New scientific evidence of sexual transmission of the Zika virus

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Credit: Institut National de la Sante et de la Recherche Medicale

A study by researchers from Inserm, the Paris Public Hospitals (Bichat Hospital, AP-HP), Aix-Marseille University, and the National Reference Centre for Arboviruses confirms that the ZIKA virus can be transmitted sexually. Their analyses have shown 100% genetic correlation between the form of the virus present in a man who contracted the virus in Brazil

and that of a woman who had never travelled in the epidemic area, but who had sexual relations with him. These results are published in *The New England Journal of medicine*.

The ZIKA virus, a member of the Flavivirus family, is almost exclusively transmitted to humans by Aedes mosquitoes. Although Zika infection usually causes mild symptoms, it can be responsible for severe neurological complications, particularly in the infant of a woman infected while pregnant. Some indications of possible sexual transmission of the virus have been reported before now.

For the first time, and to take things further, French researchers have been able to culture the infecting virus from two people seeking a consultation for suspected ZIKA infection. Specimens of urine, saliva and blood were taken from a man who returned from Brazil, and had contracted the virus there. The same specimens were taken from a sick woman who had sexual relations with this man, but who had never travelled to an epidemic area.

While the virus was detected in the urine and saliva of the woman, analysis of the specimens showed that it was absent from the blood and saliva of the man, making it unlikely that transmission occurred by these routes. The researchers then tested his semen for the virus, and detected high viral loads at 15 days and at 3 weeks after the patient's return from Brazil (approximately 300 million copies/ml).

The virus from both persons was individually sequenced (using a saliva sample from the woman and a semen sample from the man) for genetic analysis. Examination showed 100% correlation between the two genetic sequences. Apart from 4 mutations, all of them "synonymous," the nucleotide sequences both encoded an identical form of the virus.

"Our work confirms, using molecular analyses, that sexual transmission

of the ZIKA virus exists, and should be taken into consideration when making recommendations, due to its persistence in the semen several weeks after infection. The period for which men should systematically have protected sexual relations (even oral) needs to be defined," explains Yazdan Yazdanpanah.

More information: Eric D'Ortenzio et al. Evidence of Sexual Transmission of Zika Virus, *New England Journal of Medicine* (2016). DOI: 10.1056/NEJMc1604449

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