Lassa Virus Prevention in West Africa

Morley DuPuy  
*Worcester Polytechnic Institute*

Mikaela Gordon

Jirom Yibrah

Follow this and additional works at: [http://digitalcommons.wpi.edu/gps-posters](http://digitalcommons.wpi.edu/gps-posters)
Background
The Lassa Virus is an endemic disease to West Africa, especially Guinea, Liberia, Sierra Leone, and parts of Nigeria. The virus is of the member arenaviridae and according to the World Health Organization affects between 300,000 to 500,000 annually with a death toll of about 5,000 per year. It causes the Lassa Fever which affects almost every system in the body, although fever is the most obvious and common symptom. The vector is the rodent from the Mastomys genus that is known as the "multimammate rat". This rodent is easily recognizable because of its hairless tail and the number of cases is directly proportional to the abundance of this rodent. The outlined program will be presented for adoption to the HEART not-for-profit Organization, as well as Teva Pharmaceuticals.

Education
- Program focuses on the people in endemic areas of West Africa
- Education on disease prevention as well as management.
- Develop and host specific lectures, workshops, seminars for the general public
- Educate the public about the cause of Lassa virus, how it is spread and how to prevent it.
- Teach them the symptoms.
- People living in endemic areas of West Africa with high populations of rodents are most at risk of Lassa fever.
- Educate the people on the treatments available.
- Prevention by rodent control
- Do not kill the rat that will cause them to reproduce at a faster rate.
- Identify wild Mastomys rats, which shed the virus in their urine and droppings.
- Transmission to humans occurs through contamination of broken skin or mucous membranes via direct or indirect contact with infected rodent excreta, on floors, home surfaces, in food or water.
- At Home:
  - Frequent hand washing (during a VHF outbreak).
  - Safe Burial Practices.
- Anywhere:
  - Washing hands before applying disinfectant is highly recommended because of its effectiveness.

Treatment
- The easiest way to test for the Lassa Virus would be to isolate it from the blood, urine, or throat washings.
- Adults can take 2 gm of ribavirin as a first dosage, followed by 1 gm every six hours for four days. For the six succeeding days, they should take 0.5 gm every eight hours.
- Antibiotics are also useful for patients who are experiencing secondary bacterial infections.
- Ribavirin is twice as effective when taken intravenously as opposed to orally.

Conclusion/Evaluation
The hypothesis was correct, as when HEART not-for-profit Organization was contacted, they decided not to adopt our program at this time. Their reason was that there are more pressing issues at this time and because the Lassa Virus does not cause as many fatalities as HIV/AIDS, Mr. Sirleaf, the chairman of HEART said that it was not vital enough to include it into their program. While the Lassa Virus might not be a pressing issue at the moment, it is preconceived that it will be in the future. So while it is pertinent to tackle current issues, it is also important not to overlook what could become very serious in the future.

Proposal/Hypothesis
- Project Statement: To outline a program focused on eradication of the Lassa virus through prevention with a concentration on education. The program will be presented for adoption to the HEART not-for-profit Organization, as well as Teva Pharmaceuticals.
- Hypothesis: It was preconceived that the proposal would not be immediately accepted because the Lassa Virus is a relatively new disease (recognized in 1969) and has not had as great of an effect as for example, malaria or HIV/AIDS.

References