

Lassa fever.... What you need to know.

His posting letter to Borno state was received with mixed feelings in the family. Though happy that their son can now put on the highly coveted khaki trouser and shirt like every other graduate in the country, the fear of having to go to a very distant land scared his parents. Stephen, the only son of his parents could not but persuade his parents to have faith in God since the NYSC had assured all corps members of adequate security. He set out for the journey that was to change his perspective about the country and the world. At the camp, the news broke out that there was a killer disease in town, a disease that had killed more health workers than any other disease in the country as at that time. Lassa fever.

Up until that time, Stephen had never heard the word before. He wondered what kind of disease would have made the directors at the federal ministry of health and national orientation agency to have risk their precious lives by coming to the camp to give lectures about the disease irrespective of the Boko Haram insurgency.

They were warned to avoid eating food that had been exposed to rat infestation. As from that moment, he knew he would have to live a rodent free life to be free from the disease. When he saw the footage of how people bled to death from the disease, he pledged to be more careful in the future. He promised to be a crusader of a rat free environment. He didn't know how to do this, but he just had to start from somewhere. Maybe his family would be a good place to start after all, charity begins at home, he thought.

He picked up his phone, dialed his parents' number and counseled them about the disease. Eureka, an idea was born. He would start the project as his NYSC personal cds, and who knows, he might just win an award on it.

Thus, when a year later he was being decorated by the president at the presidential villa as the best corps member in the country for the year, he looked over to his mum who was sitting in the crowd with tears rolling down her cheek. Then he remembered her immortal words since he was a child that "dreams always come true after all".

Introduction

Lassa fever was first documented in Nigeria, in Lassa village of Borno state. One wonders why Borno state is usually home to a lot of things. The disease is highly contagious and spread like wild fire.

Lassa fever is a hemorrhagic disease. This is so called because at some point in the disease the patient bleeds through the orifices; mouth, nose, urethra, anus etc. This disease caused about 48 deaths in the country during the last outbreak among the people diagnosed. Two doctors together with four nurses were among the dead.

The outbreak which occurred in 12 states of the federation cost the government about 500million naira to curtail.

HISTORY

The disease was discovered in the lassa village of Borno state Nigeria by a team led by Dr Jordi Casals-Ariet in 1969 after two missionary nurses died of it.

EPIDEMIOLOGY

The number of Lassa virus infections per year in West Africa has been roughly estimated at 100,000 to 300,000, with at least 5,000 deaths yearly. The disease is predominant in Nigeria, Guinea, Congo and Liberia. However, other West Africa countries too may be affected. The overall case-fatality rate is 1%, up to 15% among hospitalized

patients. Death usually occurs within 14 days of onset in fatal cases. The disease is especially severe late in pregnancy, with maternal death and/or fetal loss occurring in greater than 80% of cases during the third trimester.

Lassa fever occurs in all age groups and in both men and women. Persons at greatest risk are those living in rural areas where *Mastomys* are usually found, especially in areas of poor sanitation or crowded living conditions. Health care workers are at risk if proper barrier nursing and infection control practices are not maintained.

Incidence is highest during dry season but transmission occurs all year round.

MODE OF TRANSMISSION

A multi-mammate rat by the name *Mastomys Natalensis* is the vector responsible for the transmission of the disease. This multi breast rat does not die when infected with the disease; rather it carries it around and passes it out in the urine, faeces and saliva. Therefore, when this multi-mammate rat urinated or defecated on food items, the items becomes infected. When the rat eats a food items, it transfers the virus from its saliva to the food item, making any individual that eats the food to be at risk.

The other mode of transmission is through human contact. When an infected person comes in close contact with an uninfected person, the virus can be transmitted from the body fluids to the uninfected person. The body secretions include saliva, blood, semen, sweat, urine, and faeces. Therefore health workers should be careful while taking samples from patients as well as when administering drugs.

However, there is no evidence as at now to support airborne transmission.

Clinical symptoms.

After an incubation period of six to twenty-one days, an acute illness with multi-organ involvement develops. Non-specific symptoms include fever, facial swelling, and muscle fatigue, as well as conjunctivitis and mucosal bleeding. The other symptoms arising from the affected organs are:

- Gastrointestinal tract
 - Nausea
 - Vomiting (bloody)
 - Diarrhea (bloody)
 - Stomach ache
 - Constipation
 - Dysphagia (difficulty swallowing)
 - Hepatitis
- Cardiovascular system
 - Pericarditis
 - Hypertension
 - Hypotension
 - Tachycardia (abnormally high heart rate)
- Respiratory tract
 - Cough
 - Chest pain
 - Dyspnoea (difficulty in breathing)
 - Pharyngitis (sore throat)
 - Pleuritis
- Nervous system
 - Encephalitis

- Meningitis
- Unilateral or bilateral hearing deficit
- Seizures

Clinically, Lassa fever infections are difficult to distinguish from other viral hemorrhagic fevers such as Ebola and Marburg, and from more common febrile illnesses such as malaria.

The virus is excreted in urine for three to nine weeks and in semen for three months. The implication of this is that patients that have recovered from the illness must not have sex for three months and should still be handled with care as they can still transmit the disease.

LABORATORY INVESTIGATION

There is a range of laboratory investigations that are performed to diagnose the disease and assess its course and complications. ELISA test for antigen and IgM antibodies gives 88% sensitivity and 90% specificity for the presence of the infection. Virus isolation technique can be done in some specific laboratory, including Eruwa in Edo State of Nigeria. Other laboratory findings in Lassa fever include lymphopenia (low white blood cell count), thrombocytopenia (low platelets), and elevated aspartate aminotransferase (AST) levels in the blood.

Treatments

All patients suffering from the disease should be treated in an isolated ward with proper waste disposal technique.

The only potent medication approved so far is antivirus called Ribavirin. Ribavirin, when given early in the disease, first week of illness specifically, has been found to reduce mortality and hospital stay. Because most of the deaths that occur are as a result of shock from excessive bleeding, it is necessary to maintain the patients on intravenous fluid. When necessary, whole blood transfusion should be given.

When Lassa fever infects pregnant women late in their third trimester, it is necessary to induce delivery for the mother to have a good chance of survival. This is because the virus has an affinity for the placenta and other highly vascular tissues. The fetus has only a one in ten chance of survival no matter what course of action is taken; hence focus is always on saving the life of the mother. Following delivery, women should receive the same treatment as other Lassa fever patients.

Prevention

Prevention of Lassa fever in the community centers on promoting good "community hygiene" to discourage rodents from entering homes. Effective measures include storing grain and other foodstuffs in rodent-proof containers, disposing of garbage far from the home, maintaining clean households and keeping cats. Because *Mastomys* are so abundant in endemic areas, it is not possible to completely eliminate them from the environment.

Family members and health care workers should always be careful to avoid contact with blood and body fluids while caring for sick persons. Routine barrier nursing precautions probably protect against transmission of Lassa virus in most circumstances. However, for added safety, patients suspected to have Lassa fever should be cared for under specific "isolation precautions," which include the wearing of protective clothing such as masks, gloves, gowns, and face shields, and the systematic sterilization of contaminated equipment.

Prognosis

About 15%-20% of hospitalized Lassa fever patients will die from the illness. It is estimated that the overall mortality rate is 1%, however during epidemics mortality can climb as high as 50%. The mortality rate is greater than 80% when it occurs in pregnant women during their third trimester; fetal death also occurs in nearly all those cases. Abortion decreases the risk of death to the mother.

Thanks to treatment with Ribavirin, fatality rates have continued to decline. Work on a vaccine is continuing, with multiple approaches showing positive results in animal trials.

Conclusion

It is important for people to maintain proper hygiene as this will go a long way to prevent rats from co habiting with man. People should avoid eating food that has been contaminated with rat feaces and urine. Health workers should have a high index of suspension so as to identify the disease early.

In case of any emergency call the health centre hotline on

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