**Viral Persistence: Analysis of Zika Virus and Other Sexually Transmittable Diseases**

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**Key Words:**

Zika virus, sexually transmitted diseases

**This microreview explores two separate studies, the first of which is specifically related to Zika virus, and the second of which is a broader analysis of sexually transmittable diseases and their persistence in human fluids. Calvet *et al.* (2017) are seeking to conduct a longitudinal study on patients in Brazil who have tested positive for Zika virus by regularly testing their bodily fluids and analyzing the results. Their longitudinal study is on-going. Salam and Horby (2017) provide an examination of twenty-seven viruses, all of which are found in human semen. Through these two analyses, this paper seeks to provide a novel overview of sexually transmitted diseases, with an emphasis on Zika virus.**

**Introduction**

According to the Centers for Disease Control, Zika virus, named for the Zika Forest in Uganda, was first discovered in 1947. The first reported cases of Zika virus in humans occurred in 1952.

The virus can be transmitted in multiple ways. The primary method of transmission is through mosquito bites. *Aedes* species mosquitos who feed on an infected individual will contract the virus and spread it. Zika virus can also be transmitted from a pregnant woman to her child during pregnancy. Additionally, there have been some reported cases of Zika virus being transmitted through blood transfusions, but these reports are currently under review. Finally, Zika virus can be spread through sexual contact.

The virus is characterized by a variety of symptoms including, but not limited to, fever, rash, headache, pain, and red eyes. An infected individual will not typically become sick enough to necessitate hospitalization, but infection creates a risk of microcephaly in the child of an infected pregnant woman. Also, there have been reports of a nervous system disorder called Guillain-Barré syndrome.

There is not currently a vaccine to prevent Zika virus, and diagnosis is usually confirmed with a blood or urine test.

**Recent Progress**

According to Calvet *et al.* (2017), there is evidence for an increase in the sexual transmission of Zika virus. Additionally, there has been a reported case where an infected male was evaluated two weeks after the onset of his symptoms. The researchers found that the “viral load” of his semen was 100,000 times higher than the viral load of his blood. In a separate case study, an infected male was evaluated sixty-two days after the onset of his symptoms. Researchers found that the Zika virus still remained in his semen even after this length of time. These findings warrant further research on the persistence of Zika virus in human semen, which is the basis for the study at hand.

In the study being conducted by Calvet *et al.,* male and female patients over the age of 18 who presented with a rash matching with the Zika virus infection were recruited and tested for Zika virus by urine and blood analysis. Those who test positively were then scheduled to be tested for a period of twelve months. The locations chosen, Rio de Janeiro, Manaus, and Recife, were selected based on population density level, level of Zika virus circulation, strength of community health system, and capability of local laboratories to perform several tests including Zika virus antigen assays and genetic sequencing of the Zika virus.

Individuals who tested positively for the Zika virus were then scheduled to attend follow-up appointments. These individuals were also then invited to ask the people with whom they reside and also the people with whom they have had sexual contact to join the study as well. Counselling in the way of informing on methods of transmission, safer sex, pregnancy planning, and pregnancy tests is to be provided to any participants in the study who test positively.

**Discussion**

Calvet *et al.* are seeking to evaluate the persistence of Zika virus in bodily fluids of both male and female patients over the course of twelve months. The primary objective of the researchers is to examine these results in relation to host immunity, while also taking environmental factors into account.

Because of the current lack of literature on the persistence of viruses in genital fluids, Salam and Horby (2017) chose to study it. Through means of literary analysis, the researchers pooled information from a multitude of studies found on PubMed. Their research showed that there are twenty-seven viruses that can be found in human semen (Table 1). Among these were viruses such as Zika, Herpes, and HIV. The researchers posit that whether or not a virus exists in semen may be related to factors like virus structural stability and systemic immunosuppression. Further research is needed to tease apart the underlying mechanisms behind viral persistence in human semen.

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