

EBOLA VIRUS

Ebolavirus belongs to the family *Filoviridae*, genus *Ebolavirus*. It causes Ebola hemorrhagic fever, a severe, often fatal disease in humans and nonhuman primates (such as monkeys, gorillas, and chimpanzees). When infection occurs, symptoms usually begin abruptly.

The first Ebolavirus species was discovered in 1976 in what is now the Democratic Republic of the Congo near the Ebola River. Since then, outbreaks have appeared sporadically. There are five identified subspecies of *Ebolavirus*. The natural reservoir host of ebolaviruses remains unknown. However, on the basis of available evidence and the nature of similar viruses, researchers believe that the virus is zoonotic (animal-borne) with bats being the most likely reservoir.

Transmission

Because the natural reservoir of ebolaviruses has not yet been proven, the manner in which the virus first appears in a human at the start of an outbreak is unknown. However, researchers have hypothesized that the first patient becomes infected through contact with an infected animal. When infection occurs in humans, virus can be transmitted to others in several ways which include: direct contact with the blood or secretions of an infected person and exposure to objects (such as needles) that have been contaminated with infected secretions.

The viruses that cause Ebola HF are often spread through families and friends because they come in close contact with infectious secretions when caring for ill persons. During outbreaks of Ebola HF, the disease can spread quickly within health care settings (such as a clinic or hospital).

Signs and Symptoms

Symptoms of Ebola HF typically include: Fever, Headache, Joint and muscle aches, Weakness, Diarrhea, Vomiting, Stomach pain, Lack of appetite

Some patients may experience: A Rash, Red Eyes, Hiccups, Cough, Sore throat, Chest pain, Difficulty breathing, Difficulty swallowing, Bleeding inside and outside of the body. Symptoms may appear anywhere from 2 to 21 days after exposure to ebolavirus.

Diagnosis

Diagnosing Ebola HF in an individual who has been infected for only a few days is difficult, because the early symptoms, such as red eyes and a skin rash, are nonspecific to ebolavirus infection and are seen often in patients with more commonly occurring diseases.

However, if a person has the early symptoms of Ebola HF and there is reason to believe that Ebola HF should be considered, the patient should be isolated and public health professionals notified. Samples from the patient can then be collected and tested to confirm infection.

Laboratory tests used in diagnosis include: Antigen-capture enzyme-linked immunosorbent assay (ELISA) testing, IgM ELISA, Polymerase chain reaction (PCR), Virus isolation

Treatment

Standard treatment for Ebola HF is still limited to supportive therapy. This consists of: balancing the patient's fluids and electrolytes. However, if a person has the early symptoms of Ebola HF, the patient should be isolated and public health professionals notified. Supportive therapy can continue with proper protective clothing until samples from the patient are tested to confirm infection.

Prevention

The prevention of Ebola HF presents many challenges. Because it is still unknown how exactly people are infected with Ebola HF, there are few established primary prevention measures.

When cases of the disease do appear, there is increased risk of transmission within health care settings. Therefore, healthcare workers must be able to recognize a case of Ebola HF and be ready to employ practical viral hemorrhagic fever isolation precautions or barrier nursing techniques. Barrier nursing techniques include: wearing of protective clothing (such as masks, gloves, gowns, and goggles), the use of infection-control measures (such as complete equipment sterilization and routine use of disinfectant), isolation of Ebola HF patients from contact with unprotected persons.

Timely treatment of Ebola HF is important but challenging since the disease is difficult to diagnose clinically in the early stages of infection. Because early symptoms such as headache and fever are nonspecific to ebolaviruses, cases of Ebola HF may be initially misdiagnosed.