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EBOLA VIRUS - AN OUTBREAK

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Abstract

Ebola, also known as Ebola virus disease (EVD) and Ebola hemorrhagic fever (EHF), is a zoonotic viral hemorrhagic fever in humans and other primates. Symptoms typically start anywhere between two days and three weeks after infection. The first symptoms are usually fever, sore throat, muscle pain, and headaches. Outbreaks of the disease have had a mortality rate of between 25 and 90%, averaging out at approximately 50%. The viral species involved and timing of treatment play a critical role in its prognosis. Death is often due to shock from fluid loss, and typically occurs between 6 and 16 days after the first symptoms appear.

Ebola is a rare but life-threatening infection. It can cause outbreaks of serious disease. It spreads through contact with the body fluids of infected animals or people. Its early symptoms are flu-like. But they can get more severe. Get medical care right away if you think you were exposed to Ebola and have symptoms.

Keywords Ebola Virus, Fever, Sore Throat, Muscle Pain, And Headaches, Body Fluids.

Introduction

Ebola usually starts with flu-like symptoms. But they can progress to severe vomiting, diarrhea and bleeding. Ebola is a serious, life-threatening type of viral hemorrhagic fever- a viral infection that damages your blood vessels. Ebola symptoms start off like the flu (influenza). But they can progress to:

- Severe bleeding (hemorrhage)
- Neurological disorders (conditions that affect your brain and nerves)
- Severe vomiting

Types of Ebolavirus

There are four different Ebola strains that affect people. Experts name the viruses that cause Ebola after the location in which they were first identified (even if outbreaks have occurred in other locations since then). They differ in their ability to cause symptoms and their severity. They include:

- **Bundibugyo ebolavirus** (Bundibugyo virus). This causes Bundibugyo virus disease (BDBV). It's less likely to cause death than other types.
- **Sudan ebolavirus** (Sudan virus). This causes Sudan virus disease (SVD). It's more likely to be deadly.
- **Taï Forest ebolavirus** (Taï Forest virus). This causes Taï Forest virus disease (TAFV). This is the rarest cause of Ebola.
- **Zaire ebolavirus** (Ebola virus). This causes Ebola virus disease (EVD). EVD is the most common cause of Ebola outbreaks and deaths.

Symptoms and Causes

EVD in humans is caused by four of six viruses of the genus *Orthoebolavirus*. The four are Bundibugy ebolavirus (BDBV), Sudan ebolavirus (SUDV), Taï Forest ebolavirus (TAFV) and Zaire ebolavirus (EBOV). EBOV is the

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most dangerous of the known EVD-causing viruses, and is responsible for the largest number of outbreaks. The fifth and sixth viruses, Reston virus (RESTV) and Bombali virus (BOMV), are not thought to cause disease in humans, but have caused disease in other primates. All six viruses are closely related to marburgviruses.

Each type of Ebola causes similar symptoms. The symptoms may come in phases.

- Chills
- Feeling very tired (fatigue) and weak
- Fever
- Loss of appetite
- Muscle pain
- Severe headache
- Sore throat

Severe Ebola symptoms can develop a few days later, including:

- Black, tarry stool (melena)
- Bleeding or bruising
- Confusion
- Diarrhea that may be bloody
- Rash or spots of blood under your skin (petechiae or purpura)
- Red or bloodshot eyes
- Vomiting that may be bloody or look like coffee grounds (coffee ground emesis)

Later Ebola stages can be severe. They may include:

- Brain inflammation (encephalitis)
- Organ failure
- Seizures
- Your body doesn't get enough blood flow (shock)

Complications of Ebola virus

Even after recover from Ebola have long-term (chronic) complications. These may include:

- Abdominal pain
- Eye pain or redness
- Fatigue
- Headache

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- Muscle and joint pain
- Numbness and tingling (peripheral neuropathy)
- Peeling skin
- Vision problems including blindness, blurred vision and light sensitivity (photophobia).

Spreading of Ebola virus

Orthoebola viruses spread through contact with body fluids of infected animals (spillover event) or humans. Body fluids include:

- Amniotic fluid
- Breast milk
- Pee (urine)
- Poop (stool)
- Semen
- Spit (saliva)
- Sweat

Ebola virus attack from surfaces, objects or medical devices .and from eating the meat of infected animals.

It's very unlikely that Ebola is an airborne infection. Airborne infections spread through small respiratory droplets that hang in the air after:

- Coughing
- Heavy breathing
- Laughing
- Sneezing

How long does Ebola stay in body?

Ebola can stay in certain parts of the body for weeks or months, even after symptoms go away. These include :

- Central nervous system (including the cerebrospinal fluid that surrounds your brain and spinal cord)
- Eyes

But the different types of Ebola virus have different survival rates:

- Without treatment, up to 9 out of 10 people who have the Ebola virus can die
- The Sudan virus is deadly in about half of all cases
- The Bundibugyo virus is deadly in about 3 out of 10 cases
- Taï Forest virus has caused Ebola in one person, and it wasn't fatal

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The average survival rate from all Ebola outbreaks is over 50%.

Diagnosis and Tests

Ebola virus can be difficult to diagnose because it shares symptoms with other illnesses, including yellow fever, malaria and typhoid fever. Healthcare providers will first:

- Review the health history
- Ask about any recent travel or contact with people or animals that may have had Ebola

PCR tests are a type of blood test for Ebola virus.

Management and Treatment

Healthcare providers use two monoclonal antibody treatments for Ebola virus disease. Monoclonal antibodies work like your immune system's natural antibodies. They help fight off the infection while body builds its own defenses. The monoclonal antibody treatments include:

- **Ebanga-** This is a single monoclonal antibody.
- **Inmazeb-** This is a combination of three monoclonal antibodies.

Experts have only tested these treatments in *Zaire ebolavirus* infections.

Providers will also work to manage symptoms and treat any potential complications with:

- IV fluids to prevent dehydration
- Oxygen therapy
- Pain relievers
- Vasopressors to raise low blood pressure

Prevention

The Ervebo vaccine helps protect people who are at high risk of contracting Ebola virus. This includes people who work with orthoebolaviruses in a lab and healthcare workers who treat people who have Ebola. It can also act as a type of pre-exposure prophylaxis for people traveling to areas with Ebola outbreaks. It's effective during outbreaks, too.

The Zabdeno/Mvabea vaccines also help protect adults and children up against Ebola virus. Zabdeno is the first vaccine dose, and Mvabea is a booster dose that you receive about two months later.

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