Testing for Zika in asymptomatic travelers at risk

Douglas W. Hershey, MD

Birth defects secondary to maternal Zika infections, particularly microcephaly, have rapidly come to worldwide attention of health organizations and the general public. Many pregnant patients with increased risk of a serious birth defect elect pregnancy termination. Although the incidence of microcephaly and other fetal anomalies in pregnant Zika-infected women is not yet known, those women with good evidence of Zika infection might elect pregnancy termination, particularly if it is detected early in the pregnancy.

Much of the focus on the assessment of pregnant women at risk for vertical transmission of Zika has been with ultrasound diagnosis of microcephaly. However, the prenatal diagnosis of microcephaly is not frequently and reliably made with confidence prior to the late second or third trimester at which time pregnancy termination is usually not available. Furthermore, false-positive diagnoses of microcephaly are not rare and can result in significant patient anxiety and possibly unwarranted pregnancy termination.

A recent communication provides an algorithm for patients at risk for Zika.[1] Two methods of testing are discussed, serology (IgM) and reverse transcriptase (RT)-polymerase chain reaction (PCR). Detection of Zika RNA by RT-PCR is diagnostic. A positive IgM may not be diagnostic, because of cross-reactivity with similar viruses such as dengue. With both tests, there may be false negatives, which in the case of RT-PCR testing is due to rapid clearance of Zika RNA from maternal blood.

An infection with Zika virus is asymptomatic in 4 of 5 patients. Although not proven, it is a reasonable assumption that Zika virus may be transmitted to the fetus in asymptomatic women. Thus an argument can be made that all pregnant patients with a history of recent travel to a geographical area where Zika is endemic could be tested. For these travelers, the above-referenced American Congress of Obstetricians and Gynecologists Practice Advisory recommends RT-PCR testing of those who are symptomatic, but only IgM serology for those who are asymptomatic. This difference in recommendations is presumably based on the fact that clearance of Zika RNA from maternal blood can be fairly rapid and, without typical symptoms to designate the time of infection, the likelihood of a positive test result is low.

One of several recent studies,[2] however, reported Zika virus in maternal urine for up to 2 or 3 weeks postinfection, considerably longer than in blood. I would suggest RT-PCR be considered in a selected subset of asymptomatic pregnant patients who fulfill the following criteria: (1) returning from a time-limited (perhaps $\leq$2 weeks) visit to one of the many Latin American countries where Zika is endemic or epidemic; (2) contacting her obstetrician as soon as she returns; and (3) sonographic confirmation that travel occurred during the first or early second trimester when risk of birth defects from Zika is probably higher. In such cases, both blood and urine RT-PCR and follow-up serology would be recommended as it is for those with recent clinical Zika illness. While the possibility of a false-negative result would still exist, the diagnostic certainty of a positive RT-PCR would give the patient important information earlier in the pregnancy. ■

REFERENCES

1. Practice advisory (ACOG and SMFM): updated (June 23, 2016) interim guidance for care of women of reproductive age during a Zika virus outbreak. Available at: http://www.acog.org/About-ACOG/News-Room/Practice-Advisories/Practice-Advisory-Interim-Guidance-for-Care-of-Obstetric-Patients-During-a-Zika-Virus-Outbreak. Accessed February 14, 2017.

2. Campos Rde M, Cirne-Santos C, Meira GL, et al. Prolonged detection of Zika virus RNA in urine samples during the ongoing Zika virus epidemic in Brazil. J Clin Virol 2016;77:67-70.

From the Prenatal Diagnosis of Northern California Medical Group, Sacramento, CA.

Received July 18, 2016; revised Dec. 7, 2016; accepted Dec. 19, 2016.

The author reports no conflict of interest.

Corresponding author: Douglas W. Hershey, MD. dhershey@pndx.com

0002-9378/free

http://dx.doi.org/10.1016/j.ajog.2016.12.014