

Persistence and infectivity of Lassa virus in body fluids: Implications for survivor follow-up and public health

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Introduction

Lassa fever is transmitted through direct contact with bodily fluids during acute infection. However, the persistence and infectivity of Lassa virus (LASV) in body fluids post-recovery remain unclear, raising public health concerns about possible transmission from convalescent led to stigma and discrimination in affected communities. This study investigates LASV RNA persistence and infectivity in various body fluids among survivors, aiming to inform post-discharge follow-up protocols and community health education

Methods

A prospective longitudinal study was conducted at Irrua Specialist Teaching Hospital, Nigeria, in collaboration with the Bernhard-Nocht Institute for Tropical Medicine, Germany. Plasma, urine, saliva, lacrimal fluid, vaginal fluid, breast milk, and seminal fluid were collected from Lassa fever survivors at 0.5, 1, 3, 6, 9, 12, 18, and 24 months post-discharge. Quantitative RT-PCR was performed to detect viral RNA, and infectivity was assessed using cell culture and

immunocompromised mice. A linear mixed model was used to analyze RNA persistence dynamics.

Results

At baseline, LASV RNA was detected in plasma (45%), urine (34%), saliva (5%), lacrimal fluid (9%), and vaginal fluid (21%), with viral clearance observed by month 3. However, 80% of male participants (35/44) had detectable LASV RNA in seminal fluid at baseline, with persistence up to month 12. Modeling estimated 10% of males remained positive for up to 193 days post-discharge. Infectious LASV was isolated from seminal fluid in immunocompromised mice for up to 6 months.

Conclusion

LASV RNA may persist in body fluids post-recovery, though infectivity was limited except in seminal fluid, which retained infectious potential for up to 6 months. These findings highlight the need for structured follow-up of male survivors and targeted public health education to reduce transmission risk and stigma.