

Ebola Virus Disease

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Abstract

It is also known as ebola hemorrhagic fever. It was first identified in 1976 in villages named nzara and yambuku near Ebola River in sub Saharan Africa from which it got its name. It is a viral disease of human and also animals. It kills 50 percent to 90 percent people it affected. This disease spread by direct contact and also by carrier mainly fruit bats. This disease is often confused with malaria, cholera, typhoid meningitis. World health organization reported 24 outbreaks between 1976-2013 (1,716 cases). Guinea, Sierra, Leone and Liberia of West Africa contribute for largest outbreak (24,049 cases resulting in 9,855 deaths as of march4, 2015).

It is caused by four of five virus genus of Ebola virus. They are Zaire Ebola virus, Tai forest virus (TAFV), Sudan virus (SUDV), Bundibugyo virus (BDBV). Among the four most dangerous is Zaire Ebola virus which is responsible for most of the outbreaks. The fifth virus known as reston virus cause disease in primates (animals) and not in humans. Ebola contain single stranded RNA genome. The transmission is through direct contact with affected patients and utensils recently contaminated by them. It is transmitted between animals to animal by eating the fruit partially eaten by affected animal (fruit bat) and also by direct contact with affected animal. The incubation period for this disease is between 2-21 days. The symptoms of this disease are headache, fever, joint pain, fever, feeling tired, decreased appetite. The fever is greater than 101 degree Fahrenheit. Development of maculopapular rash is very common. Internal and external bleeding may also occur from mucous membrane. Bleeding causes hematoma, bloody stool, coughing up of blood, petechiae, and whites of the eyes become red. After 7-14 days recovery begins. Most of the death is due to fluid loss causing low blood pressure. People develop antibody against Ebola which can remain for at least 10 years. People recovered from Ebola cannot transmit the disease again.

It can be diagnosed by enzyme linked immuno sorbent assay (ELISA), virus isolation by cell culture, reverse transcriptase polymerase chain reaction assay(RT-PCR), electron microscopy, serum neutralization test. There is no particular treatment for Ebola. However oral rehydration therapy and treatment for specific disease help to survive. This disease can be prevented and controlled by creating awareness among the people about the transmission of this disease, avoiding close contact with affected person or animal. The affected animals should be handled carefully. It should be checked whether the animal products are completely cooked before consumption, safe burial of dead and maintaining good hygiene and clean environment is also important.

Interdiction

Ebolaviruses are negative stranded RNA viruses that belong to the Filoviridae family and are endemic to regions of west and equatorial Africa. These public health pathogens are primarily transmitted by human-to-human contact with infected body fluids and corpses and causes severe and acute systemic disease with high mortality. Ebolaviruses have substantial epidemic potential, as shown by the 2013–16 West African outbreak. This outbreak was unprecedented

in scale, with more than 28 000 confirmed cases and 11 000 deaths. Its economic impact on the West African region was crippling. This outbreak also showed that, in a context of resource-poor public infrastructure, a rapid transition from primarily affected rural villages to the urban areas of larger cities can occur. With considerable efforts from the affected countries and with international support, the outbreak was ultimately controlled. This outbreak was also unique therein it triggered the initiation and implementation of comprehensive research programmes into ebolavirus-related pathology, which has led to major scientific advances. This Seminar reviews available knowledge about the epidemiology, disease manifestation, pathophysiology, case management, and community control of those diseases.

Ebola disease may be a severe, often fatal illness in humans. The virus is transmitted to people from wild animals then spreads within the human population through human-to-human transmission. The typical Ebola case deathrate is around 50%. Early supportive care with rehydration, symptomatic treatment improves survival. Five species of Ebola virus are identified. Among them, Bundibugyo ebolavirus, Zaire ebolavirus, and Sudan ebolavirus are related to large outbreaks in Africa.

The time period is 2 - 21 days. Human aren't infectious until they develop symptoms. Initial symptoms are sudden onset of fever and fatigue, muscle pain, headache and pharyngitis. Usually followed by: vomiting, diarrhoea, rash, impaired kidney and liver function, spontaneous bleeding internally and externally (in some cases).

Symptoms are non-specific; clinical diagnosis could also be difficult. Medical diagnosis includes other viral haemorrhagic fevers, yellow jack, malaria, typhoid, shigellosis, and other viral and bacterial diseases. Patient history is important and will include: Contact with a dead or sick animal; Contact with a suspected, probable or confirmed Ebola patient.

Definitive diagnosis requires testing: polymerase chain reaction (RT-PCR) assay IgG and IgM antibodies with enzyme-linked immunosorbent assay (ELISA) antigen detection tests virus isolation by cell culture.

Reducing the danger of human-to-human transmission from direct or close contact with people with Ebola symptoms, particularly with their bodily fluids. Gloves and appropriate personal protective equipment should be worn when taking care of ill patients reception. Regular hand washing is required after visiting patients in hospital, also as after taking care of patients reception. Organize safe and dignified burials for people that may have died of Ebola virus Disease

Ebolaviruses belong to the genus Ebolavirus of the family Filoviridae within the order Mononegavirales, viruses whose genome consists of one strand of RNA with negative polarity. The genus Ebolavirus contains five species with the taxonomic designations: Bundibugyo ebolavirus (Bundibugyo virus), Reston ebolavirus (Reston virus), Sudan ebolavirus (Sudan virus), Tai Forest ebolavirus (Tai Forest virus), and Zaire ebolavirus (Ebola virus). This taxonomy, revised in 2011, is emphasised because nearly identical terms have different meanings: Ebolavirus and Zaire ebolavirus ask taxonomic classifications, whereas Ebola virus may be a virus. More information about the properties of the virus are often found within the appendix.