

# NIH doctors describe severe case of Ebola virus disease

April 4 2016

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The Ebola virus, isolated in November 2014 from patient blood samples obtained in Mali. The virus was isolated on Vero cells in a BSL-4 suite at Rocky Mountain Laboratories. Credit: NIAID

For more than a month in 2015, a multidisciplinary team including infectious disease and critical care physicians and nurses, respiratory

therapists and other specialists at the National Institutes of Health (NIH) treated a critically ill patient who had contracted Ebola virus disease in Sierra Leone. A new report by the medical caregivers details the clinical course of the 34-year-old American healthcare worker who was admitted to the NIH Special Clinical Studies Unit on day 7 of his illness. The patient survived his illness with intensive supportive care, despite multi-organ failure.

Upon admission to the NIH Clinical Center, the patient was enrolled in a clinical trial and was randomly assigned to receive optimized supportive care only. The trial's other arm included treatment with experimental therapies. In the first few days after admission, the patient's condition worsened dramatically and he experienced sequential organ failure, despite intensive supportive care that included maintenance of optimal fluid and electrolyte balances. His prognosis was poor.

In addition to declines in kidney and liver function, the patient experienced severe neuromuscular weakness that led to respiratory failure, and he required mechanical ventilation for 10 days. Complications also included meningoencephalitis, a frequently fatal condition involving inflammation of the brain and meningeal tissue, the protective outer layers of the brain and spinal column. On day 33 of the patient's illness, when he no longer was shedding virus, doctors performed magnetic resonance imaging (MRI) scans and detected multiple sites of tissue damage (lesions) in both the brain and [spinal column](#), consistent with the multiple nervous system abnormalities experienced by the patient during his illness. Meningoencephalitis has been previously described as a complication of Ebola virus infection, but, the NIH doctors note, the new report is the first to include MRI findings and a detailed physical examination of a patient who received supportive care only.

Ultimately, the patient survived his illness. When examined 7 months

after his hospital admission, almost all of his neurological abnormalities had disappeared, and MRIs showed that most of the previously seen lesions had resolved. This report highlights that sequential organ failure may occur in [patients](#) with severe Ebola virus disease despite meticulous attention to fluid and electrolyte balances, and that near complete recovery is possible with intensive-level supportive care alone.

NIH Institutes contributing to the report were the NIH Clinical Center; the National Eye Institute; the National Heart, Lung and Blood Institute; the National Institute of Allergy and Infectious Diseases; and the National Institute of Neurological Disorders and Stroke.

**More information:** DS Chertow et al. Severe meningoencephalitis in a case of Ebola virus disease. *Annals of Internal Medicine* [DOI: 10.7326/M15-3066](#) (2016).

Provided by NIH/National Institute of Allergy and Infectious Diseases

Citation: NIH doctors describe severe case of Ebola virus disease (2016, April 4) retrieved 5 May 2024 from <https://medicalxpress.com/news/2016-04-nih-doctors-severe-case-ebola.html>

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