WHO interim guidance on pregnancy management in the context of Zika virus infection

Lancet Glob Health 2016
Published Online
May 19, 2016
http://dx.doi.org/10.1016/S2214-109X(16)30098-5

As a result of an unusual clustering of cases of microcephaly and Guillain-Barré syndrome, WHO declared the 2015–16 Zika virus outbreak in the Americas a "public health emergency of international concern".[1] As part of its strategic response to the outbreak, WHO is leading normative work to mitigate the potential impact on pregnant women, newborn babies, and other at-risk populations. Last week, WHO launched an updated version of its guidance on pregnancy care in the context of Zika virus infection.[2] The guidance covers recommendations for preventing maternal Zika virus infection, antenatal care and management of women with infection, and care for all pregnant women with possible exposure to Zika virus through residence in or travel to an affected area.

Vector control is critical in substantially reducing the risk of maternal and fetal Zika virus infection. Therefore, the guidance emphasises the importance of counselling pregnant women about preventive measures at every antenatal contact. Recommended personal protection measures include the use of clothing that covers as much of the body as possible, bednets, window and door screens, safe repellents, and avoidance of unprotected sexual activity with a partner possibly exposed to Zika virus. In addition to recommending local measures to reduce vector breeding sites, the guidance notes the importance of addressing the underlying social determinants of this outbreak, and encourages governments to take broader steps to provide sustainable and equitable access to clean water, sanitation, and appropriate waste management.

Antenatal care in the context of Zika virus transmission requires specific actions to prevent infection, and to identify women who might be infected for testing, appropriate care, and follow-up. The guidance recommends that Zika virus infection should be suspected on the basis of the common signs and symptoms—rash, fever, arthralgia, and conjunctivitis—lasting 2–7 days, and confirmed using RT-PCR detection of Zika virus RNA in blood (or urine) samples collected within 1 week of symptoms or by serology for Zika-virus-specific IgM thereafter. As there is currently no specific therapy for Zika virus infection, only symptomatic treatment is recommended whenever there are symptoms.

The guidance includes decision charts for testing and care of pregnant women residing in areas with ongoing Zika virus transmission, and for pregnant women with a history of recent travel to such areas. Testing for Zika virus infection is recommended for pregnant women presenting with (or reporting) signs and symptoms or those with ultrasound findings of fetal abnormalities at any time during pregnancy. WHO does not at this time recommend universal testing of pregnant women for Zika virus. Rather, it reinforces the need to offer all women early ultrasound examinations, including a fetal anomaly scan at 18–20 weeks to accurately date the pregnancy and evaluate fetal anatomy. The guidance points to a broader spectrum of fetal abnormalities that should raise a suspicion of congenital Zika virus infection. These include microcephaly, ventriculomegaly, intracranial calcifications, cerebral atrophy, callosal dysgenesis, micro-ophthalmia, eye calcification, growth restriction, and even fetal death.[3,4]

As shown in the figure, Zika-virus-related fetal abnormalities should be suspected in pregnant women with ultrasound evidence of fetal abnormalities and a positive or inconclusive Zika virus test. Pregnant women with a history of symptoms, no ultrasound evidence of fetal abnormalities, and a negative Zika virus test are most likely unaffected and should continue to receive routine antenatal care. Pregnant women with abnormal ultrasound findings but a negative Zika virus

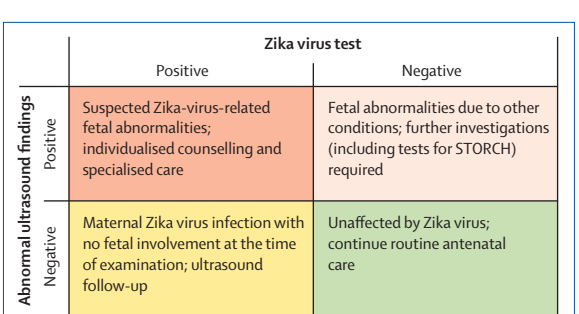

Figure: **Interpretation of Zika virus test and ultrasound findings in the context of Zika virus transmission**
STORCH=syphilis, toxoplasmosis, rubella, cytomegalovirus, and herpes virus infections.

test should be suspected of having fetal abnormalities due to other conditions, including congenital infections (eg, syphilis, toxoplasmosis, rubella, cytomegalovirus, and herpes virus infections), and will need further investigations. The finding of a positive or inconclusive Zika virus test but no fetal abnormalities on ultrasound suggests maternal infection without fetal involvement at the time of examination. While these women should continue to receive routine antenatal care, serial ultrasound follow-up until birth is advised.

The management decisions for fetal abnormalities in the context of Zika virus infection pose serious challenges for settings with limited resources. Depending on the severity of fetal abnormalities and their prognosis, the guidance notes that management options could range from specialised antenatal care and serial ultrasound follow-up to monitor progression of the abnormalities, to a discussion of the potential next steps in managing the pregnancy. It recommends that the woman—and her partner if she so wishes—be offered non-directive counselling so that, in consultation with her health-care provider, she can make a fully informed choice about further management options. For women who carry their pregnancy to term, health-care providers should offer appropriate psychosocial support to manage anxiety and stress[5] and arrange consultations with a paediatrician or a paediatric neurologist, where possible. The guidance recommends that women who wish to discontinue their pregnancy should receive accurate information about their options to the full extent of the law, including harm reduction practices where the care desired is unavailable.[6]

The guidance highlights key evidence gaps, particularly in relation to the natural history of maternal and fetal Zika virus infection, vertical transmission risk, and interventions to reduce perinatal transmission. Appropriately designed studies are urgently required to respond to these questions.

*Olufemi T Oladapo, João Paulo Souza, Bremen De Mucio, Rodolfo Gómez Ponce de León, William Perea, A Metin Gülmezoglu, on behalf of the WHO Guideline Development Group

UNDP/UNFPA/UNICEF/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction, Department of Reproductive Health and Research, World Health Organization, 1211 Geneva 27, Switzerland (OTO, JPS, AMG); Latin American Centre for Perinatology, Pan American Health Organization, Montevideo, Uruguay (BDM, RGPdL); and Department of Pandemic and Epidemic Diseases, World Health Organization, Geneva, Switzerland (WP)

oladapoo@who.int

The development of this guidance was coordinated by the Department of Reproductive Health and Research, World Health Organization (WHO), Geneva. WHO acknowledges the contributions that many individuals and organisations made to the development of this guidance, particularly the systematic review teams, and external peer reviewers. We thank all WHO staff and external advisors who participated in the WHO emergency guideline meeting on the management of Zika virus complications on March 17–19, 2016. We declare no competing interests.

1 World Health Organization. WHO statement on the first meeting of the International Health Regulations (2005) (IHR 2005) Emergency Committee on Zika virus and observed increase in neurological disorders and neonatal malformations. http://www.who.int/mediacentre/news/statements/2016/1st-emergency-committee-zika/en/ (accessed May 6, 2016).

2 World Health Organization. Pregnancy management in the context of Zika virus infection. Geneva: World Health Organization, 2016. http://www.who.int/csr/resources/publications/zika/pregnancy-management/en/ (accessed May 16, 2016).

3 Oliveira Melo AS, Malinger G, Ximenes R, Szejnfeld PO, Alves Sampaio S, Bispo de Filippis AM. Zika virus intrauterine infection causes fetal brain abnormality and microcephaly: tip of the iceberg? *Ultrasound Obstet Gynecol* 2016; **47:** 6–7.

4 Brasil P, Pereira JP Jr, Raja Gabaglia C, et al. Zika virus infection in pregnant women in Rio de Janeiro—preliminary report. *N Engl J Med* 2016; published online March 4. http://dx.doi.org/10.1056/NEJMoa1602412.

5 World Health Organization. Psychosocial support for pregnant women and for families with microcephaly and other neurological complications in the context of Zika virus. Geneva: World Health Organization, 2016. http://www.who.int/csr/resources/publications/zika/psychosocial-support/en/ (accessed May 6, 2016).

6 Erdman JN. Harm reduction, human rights, and access to information on safer abortion. *Int J Gynaecol Obstet* 2012; **118:** 83–86.