

CLINICAL RECOMMENDATIONS FOR WOMEN EXPOSED TO ZIKA

RECOMENDACIONES CLÍNICAS PARA MUJERES EXPUESTAS AL VIRUS ZIKA

Lila de Tantillo

Candidates a PhD in Nursing, University of Miami School of Nursing and Health Studies

Juan M. González

DNP, ARNP, AGACNP-BC, FNP-BC, CEN, Assistant Professor of Clinical, Graduate Programs, University of Miami School of Nursing and Health Studies

Johis Ortega

PhD, ARNP, ACNP-BC, ENP-BC, FNP-BC, FAAN, Associate Professor of Clinical, Graduate Programs, University of Miami School of Nursing and Health Studies

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ABSTRACT

Zika is an infectious disease that continues to pose an enduring threat worldwide. The disease is of particular concern to women of childbearing age, as the virus can cause devastating birth defects or fetal loss if acquired during pregnancy. Clinicians caring for women capable of becoming pregnant must inform women regarding the potential for Zika transmission via mosquito bites in affected regions as well as by sexual contact with exposed partners. Because of the global scope of the disease, clinicians caring for pregnant patients should evaluate for risk of Zika exposure to provide patients guidance in decision making related to virus prevention and testing.

Key words: Zika, infectious disease, virus, mosquito, sexual transmission, pregnancy

RESUMEN

Zika es una enfermedad infecciosa que aún representa una amenaza de largo plazo en todo el mundo. La enfermedad es especialmente peligrosa para las mujeres en edad fértil, ya que si se adquiere durante el embarazo, el virus puede causar defectos congénitos devastadores o pérdida del feto. Profesionales de la salud encargados del cuidado de las mujeres con planes de quedar embarazadas deberían informar a estas pacientes sobre el potencial de transmisión de Zika a través de picaduras de mosquitos en regiones afectadas, así como, por contacto sexual con parejas expuestas. Debido a los resultados de la extensión global de la enfermedad, los profesionales de salud que cuidan a las pacientes embarazadas también necesitan evaluar el riesgo de contacto con Zika para proporcionar orientación a los pacientes en la adopción de decisiones relacionadas con la prevención y las pruebas de este virus.

Palabras clave: Zika, enfermedad infecciosa, virus, mosquito, transmisión sexual, embarazada

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INTRODUCTION

Zika continues to pose a major health threat across the globe. This disease, initially declared a worldwide public health emergency by the World Health Organization (WHO), has been reclassified as a significant enduring public health challenge requiring a long-term response¹. Ongoing risks associated with this disease have continued to particularly impact the Americas, where 48 countries have reported mosquito-borne transmission since 2015, and five countries have reported sexually transmitted cases².

Since February 1 of 2017, the countries of Mexico and St. Martin have reported babies with microcephaly and other central nervous system malformations potentially associated with the virus for the first time³; also since February 1 of 2017, the islands of Curacao and Trinidad and Tobago have reported cases of Guillain-Barré syndrome associated with the virus for the first time³.

In the Western Hemisphere, mosquito-borne transmission of Zika has been identified in most of South America, Central America, Mexico, the Caribbean, and parts of the United States². While the impact of the disease continues to expand as a concern internationally, the devastating birth

defects associated with this mosquito-borne virus, as well as the potential for sexual transmission of the infection, have led Zika to be a disease with particular impact for women who are among the poorest and most vulnerable in the world⁴. A study conducted in Brazil, a country especially affected by the Zika virus, discovered a 90% higher incidence of Zika in women 15-65 than men of corresponding age, a discrepancy not found in other age groups, a finding interpreted as the consequence of sexual transmission from men to women⁵.

CLINICAL RECOMMENDATIONS

The priority for clinicians who care for women of childbearing age living in areas with ongoing risk of Zika is to ensure patients are aware of the severe potential for harm to a developing pregnancy. Zika infection has been linked to adverse pregnancy outcomes, including fetal death, growth restrictions, and serious central nervous system abnormalities including microcephaly⁶. Current research indicates that among pregnant women who have had laboratory evidence of Zika, 6% of fetuses or infants demonstrated evidence of Zika-associated birth defects⁷. The risk may be even higher for women who were exposed to the virus early in

pregnancy: the figure increased to 11% for infants and fetuses of mothers who had evidence of first-trimester Zika infection.

Because of the international scope of the disease, clinicians should be prepared to evaluate their patients, especially women of childbearing age, for risk of Zika exposure to guide their patients in decision making related to prevention and testing. Health providers should use clinical judgment to ask questions to female patients in their care regarding recent and expected travel, as well as fertility plans. Those clinicians who are not located in areas of active Zika should be aware that the World Health Organization⁸ has warned that pregnant women should not travel to areas with risk of Zika transmission and advise such patients accordingly.

At this time the *Aedes aegypti* mosquito has been established as the chief vector of the disease, although other species such as the *Aedes albopictus* has also been demonstrated as capable of carrying and transmitting the virus⁹. Clinicians should urge women who are or may become pregnant, as well as their partners, who are living in or traveling to regions of Zika transmission to employ preventative measures. Such measures include using mosquito repellent, covering exposed skin, and whenever possible, staying and sleeping in screened or mosquito-netted accommodations to avoid transmission¹⁰.

Safer sex practices are also a crucial component of preventing infection with Zika virus. Zika can be

transmitted through semen¹¹. Clinicians should remind female patients capable of bearing children that many individuals experience Zika with few or mild symptoms¹¹ – and this could include themselves or their partners. Additionally, it can be emphasized by health care providers that the Zika virus has been detected in semen up to 188 after initial onset of symptoms¹². This indicates that if a woman or her male partner could have been exposed to Zika at some point in the past six months, transmission during this time is theoretically possible, even if the individual has demonstrated no symptoms of the disease. Additionally, health officials in the United States have urged women to exercise caution and discuss with their providers risks prior to pursuing insemination with sperm banks using donations from South Florida in the latter part of 2016¹³.

If a woman is already pregnant when her partner becomes exposed to Zika, prevention of transmission of infection of the virus must remain a key priority throughout the pregnancy. Regardless of whether the partner has demonstrated symptoms, the couple should use a condom every time they have sex, including vaginal, anal, or oral sex, or they may choose to abstain from sex during the pregnancy¹¹.

SCREENING

At all times, providers should remain attuned to the symptoms of Zika, most prominently low-grade fever, conjunctivitis, and maculopapular rash¹⁴.

Yet because of the potential for both mosquito and sexual transmission of the disease, clinicians caring for pregnant women are also advised to conduct applicable tests for expecting patients exposed to Zika¹¹. For details on the decision chain, please see Figure 1^{15,16}. Additionally, the Centers for Disease Control and Prevention¹⁷ now advise pregnant women who are asymptomatic but who live in or frequently travel to areas with Zika transmission to also consider receiving Zika virus nucleic acid testing at least once per trimester in addition to IgM testing.

Of particular importance is providing appropriate support to a pregnant mother during the process of screening for Zika and, when necessary, informing the patient of a positive result¹⁸. Clinicians should strive at all times to provide the women in their care with the most accurate and up-to-date information regarding risks and ensure their patients receive appropriate testing and referrals to specialists, including counseling, as needed.

Breastfeeding

A woman who delivers a child after Zika exposure or infection may also have to make decisions about how to feed her baby. Clinicians should inform women in these circumstances regarding the most recent guidelines from the World Health Organization¹⁹, which recommend that mothers with suspected

or confirmed Zika follow normal infant feeding guidelines and begin breastfeeding within one hour after birth. Although breastmilk of women with Zika is potentially infectious, there have been no documented reports of transmission to infants, and a WHO steering group has concluded the benefits of breastfeeding outweigh potential risks of breastfeeding.

FUTURE DIRECTIONS

At this time many questions remain unanswered regarding Zika and its risks as an emerging threat to public health. Little is known about the long-term prognosis of children exposed to the infection in utero as they develop into adulthood, which may include sensory deficits, seizures and intellectual disabilities^{20,21}. However, scientists at the National Institutes of Health and the National Institute of Allergy and Infectious Diseases are working to prevent ongoing transmission of this infection by developing a vaccine, which has now progressed to clinical trials²². More research will be needed to halt the spread of the Zika virus and its devastating impact on women and their children.



Figure 1. Testing Guidelines for Pregnant Women Exposed to Zika.

BIBLIOGRAPHIC REFERENCES

1. World Health Organization. Fifth meeting of the Emergency Committee under the International Health Regulations regarding microcephaly, other neurological disorders and Zika virus. Cited on 2016. Available at <http://www.who.int/mediacentre/news/statements/2016/zika-fifth-ec/en/>
2. Pan American Health organization (2017a). Regional Zika epidemiological update (Americas). Cited April 27, 2017. Available at http://www.paho.org/hq/index.php?option=com_content&id=11599&Itemid=41691.
3. Pan American Health Organization. Latest global situation on Zika. Cited on 2017. Available at http://www2.paho.org/hq/index.php?option=com_content&view=article&id=11669:latest-global-situation-report-zika&catid=8444:news&Itemid=41716&lang=en.
4. Diniz D. Zika Virus, Women and Ethics". *Developing World Bioethics.* 2016;16 (2):62-63. Web DOI:10.1111/dewb.12119.
5. Coelho F, Durovni B, Saraceni V, Lemos C, Codeco C, Camargo S et al. Higher incidence of Zika in adult women than adult men in Rio de Janeiro suggests a significant contribution of sexual transmission from men to women. *International Journal of Infectious Disease.* 2016; 51:128-132. DOI: 10.1016/j.ijid.2016.08.023.
6. Brasil P, Pereira Jr J P, Moreira M E, Ribeiro-Nogueira R M, Damasceno L et al. Zika virus infection in pregnant women in Rio de Janeiro. *Current Medicine Research and Practice.* 2016;6(2):95.
7. Honein M, Dawson A, Petersen E, Jones A, Lee E, Yazdy M et al. Birth Defects Among Fetuses and Infants of US Women With Evidence of Possible Zika Virus Infection During Pregnancy. *JAMA.* 2017;317(1):59.
8. World Health Organization. Information for travelers visiting Zika affected countries. Cited on 2017. Available at <http://www.who.int/csr/disease/zika/information-for-travelers/en/>.
9. European Centre for Disease Prevention and Control. Zika virus disease epidemic: Preparedness planning guide for diseases transmitted by Aedes aegypti and Aedes albopictus. Cited on 2016. Available at http://www.euro.who.int/__data/assets/pdf_file/0007/304459/WEB-news_competence-of-Aedes-aegypti-and-albopictus-vector-species.pdf.
10. Centers for Disease Control and Prevention. Guidelines for travelers visiting friends and family in areas with Chikungunya, Dengue, or Zika. Cited on 2017. Available at <https://wwwnc.cdc.gov/travel/page/>

- guidelines-vfr-chikungunya-dengue-zika.
- ^{11.} Centers for Disease Control and Prevention. Clinical guidance for healthcare providers for prevention of sexual transmission of Zika virus. Cited on 2017. Available at <https://www.cdc.gov/zika/hc-providers/clinical-guidance/sexualtransmission.html>.
- ^{12.} Moreira J, Peixoto T, Siqueira A, Lamas C. Sexually acquired Zika virus: a systematic review. *Clinical Microbiology and Infection*. 2017;23(5):296-305.
DOI:10.1016/j.cmi.2016.12.027.
- ^{13.} Belluck P. Zika warning is issued over sperm banks in the Miami area. *New York Times*. March 13, 2017; A13.
- ^{14.} Plourde A, Bloch E. A literature review of Zika virus. *Emergency Infectious Diseases*. 2016;22(7):1185-1192.
DOI:10.3201/eid2207.151990.
- ^{15.} Centers for Disease Control and Prevention. CDC's response to Zika: Updated interim pregnancy guidance. Cited on 2017. Available at https://www.cdc.gov/zika/pdfs/testing_algorithm.pdf
- ^{16.} Centers for Disease Control and Prevention. Interim guidelines for pregnant women during a Zika virus outbreak. Cited on 2016. Available at <https://www.cdc.gov/mmwr/volumes/65/wr/mm6502e1.htm>
- ^{17.} Centers for Disease Control and Prevention. Prolonged IgM antibody response in people infected with Zika virus: Implications for interpreting serologic testing results for pregnant women. Cited on 2017. Available at <https://emergency.cdc.gov/han/han0402.asp>.
- ^{18.} De Tantillo L, Gonzalez J, Ortega J. Managing screening and diagnosis of Zika in the Emergency Department. *Journal of Infection Prevention*. 2017;18(2):84-87. DOI: 10.1177/1757177416687833
- ^{19.} World Health Organization. Infant feeding in areas of Zika virus transmission. Cited on 2016. Available at http://apps.who.int/iris/bitstream/10665/204473/1/WHO_ZIKV_MOC_16.5_eng.pdf?ua=1
- ^{20.} Hamel M, Hughes B. Zika infection in pregnancy. *Contemporary OB/GYN*. 2016; 611(8): 16-18, 20, 22, 42.
- ^{21.} Solomon T, Baylis M, Brown, D. Zika virus and neurological disease—approaches to the unknown. *The Lancet Infectious Diseases*. 2016;16(4), 402-404.
- ^{22.} Abbas J. Zika vaccine enters clinical trials. *JAMA*. 2016; 316(12):1249.
DOI:10.1001/jama.2016.127