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REVIEW ARTICLE

Lassa Fever

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ABSTRACT

To Focus on LASSA VIRUS about it's prevalence and it's treatment LASSA fever is an acute Viral Haemorrhagic illness of 2-21 days duration that Occurs in West Africa. Though first described in 1950's the virus causing the Disease was identified until 1969. The virus is a single strand RNA virus belonging to the virus family Arenaviridae. It is transmitted from Mastomys Rats. LASSA virus may also be spread between humans through direct with blood. The occurrence of the virus was reported in Nigeria including 72 deaths have Been reported worldwide. Notably recent human-to-human 'super spreading' Of LASSA virus in hospitals of Nigeria has raised a major global health concern. Treatment including Antiviral drug RIBAVIRIN seems to be effective. Prevention of LASSA fever relies on promoting good community hygiene to discourage Rodants from entering homes.

Key word: Lassa Fever, Lassa Virus, Arenaviridae

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1. Introduction

Lassa fever is a zoonotic virus infection ^[1,2]. The disease causes an annual wide spread of morbidity and mortality in Africa. It can be imported by travelers, possible importation of Lassa fever, and the potential use of Lassa fever virus as an agent of biological weapon or bioterrorism ^[3,4]. Clinicians in Nigeria and other West African countries are to be vigilant and familiar with the basic characteristic of

this disease ^[5,6,7]. The virus resides in either animal. The disease is restricted to areas where the host species live. It's estimated that annually about 15 million contacts the disease with the annual number of illness estimated at three million and annual death rate put at 58,330 (WHO). As at January 14th, 2016, 13 states are affected or have reported cases of Lassa fever in Nigeria ^[8].

History: The modern-day Lassa virus strain probably originated at least 1,060 years ago in Nigeria and then spread to Sierra Leone as recently as 150 years ago. The lineage is most likely much older but how long can not be calculated for lack of data. Though it was first described in 1950's, the virus causing Lassa fever or Lassa hemorrhagic fever was not identified until 1969 when two missionary nurses (Laura wine and Lily Pinneo) died in Nigeria in a town called Lassa in Bornu State^[9].

Causes: It's caused by Lassa virus which belongs to the group of Arenaviridae. All hemorrhagic fever is caused by four major group of viruses^[10].

Virology: Lassa fever is caused by a single-stranded RNA virus and its disseminated systemic primary virus infection. The virus gains entry into the host cell using the cell-surface receptor, the ALPHADYSTROGLYCAN (ALPHIA – DG). In the cell, it's able to replicate and cause immune suppression^[11].

Vector: The natural host for the virus is the multimammate rats (*mastomys natalensis*) which breed frequently and are distributed widely throughout West, Central, and East Africa. They are the common rodents in tropical Africa, and they are found predominately in rural areas and dwellings more often than surrounding country side. It's found in urban settings where the level of hygiene is low^[12].

Mode of Transmission

- Humans become infected with Lassa virus from exposure to the droppings of infected mastomy rats.
- Through contacts with contaminated food, drinks, and items within or around human, e.g. eating plates.
- Through humans by direct contact with blood, urine, feces or other bodily fluid of infected human.
- In the health care setting where the virus may be spread by contaminated medical equipment such as needles.
- It can be transmitted sexually through semen.
- It could be transmitted through breast milk from an infected mother to her child.
- It can be inhaled from dry surfaces or infected dust.
- By eating the multimammate rat (*Mastomys natalensis*)^[13].

Diagnosis

Diagnosing Lassa fever is by testing the blood of the infected or suspected individual for Lassa virus. Laboratory diagnosis is by using enzyme like immune sorbent serologic assays (ELISA) Incubation Period The frequency period is from 1 – 21 days (3 weeks) Incidence It affects both male and female, and it's common in the dry season than wet season. Clinical Manifestation Lassa fever is difficult to diagnose clinically but should be suspected in a patient with a fever greater than 38 and such patient failed to respond to anti-malaria and antibiotics drugs^[14,15,16].

Signs and symptoms^[17,18]

- Fever > 380 c - 410C.
- Cough.
- A Sore throat.
- Pharyngitis.
- Retrospinal pain.
- Vomiting.

- Stomach pain.
- Diarrhea.
- Conjunctivitis
- Swelling of the face.
- Protein in urine.

2. Treatment

Any suspected or diagnosed patient should be admitted promptly to hospital and barrier nurse or isolated. Strict isolation technique should be maintained in all cases. Procedures' for handling body fluid and excreta must be maintained. RIBAVIRIN - is an antiviral, pro drug, called nucleoside analog. It interferes with virus replication by inhibiting RNA dependent nucleic synthesis. It's the drug of choice in the treatment of Lassa fever. It's very effective if started early in the illness and that is within six days of contracting the virus^[19,20,21].

Complication

- Mucosal bleeding [nose, mouth, lungs, digestive tract and the vagina]
- Sensory neural hearing loss deficit
- Pleural effusion
- Pericardial effusion
- Spontaneous abortion
- Shock
- zoonosis
- Myalgia
- Coagulopathy
- Thrombocytopenia
- Encephalitis

Morbidity & mortality rate of Lassa fever

The death rate is particularly high for women who are in their third trimester of pregnancy and for fetuses about 95% of which die in the uterus of infected pregnant mothers^[22,23].

3. Prevention

People should be educated on proper way of food processing (stop drying food beside roads, e.g., Cassava produce, grains etc.). Ensure foods are adequately covered, cooked or uncooked. Ensure regular hand washing with liquid soap and antiseptics. Ensure furniture surfaces are cleaned with disinfectants, e.g., tables & floors. Doors and windows should be closed especially at night, if not possible, a net should be used. All medical professionals should wear protective gadgets when treating people who are infected or suspected to be having Lassa fever^[24,25].



Fig 1: Mastomys rats



Fig 2: Symptoms of Lassa Fever



Fig 3: Prevention tips of Lassa Fever

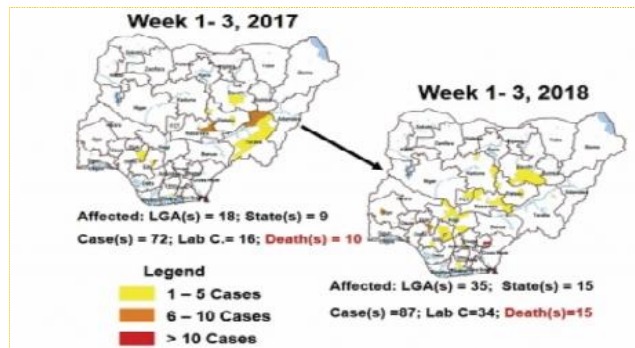


Fig 4: Morbidity and Mortality Rate of Lassa Fever

4. Conclusion

To get rid of Lassa fever and to protect our economy, every individual are responsible. Also, the government should focus on other things, the health of its citizen and the nation at large. Finally, the people should carry out daily sanitation of their environment as this will make it inconvenient for rats to breed.

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