) traveled to the eastern provinces of the Democratic Republic of Congo (DRC) to evaluate and address cold chain management deficiencies. During their time in country, they provided cold chain training to local staff, conducted site assessments, and qualified critical equipment for the study.

Source: https://www.nytimes.com/2019/08/12/health/ebola-outbreak-cure.html

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A Cure for Ebola? Two New Treatments Prove Highly Effective in Congo

Donald G. McNeil Jr.

In a development that transforms the fight against Ebola, two experimental treatments are working so well that they will now be offered to all patients in the Democratic Republic of Congo, scientists announced on Monday.

The antibody-based treatments are quite powerful — "Now we can say that 90 percent can come out of treatment cured," one scientist said — that they raise hopes that the disastrous epidemic in eastern Congo can soon be stopped and future outbreaks more easily contained.

Offering patients, a real cure "may contribute to them feeling more comfortable about seeking care early," said Dr. Anthony S. Fauci, director of the National Institute of Allergy and Infectious Diseases, who joined the World Health Organization and the Congolese government in making the announcement.

That prospect should greatly lessen the aura of terror that surrounds Ebola, a hemorrhagic fever virus whose reputation has been shaped by its deadliness and its incurability. Since its discovery 40 years ago, the virus has haunted Africa. Until now, many believed that anyone catching Ebola was doomed to be die alone among space-suited strangers and to be buried without ceremony in a bleach-misted body bag.

Fear of the virus and mistrust of health workers have been major obstacles to combating Ebola's spread in eastern Congo, where terrified families often hide their sick and even attack health teams.

If word spreads that a cure exists, people may begin to summon help early in the disease's progress, which would be crucial to saving lives and preventing further spread.

"The more we can learn about these two treatments, the closer we can get to turning Ebola from a terrifying disease to one that is preventable and treatable," said Dr. Jeremy Farrar, director of the Wellcome Trust and a co-chair of a W.H.O. committee evaluating Ebola therapeutics.

The epidemic, which was declared a public health emergency last month, has now infected about 2,800 known patients, killing more than 1,800 of them, according to the W.H.O.

The new experimental treatments, known as REGN-EB3 and mAb-114, are both cocktails of monoclonal antibodies that are infused intravenously into the blood.

REGN-EB3 is made by Regeneron Pharmaceuticals of Tarrytown, N.Y., which also makes other antibody treatments. Dr. Fauci's institute, which is part of the National Institutes of Health, developed mAb114 and licensed production last year to Ridgeback Biotherapeutics, a Miami company.

Antibodies are Y-shaped proteins normally made by the immune system that clump onto the outer shells of viral particles, preventing them from entering cells. The two new treatments are synthetic versions grown under laboratory conditions.

The two new therapies were among four that were tested in a trial that has enrolled almost 700 patients since November. The two worked so well that a committee meeting on Friday to look at preliminary results in the first 499 patients immediately recommended that the other two treatments, ZMapp, made by Mapp Biopharmaceutical, and remdesivir, made by Gilead Sciences, be stopped. All patients will now be offered either the Regeneron or the Biotherapeutics drug.

Among patients who were brought into treatment centers with low viral loads — which suggested that they had been infected only days before — only 6 percent of those who got Regeneron drug died, and only 11 percent of those who got the Biotherapeutics drug died, Dr. Fauci said.

By contrast, 33 percent of those who received the antiviral drug made by Gilead died, as did 24 percent of those who got ZMapp, an older monoclonal antibody cocktail that was tested briefly during the Ebola outbreak in West Africa in 2014.

The death rate among untreated and unvaccinated patients in this outbreak is thought to be over 70 percent, said Dr. Michael J. Ryan, director of emergency response for the W.H.O.

The difference in mortality rates between the Regeneron product and the Ridgeback one was considered too small to be statistically significant, so both are still being used, Dr. Fauci said.

Regeneron and Ridgeback have said they can make enough doses to treat all patients, Dr. Fauci said. It is helpful to have two options in case supply problems develop with one drug or the other, said Dr. Michael J. Ryan, the W.H.O.'s chief of emergency response.

Dr. Jean-Jacques Muyembe, director of Congo's National Institute for Biomedical Research, joined Dr. Fauci and Dr. Ryan in announcing the trial results. Psychologically, Dr. Muyembe said, news of a cure could change the course of this outbreak, which is the worst of the 10 that Congo has endured.

Residents of eastern Congo, many of them traumatized refugees from wars and genocides in the region, are deeply distrustful of the government in the capital, Kinshasa. Rumors have spread that Ebola does not exist, or that treatment teams steal blood and body parts for witchcraft. Treatment centers have been shot up or burned down.

"Now we can say that 90 percent can come out of treatment cured, they will start believing it and developing trust," Dr. Muyembe said. "The first ones to transmit this information will be the patients themselves."

Dr. Muyembe, 77, whom Dr. Fauci referred to as a "true hero," has been fighting Ebola since it first appeared in what was then Zaire in 1976.

Decades ago, he pioneered the use of survivors' blood serum — which contains antibodies — in order to save patients. The two experiment treatments that proved successful last week descend in part from his original research.

Asked how he felt about that during a telephone news conference, Dr. Muyembe said through a translator: "I'm a little sentimental. I had this idea a long time ago, and I've waited patiently for it. I'm very happy, and I can't believe it."

The Regeneron treatment — the one with the best results — was added to the clinical trial at the last minute only after reconsideration by a W.H.O. panel of experts, the company said.

“We’re extremely moved to know our therapy is helping save lives,” said Neil Stahl, the company’s executive vice president of research. “Our team worked tirelessly to discover, develop and produce REGN-EB3 in record time.”

The four treatments were tested in units run by three medical charities: Doctors Without Borders, Alima and the International Medical Corps.

Formal testing, which began in November, was known as the PALM trial, for Pamoja Tulinde Maisha, which means “Save Lives Together” in Swahili. Patients were assigned at random to get one of the four treatments.

Before that, some patients were being given whatever was available. Early testing on 113 patients released in October suggested that the treatments could substantially cut mortality rates if given early, but there was not enough data to tell which ones were working the best. Development of the new treatments was supported by the Biomedical Advanced Research and Development Authority, a division of the Department of Health and Human Services concerned with fighting chemical, biological, radiological and nuclear threats, and pandemic diseases.

A spokeswoman for Regeneron said the company had “not considered pricing yet” but was currently offering the treatment for free for “compassionate use” purposes.

Despite the availability of a highly effective vaccine and hints that treatments work, the epidemic has spiraled out of control in Congo because of violence in the hot zone where the virus was entrenched.

The State Department forbade American government personnel from working on the front lines, including experts from the Centers for Disease Control and Prevention who have played vital roles in beating previous Ebola epidemics.

The response was also severely hampered by a power struggle within the Congolese government itself.

That appeared headed for resolution on July 26, when the health minister, Dr. Oly Ilunga, resigned in protest over a decision by President Felix Tshisekedi to put responsibility for fighting the outbreak in the hands of a committee of experts headed by Dr. Muyembe.

In April, a different committee headed by Dr. Muyembe had delivered a scathing report on Dr. Ilunga’s handling of the epidemic and suggested many changes, including the rolling out of a second vaccine and efforts to win the trust of residents by offering food, routine medical care and vaccines against other diseases, like measles.