

Ebola: A Hazardous Disease

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Abstract: Ebola, previously known as Ebola hemorrhagic fever, is a rare and deadly disease caused by infection with one of the Ebola virus strains. Ebola can cause disease in humans and nonhuman primates (monkeys, gorillas, and chimpanzees). Ebola virus disease is originated in Africa, where there is currently an outbreak. But for people living in countries outside Africa, it continues to be a very low threat. The current outbreak of the Ebola virus mainly affects three countries in West Africa: Guinea, Liberia and Sierra Leone. Around 14,413 cases and 5,177 deaths have been reported by the World Health Organization. This is the largest known outbreak of Ebola.

Keywords: Ebola hemorrhagic fever, Ebola virus disease, primates.

I. INTRODUCTION

The Ebola virus causes an acute, serious illness which is often fatal if untreated. Ebola virus disease (EVD) first appeared in 1976 in 2 simultaneous outbreaks, one in Nzara, Sudan, and the other in Yambuku, Democratic Republic of Congo. The latter occurred in a village near the Ebola River, from which the disease takes its name.

The current outbreak in West Africa, (first cases notified in March 2014), is the largest and most complex Ebola outbreak since the Ebola virus was first discovered in 1976. There have been more cases and deaths in this outbreak than all others combined. It has also spread between countries starting in Guinea then spreading across land borders to Sierra Leone and Liberia, by air (1 traveller only) to Nigeria, and by land (1 traveller) to Senegal.

Epidemiological factors

- ❖ Agent-ebola virus belongs to the family called filoviridae
- ❖ Source of infection- fruit bat or primate (apes and monkeys).
- ❖ infective material-blood, secretion, organ & other bodily fluid of infected animal & human.
- ❖ Incubation period-2 to 21 days

Mode of transmission

Through infected animal: infection has been documented through the handling of infected chimpanzees, gorillas, fruit bats & monkeys, found ill or dead.

- ❖ Man who recovered from disease: transmit the virus through semen for up to 7 wks.
- ❖ Many peoples got infected during burial rituals as dead peoples are infectious as long as their blood & secretion contain the virus.
- ❖ Through human-to-human transmission i.e.
- ❖ (a) from direct contact : (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people.
- ❖ (b) indirect contact : environments contaminated with disposal of such fluids.

Signs & symptoms

Stage 1

- 🌿 Sudden onset of fever

- 🟢 Intense weakness
- 🟢 Muscle pain, abdominal pain, joint pain, back pain.
- 🟢 Headache, conjunctivitis
- 🟢 Diarrhoea, vomiting, nausea,
- 🟢 Rash all over the body except in face.

Stage 2

- 🟢 Hemorrhage
- 🟢 Neuropsychiatric abnormalities
- 🟢 Anuria (absence of urine formation)
- 🟢 Hiccups
- 🟢 Tachycardia (rapid breathing)

Stage 3

- 🟢 Internal and external bleeding
- 🟢 impaired liver function
- 🟢 Sore throat
- 🟢 Ocular pain
- 🟢 Photophobia
- 🟢 Hearing loss

Diagnosis

Ebola virus infections can be diagnosed definitively in a laboratory through blood tests i.e.

*for serology (PCR) (2-4ml in serum separator tube) &

*for viral culture (ELISA) (2-4ml in tube containing EDTA).

*some laboratory test:

- Plc & wbc decreased,
- Prolonged prothrombin time & bleeding time.
- Repeat laboratory test on 4th day of onset of fever.

Treatment and vaccines

Supportive care-rehydration with oral or intravenous fluids- and treatment of specific symptoms, improves survival. There is as yet no proven treatment available for EVD. However, a range of potential treatments including blood products, immune therapies and drug therapies are currently being evaluated. No licensed vaccines are available yet, but 2 potential vaccines are undergoing human safety testing.

II. PREVENTION AND CONTROL

Good outbreak control relies on applying a package of interventions, namely case management, surveillance and contact tracing, a good laboratory service, safe burials and social mobilisation. Community engagement is key to successfully controlling outbreaks. Raising awareness of risk factors for Ebola infection and protective measures that individuals can take is an effective way to reduce human transmission. Risk reduction messaging should focus on several factors:

- **Reducing the risk of wildlife-to-human transmission** from contact with infected fruit bats or monkeys/apes and the consumption of their raw meat. Animals should be handled with gloves and other appropriate protective clothing. Animal products (blood and meat) should be thoroughly cooked before consumption.
- **Reducing the risk 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 at home. Regular hand washing is required after visiting patients in hospital, as well as after taking care of patients at home.

- **Outbreak containment measures** including prompt and safe burial of the dead, identifying people who may have been in contact with someone infected with ebola, monitoring the health of contacts for 21 days, the importance of separating the healthy from the sick to prevent further spread, the importance of good hygiene and maintaining a clean environment.

Infection Prevention & Control in Healthcare Settings

- Human-to-human transmission of the ebola virus is primarily associated with direct or indirect contact with blood and body fluids.
- Transmission to health care workers has been reported.
- health-care workers apply standard precautions with all patients regardless of the diagnosis at work all times:
- Fluid resistant ,longsleeved,cuffed gown
- Wear sterile gloves
- Full face protection
- Surgical or procedure mask
- Regular hand washing is required after visiting patients, as well as after taking care of patients in ward.

Infection Prevention & Control

In addition to standard precautions, other infection control measures are:

- Isolating infected individual
- Proper sterilization & disposal of all equipment
- Burials must be done correctly.

III. RECOMMENDATIONS

Precautions

- ❖ Use standard precautions
- ❖ Routine hand washing
- ❖ Handle and dispose of sharp instruments safely
- ❖ Cook meat thoroughly
- ❖ Environment cleaning

Important message

- ❖ Replacing bad health habits with good ones can help keep your immune system healthy.
- ❖ Don't smoke
- ❖ Maintain a healthy weight
- ❖ Avoid infection by hand wash.
- ❖ Eating some pretty surprising nutrients. Adopt healthy-living strategies like
- ❖ Eat a diet high in fruits, vegetables and whole grains.
- Control your blood pressure.
- Get adequate sleep.
- Take steps to avoid infection, such as washing hands during cooking meats thoroughly.
- Get regular medical screening tests for people in your age group and risk category.

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