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## **A Review on the Outbreak and Awareness Level about Lassa Fever in Nigeria**

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### **ABSTRACT**

Lassa fever is an acute viral hemorrhagic illness first reported in 1969 in Nigeria. Hitherto, some outbreaks have been reported in some parts of the country which is a cause for concern about the level of awareness of the disease among the people. The present paper gave an account of the update on the outbreaks and level of awareness about Lassa fever among the people in Nigeria. It was revealed that some parts of the country are moderately sensitized about the disease. Some rural communities in the country do not have considerable information about the disease. Generally, it is expedient that level of awareness should be stepped up in the country in order to forestall the disease outbreak in the future.

**Keywords:** Lassa fever, zoonotic disease, outbreaks, awareness, misconceptions

### **INTRODUCTION**

One of the problems caused by rodent pest species is the fact that some are carriers of zoonotic diseases. Zoonotic diseases are diseases that can be transmitted from animals to humans (Aplin *et al.*, 2003; Buckle and Smith, 2015). One of such diseases is Lassa fever. Lassa fever is an acute viral hemorrhagic (excessive bleeding) fever caused by arenavirus. The vector of the virus has been reported to be natal multimammate mouse (*Mastomys natalensis*). Transmission to humans is through contact with food, household items contaminated with infected rodents or contaminated persons. Some of the symptoms of Lassa fever are sore throat, fever, headache, and chest pain. In severe cases, there could be hemorrhage from ears, eyes, nose, mouth, and other body openings. Incidentally, the first case of Lassa fever was reported in 1969 in the town called Lassa in Borno state, Nigeria (Gunther *et al.*, 2006). The disease occurs throughout the

year but is more common during the dry season.

#### **How the Lassa fever is transmitted**

Lassa fever is spread through the following means:

- Eating food or drinking water contaminated with urine, feces, saliva or blood of rats
- Direct contact with urine, feces, saliva or blood of rats
- Contact with beddings and household materials contaminated with urine, feces, saliva or blood of rats or body fluids of infected persons
- Inhalation of air contaminated with tiny particles of urine, feces, saliva or blood of rats during sweeping or cleaning activities
- Person-to-person through contact with blood, body fluid secretion, or semen of an infected person

### **People at risk of contracting Lassa fever**

- People of all age groups who come in contact with urine, feces, saliva or blood of rats or infected person
- People living in dirty environments which support the habitat for rodents
- Family members who are taking care of persons infected with Lassa fever
- Doctors, nurses or other health workers, providing direct patient care
- Hospital staff who clean and disinfect contaminated surfaces and materials
- Laboratory staff who handle blood samples from the suspected Lassa fever cases
- Medical or support staff who prepare or handle the dead bodies of Lassa fever patients

### **Incubation period of Lassa fever**

Signs and symptoms of fever appear 6 to 21 days after contact with Lassa fever virus

The signs and symptoms include fever, sore throat, vomiting, diarrhea, back pain, cough, chest pain, stomach pain, restlessness, swelling of the face, bleeding through body openings (nose, ears, eyes, mouth etc).

### **Common complications of Lassa fever**

- Hearing loss/deafness
- Infection/inflammation of the brain (encephalitis)
- Seizures
- Spontaneous abortion
- Pleural effusion
  - Lower blood pressure (hypotension)

### **Lassa fever outbreak in Nigeria**

Since it was first reported in 1969 in Nigeria, the disease outbreaks have been reported in various parts of Nigeria with the worst outbreak recorded in 2012 where 623 cases including 70 deaths were reported from 19 out of 36 states including Federal Capital Territory (Nwonwu *et al.*, 2018; Gunther *et al.*, 2006).

In Nigeria, the outbreak of Lassa fever is reported to have been recorded in 18 states of the countries which include Anambra, Bauchi, Benue, Nasarawa, Ebonyi, Edo, Ekiti, Federal Capital Territory, Delta, Kogi, Gombe, Ondo, Plateau, Rivers, Taraba, Osun, Lagos and Imo. About 1081 people have been reportedly affected while 317 were the confirmed cases and 8 were probable cases. seventy-two (72) were the recorded mortality (WHO, 2018).

### **Recently confirmed Lassa fever cases**

In Nigeria, at least two people died from Lassa fever in the first week of 2022. It was reported by Nigerian Centre for Disease Control (NCDC) that as of week one of 2022 between January 3 and 9, infections as a result of Lassa fever increased from 28 cases in week 52 of 2021 to 48 cases. It was stated that the disease center noted the confirmed cases were recorded across 20 Local Government Areas in 10 states of the federation.

Nigeria Centre for Disease control (NCDC) reported a total of 894 cases since the beginning of the year 2022. Of all the reported cases, 168 were confirmed dead with a case fatality of 18.8% which is lower than the case fatality rate recorded to be 23.3% for the same period in 2021. It also depicted that there are 6392 suspected cases of the infection recorded by the NCDC as at

week 33 of the year across 101 local Government areas in 25 states. The report has it that 70% of the confirmed cases were accounted for by three out of the affected states which include Ondo, Edo, and Bauchi with 31%, 26% and 13% respectively.

In addition, the age group recorded to be predominantly affected is 21-30 years within the age range between 0 to 90 years. The male-to-female ratio for confirmed cases is 1:0.8. The number of suspected cases has increased compared to that reported for the same period in 2021. However, no new healthcare worker was reportedly affected in week 33 of the year 2022. It has been reported that 63 healthcare workers have been infected by the disease.

#### **Levels of awareness of people about Lassa fever and the virus**

It was reported by Ilesanmi *et al.* (2015) who conducted a study on awareness of Lassa fever in a rural community in South west Nigeria, that the majority of the respondents had not previously heard of Lassa fever in the rural community. Similar study conducted by Nwonwu *et al.* (2018) among traders in Izzi community in South-east Nigeria also reported that overall knowledge about Lassa fever among the traders was poor. It was further reported that majority of the traders usually eat rat's meat indiscriminately. This means that people should be provided with adequate information on the causes, mode of transmission and prevention of the disease. In another study by Awosanya (2018) on post-epidemic awareness and knowledge of Lassa fever among residents in affected community in Ibadan, South western Nigeria, it was reported that there was moderately high level of awareness in the affected community.

In Sokoto, North western Nigeria, Fidelis and Olajolumo (2018) conducted a hospital survey to assess the level of knowledge and

universal cross-infection control practices against Lassa fever among health workers. It was reported that there was a very low level of knowledge about Lassa fever and very poor universal cross infection control practice against Lassa fever among the health workers in the city. A study by Uduak (2018) was also carried out study on awareness of Lassa fever virus among shop owners in four community markets in a military barrack in Kaduna, North western Nigeria. He reported that majority of the respondent had a good knowledge, positive attitude and practice towards Lassa fever virus. Tobin *et al.* (2013) in their study on the assessment of knowledge and attitude towards Lassa fever among primary care providers in an endemic suburban community of Edo state South-south, Nigeria, reported that majority of the respondents had previously heard about Lassa fever.

In Ile-Ife, Osun State, a study conducted to evaluate the attitude, knowledge and practices towards prevention and control of Lassa fever reported 51% had poor practice toward Lassa fever, 76% had inadequate knowledge, 54% had negative attitude and 59% have heard of the disease through radio broadcast (Oloowokere *et al.*, 2017).

#### **Seasonal spread of Lassa fever**

About two-third of the 36 states in Nigeria are endemic to Lassa fever. Apparently, there is a seasonal pattern in the epidemic of Lassa fever in Nigeria, with most cases occurring in the dry season (Awosanya, 2018).

#### **Some misconceptions about Lassa fever that may give rise to its increased epidemiology**

Based on the interaction with some people, there are some perceived misconceptions among the people in some parts of Nigeria which are highlighted as follows:

- Quite a number of people in Nigeria think that all rodent pest species cause Lassa fever. This is borne out of the fact that *Mastomys natalensis* which is the vector of the virus that causes Lassa fever are not easily recognisable. While there is wisdom in ensuring that any form of rodent species or their droppings and urines should not be allowed to contaminate the food and/or household items, it is also expedient to make efforts in recognising the particular rodent species so that timely and effective intervention can be embarked upon by the people where there is high population of *Mastomys natalensis*.

- Some people believe that *Matomys natalensis* can only be found in the field situation and not in the house. It should be noted that multimammate mouse is more of commensal rodent than field rodent.

- Some people mistake the symptoms presented by the Lassa fever to be those of malaria in most cases because the duo present similar symptoms. The case becomes more worsened when the patient embarks on self-medication by treating malaria instead of going for proper medical examination and treatment. This is highly predominant among less enlightened people in both rural and urban areas in Nigeria.

### **Prevention of Lassa fever**

Lassa fever is a preventable disease. It can be prevented through the following ways:

- Always wash hands with soap
- Use of traps or rat gums to get rid of rats in the houses
- Always avoid handling dead or live rats with bare hands
- Always avoid eating food/fruit eaten by rats
- Blocking of all holes in the house
- Always store food in covered container
- Drying of food on the ground or by the road side should be avoided

- All foods should be properly cooked before eating

- Cleaning of home and ensuring environmental sanitation

- Direct contact with someone currently sick with lassa fever should be avoided

- Waste should be properly disposed in covered dustbin

- Self-medication should be avoided

### **World Health Organisation Advice (WHO, 2015)**

Lassa fever prevention depends on community assignation and encouraging hygienic conditions to discourage rodents from entering homes. It is expedient that health care workers should ensure implementation of prevention and control measures when caring for patients to avoid nosocomial infections.

Diseases know no boundary. Therefore, people traveling from Lassa fever endemic areas can spread the disease to other countries, although this infrequently happens. Lassa fever diagnosis should be well-thought-out in febrile patients coming from West Africa where Lassa fever is endemic. Patients suspected to have Lassa fever by the health care providers should instantly contact local and national experts for guidance and to arrange for laboratory testing.

### **CONCLUSION**

While the level of awareness about Lassa fever is moderately high in some parts of the country, quite a number of other parts of the country still have to be equipped with information about the causes, symptoms, prevention, and control of Lassa fever especially in the rural communities in Nigeria. Generally, it is expedient that level of awareness should be stepped up in the country so as to prevent further disease outbreak in future.

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