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MOUNT LEBANON HOSPITAL
GHARIOS MEDICAL CENTER

EBOLA VIRUS: What You Need to Know

Ebola virus disease (EVD), Ebola hemorrhagic fever (EHF), or simply Ebola is a disease of humans and other primates caused by an ebola virus. Symptoms start two days to three weeks after contracting the virus, with a fever, sore throat, muscle pain and headaches. Typically, vomiting, diarrhea and rash follow, along with decreased functioning of the liver and kidneys. Around this time, affected people may begin to bleed both within the body and externally.

Ebola first appeared in 1976 in 2 simultaneous outbreaks, in Nzara, Sudan, and in Yambuku, Democratic Republic of Congo. The latter was in a village situated near the Ebola River, from which the disease takes its name.

Genus Ebolavirus is 1 of 3 members of the Filoviridae family (filovirus), along with genus Marburgvirus and genus Cuevavirus. Genus Ebolavirus comprises 5 distinct species:

- Bundibugyo ebolavirus (BDBV)
- Zaire ebolavirus (EBOV)
- Reston ebolavirus (RESTV)
- Sudan ebolavirus (SUDV)
- Tai Forest ebolavirus (TAFV).

BDBV, EBOV, and SUDV have been associated with large EVD outbreaks in Africa, whereas RESTV and TAFV have not. The RESTV species, found in Philippines and the People’s Republic of China, can infect humans, but no illness or death in humans from this species has been reported to date.

Key Facts

- Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a severe, often fatal illness in humans.
- EVD outbreaks have a case fatality rate of up to 90%.
- EVD outbreaks occur primarily in remote villages in Central and West Africa, near tropical rainforests.
- The virus is transmitted to people from wild animals and spreads in the human population through human-to-human

Transmission

Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals. In Africa, infection has been documented through the handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead or in the rainforest.

Ebola then spreads in the community through human-to-human transmission, with infection resulting from direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and indirect contact with environments contaminated with such fluids. Burial ceremonies in which mourners have direct contact with the body of the deceased person can also play a role in the transmission of Ebola. Men who have recovered from the disease can still transmit the virus through their semen for up to 7 weeks after recovery from illness.

Health-care workers have frequently been infected while treating patients with suspected or confirmed EVD. This has occurred through close contact with patients when infection control precautions are not strictly practiced.

Among workers in contact with monkeys or pigs infected with Reston ebolavirus, several infections have been documented in people who were clinically asymptomatic. Thus, RESTV appears less capable of causing disease in humans than other Ebola species.

However, the only available evidence available comes from healthy adult males. It would be premature to extrapolate the health effects of the virus to all population groups, such as immuno-compromised persons, persons with underlying medical conditions, pregnant women and children. More studies of RESTV are needed before definitive conclusions can be drawn about the pathogenicity and virulence of this virus in humans.

Signs and Symptoms

EVD is a severe acute viral illness often characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting,



diarrhoea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding. Laboratory findings include low white blood cell and platelet counts and elevated liver enzymes.

People are infectious as long as their blood and secretions contain the virus. Ebola virus was isolated from semen 61 days after onset of illness in a man who was infected in a laboratory.

The incubation period, that is, the time interval from infection with the virus to onset of symptoms is 2 to 21 days.

Diagnosis

Other diseases that should be ruled out before a diagnosis of EVD can be made include: malaria, typhoid fever, shigellosis, cholera, leptospirosis, plague, rickettsiosis, relapsing fever, meningitis, hepatitis and other viral haemorrhagic fevers.

Ebola virus infections can be diagnosed definitively in a laboratory through several types of tests:

- antibody-capture enzyme-linked immunosorbent assay (ELISA)
- antigen detection tests

- serum neutralization test
- reverse transcriptase polymerase chain reaction (RT-PCR) assay
- electron microscopy
- virus isolation by cell culture.

Samples from patients are an extreme biohazard risk; testing should be conducted under maximum biological containment conditions.

Vaccine and Treatment

No licensed vaccine for EVD is available. Several vaccines are being tested, but none are available for clinical use.

Severely ill patients require intensive supportive care. Patients are frequently dehydrated and require oral rehydration with solutions containing electrolytes or intravenous fluids.

No specific treatment is available. New drug therapies are being evaluated.

References

- "Ebola virus disease Fact sheet N°103". World Health Organization. April 2014.



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