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EBOLA VIRUS DISEASE

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ABSTRACT

The first vaccine designed to prevent infection with the lethal Ebola virus has passed initial safety tests in humans and has shown promising signs that it may indeed protect people from contracting the disease. Ebola viruses are highly lethal filo viruses that cause hemorrhagic fever in humans and non-human primates. With no approved treatments or preventatives, the development of an anti-ebola virus therapy to protect against natural infections and potential weaponization is an urgent global health need. In July 2014, as the Ebola virus disease (Ebola) epidemic expanded in Guinea, Liberia, and Sierra Leone, an air traveler brought Ebola to Nigeria and two American health care workers in West Africa were diagnosed with Ebola and later medically evacuated to a U.S. hospital. Ebola virus disease (Ebola) is a multisystem disease caused by a virus of the genus Ebola virus. In late March 2014, Ebola cases were described in Liberia, with epicenters in Lofa County and later in Montserrado County. While information about case burden and health care infrastructure was available for the two epicenters, little information was available about remote counties in southeastern Liberia.

KEYWORDS: Ebola virus.

INTRODUCTION

The name of the Ebola virus which is making the headlines today originates from the Ebola River in the Congo. The first time the disease appeared was in August 1976. Patient zero was a schoolteacher who had been touring along the Ebola River just days before he was identified with what become known as the Ebola virus. This was the start of a virus which has an average fatality rate of 83%.Up to 2013, the World Health Organization recorded a total of

approximately 2,000 Ebola cases in 24 outbreaks, all of them in Africa. Original scientific papers used various different names for the disease including haemorrhagic fever and Marburg-like virus.

 Coming into contact with the blood, secretions, organs or other bodily fluids of an infected person.
 Healthcare workers may contract the disease through transmission as well through contact with infected bodily fluids.
 Handling the meat from infected animals.
 Contact with the bodily fluids of an infected person who has passed away**.**

RISK FACTORS

 Travel to Africa

You're at increased risk if you visit or work in areas where Ebola virus or Marburg virus outbreaks have occurred.

 Conduct animal research

People are more likely to contract the Ebola or Marburg virus if they conduct animal research with monkeys imported from Africa or the Philippines.

 Provide medical or personal care

Family members are often infected as they care for sick relatives. Medical personnel also can be infected if they don't use protective gear, such as surgical masks and gloves.

 people for burial

The bodies of people who have died of Ebola or Marburg hemorrhagic fever are still contagious. Helping prepare these bodies for burial can increase your risk of developing the disease.

SYMPTOMS

The incubation period (or the time between when the actual infection takes place to the time when a person sees symptoms of this condition) for this disease is about one week. After this period a person will commonly see the signs that are considered as ‘early symptoms’.

- Fever
- Rashes
- Headache

- Nausea
- Vomiting
- Stomach pain

Apart from that a person may also experience symptoms like pain in the lower back, arthritis like pain all over the body, diarrhea and a sore throat.

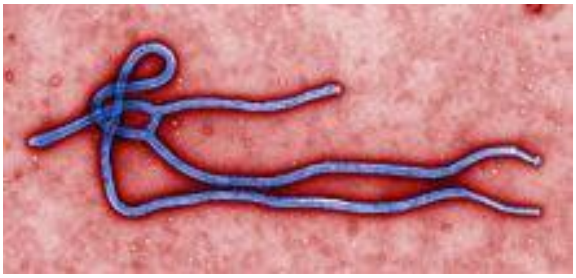
- Bleeding from the mouth, ears, nose and ears.
- Increased sensitivity to pain on the skin,
- Genital swelling
- Conjunctivitis
- Rashes all over the body,
- And reddening of the roof of the mouth.

DIAGNOSIS

In order to confirm the diagnosis he/she may prescribe tests like -

- CBC (studies (a test to check for the amount of time a person's blood needs to clot)
- Viral antigen testing (Complete Blood Count)
- Coagulation
- a test to check for the presence of the viral antigen)
- Liver function test

TREATMENT



Electron micrograph of Ebolo virus virion

'There is no definitive treatment, and common anti-viral therapies do not work on the Ebola virus. Therefore the goal of the treatment is to treat the symptoms and prevent secondary infections or complications like pneumonia and liver failure.'

PROGNOSIS

According to the WHO reports, on an average, 80% of the people infected with this virus do die. Their death is usually due to a drop in their blood pressure and failure of organs.

PREVENTION

'There aren't any vaccinations available as of now, so basic hygiene is of importance and a must be followed in order to prevent the onset of the condition. Simple activities like washing your hands well, drinking water from a clean source, maintaining general hygiene and cooking your meat well, can all serve as precautionary measures.' Apart from that people should avoid crowded places, or those that are known to have an outbreak. It is also important that if they notice any early symptoms, they should visit a doctor immediately.

VACCINATION

There is not yet a licensed Ebola vaccine for humans; however, a vaccine has been shown to be effective in monkeys. If this vaccine proves similarly effective in humans, it may one day allow scientists to quickly contain Ebola outbreaks. The trial vaccine is similar to other investigational vaccines that hold promise for controlling such diseases as AIDS, influenza, malaria, and hepatitis.

Based on recent research findings, a single shot of a fast-acting, experimental vaccine successfully protected monkeys from the deadly Ebola virus after only one month. If this vaccine proves similarly effective in humans, it may one day allow scientists to quickly contain outbreaks with ring vaccination, which is the same strategy that was successfully used against smallpox, according to a study published in the journal *Nature.*

This experimental vaccine does not contain any infectious material from the Ebola virus. The candidate Ebola vaccine is synthesized using modified, inactivated genes from the virus. This gives the immune system information about viral structures so that it can mount a rapid defense should the real virus ever be encountered.

Phase I clinical trials involve the administration of the vaccine to healthy human subjects to evaluate the immune response, identify any side effects and determine the appropriate dosage. As of October, 2014, such trials had begun for the replication-deficient cAd3-EBO Z vaccine, and for the replication-competent VSV-EBOV vaccine.

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