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Sexually transmitted Zika virus infection: a new tropical disease

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ABSTRACT

Zika virus infection is a new problematic infection that becomes the global public health issue. The infection is mainly caused by mosquito bite. However, there are some recent reports on the new form of Zika virus infection, the sexually transmitted Zika virus infection which is considered the new tropical disease that has the trend of worldwide epidemic. In this short article, the authors briefly review on sexually transmitted Zika virus infection.

1. Introduction

Zika virus is a kind of arbovirus that has been firstly isolated in Africa. After a very long time of silence, in the past few years, Zika virus infections became a new problem in medicine[1]. Zika virus infection is a new problematic infection that becomes the global public health issue. The infection is mainly caused by mosquito bite and can have similar clinical presentations to dengue infection, another important tropical arboviral disease[2]. The mosquito vector is *Aedes* spp. The infection hits South America and causes the teratogenic problem in several newborns. However, there are some recent reports on the new form of Zika virus infection, the sexually transmitted Zika virus infection which is considered the new tropical disease that has the trend of worldwide epidemic. In this short article, the authors briefly review on sexually transmitted Zika virus infection.

2. Sexual contact and Zika virus transmission: how can it occur?

This question is very interesting. To be a sexually transmitted disease, there are some basic concerns. First, there must be the sexual contact of human beings. Second, there must be the pathogen. Focusing on pathogen, it has to be able to pass into the

semen or vaginal secretion. Then the pathogen can transmit from one partner to another partner during sexual intercourse. For Zika virus, it is already proved that the virus can be seen in semen and can be infectious and last for a long time[3,4]. As it is observed in the transplacental transmission of Zika virus, the virus might have high invasiveness[5] and it is no doubt that the final end can be the sexual contact induced transmission of the virus.

3. Evidences of sexually transmitted Zika virus infection

In 2016, there are emerging new evidences of sexually transmitted Zika virus infection. Indeed, Musso *et al.* proposed for the possibility of this problem since 2015[6]. The report from USA in early 2016 makes the story the new hot issue in the present day[7]. Oster *et al.* also proposed first practical guidelines against this problem[8]. Hills *et al.* also suggested that “men who reside in or have traveled to an area of ongoing Zika virus transmission and have a pregnant partner should abstain from sexual activity or consistently and correctly use condoms during sex with their pregnant partner for the duration of the pregnancy[9].”

The problem become more focused when there is a report from Italy on “a case of Zika virus infection imported in Florence, Italy ex-Thailand, leading to a secondary autochthonous case, probably through sexual transmission[10].” D’Ortenzio *et al.* summarized the available reported and confirmed for the evidence of sexual transmission of Zika virus[11]. But, as already discussed, the first strong non-subjective evidence is the proof of existence of Zika virus in semen by Atkinson *et al.*[12]. Finally, the molecular proof in a couple of Zika infections in Germany reported by Frank *et al.* is the final step to confirm the existence of sexually transmitted Zika virus infection[13].

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Until present, it is no doubt that sexually transmitted is a new tropical disease that has to be concerned worldwide. Potential sexual transmission as a cause of local transmission in returning traveler is proposed[14]. It is suggested that the Zika virus should be also included in the differential diagnosis list for a patient “who had unprotected sex with a person who traveled to one of those areas and developed compatible symptoms within 2 weeks of returning[15].”

4. Some important facts about sexually transmitted Zika virus infection

4.1. Not only heterosexuality but also homosexuality

It should be noted that the sexual transmission problem of Zika virus behave its way like the HIV. It is already confirm that male to male transmission is possible[16]. Deckard *et al.* confirmed that “Zika virus can be transmitted through anal sex[16]” and this is already the hot issue in gay and lesbian medicine. Petersen *et al.* concluded that “possible exposure to Zika virus is defined as travel to or residence in an area of active Zika virus transmission (<http://www.cdc.gov/zika/geo/active-countries.html>), or sex (vaginal intercourse, anal intercourse, or fellatio) without a condom with a man who traveled to or resided in an area of active transmission[17].”

4.2. Silent sexual transmission: a real danger

Finally, it should be noted that classical Zika virus infection can be mild or asymptomatic[18]. For the case of sexually transmitted Zika virus infection, the asymptomatic clinica feature can also be seen. Recently, Fréour *et al.* reported “a case of Zika virus sexual transmission, likely male-to-female, in a totally asymptomatic couple[19].” This can confirm the actual risk of this new disease as a disease to be worldwide pandemic, as we already have the lesson from the case of HIV infection. Although the risk is not high, the risk of local transmission of imported case of Zika virus infection by sexual transmission is already proposed[14,20]. Gao *et al.* concluded that “prevention and control efforts against Zika virus should target both the mosquito-borne and sexual transmission routes[20].”

5. Conclusion

Sexually transmitted Zika virus infection already occurs and becomes the big issue for management at present. Using history of worldwide pandemic of HIV, Zika virus might follow its tract and early management of this possible problem is required.

Conflict of interest statement

We declare that we have no conflict of interest.

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