Preconception assisted reproductive technology counseling in the age of Zika

The recent Zika virus (ZIKV) epidemic that has affected the South and Central Americas, the Caribbean, and the United States has forced couples considering pregnancy in endemic areas to make extremely tough decisions based on a paucity of information. Physicians are tasked with the difficult task of providing meaningful counseling regarding the magnitude of the risk following exposure, transmission, and the likelihood of fetal malformations based on extremely limited data. Arguably, reproductive endocrinologists providing advanced care face an even more difficult challenge. Unlike providers who provide preconception counseling and then let patients pursue conception on their own, a reproductive endocrinologist takes an active role in aiding conception. The burden of responsibility to provide comprehensive information regarding the reproductive outcome and transmission risks falls even more squarely on the provider's shoulders in this latter case.

The case report by Benjamin et al. is the first to describe a ZIKV-affected fetus that was conceived as result of assisted reproductive technology (ART) (1). The timeline provided suggests that the infection was a post-conception event as opposed to an infection acquired during the in vitro fertilization (IVF) process. Regardless of the timing of ZIKV transmission, the report describes a devastating outcome for a couple who invested their time, financial resources, and hopes for a long-awaited pregnancy. Notably absent from this case are the details of the preconception counseling provided to the couple, nor do the authors address informed consent as it relates to acknowledging the risks of ZIKV infection during pregnancy. Although not explicitly stated, it is understood that these issues were addressed before initiating treatment. The Centers for Disease Control and Prevention (CDC) has published information to help guide practitioners in providing preconception counseling; however, that document does not address one of the hardest questions providers will face: "If I do get infected with the Zika virus while pregnant, what are the chances that my baby will be affected?" (2).

On April 4, 2017, the CDC published a report based on preliminary data collected in the United States Zika Pregnancy Registry (USZPR) (3). That report revealed that in 2016, 44 states in the U.S. reported pregnant women with possible ZIKV infection. Most importantly, their analysis revealed that ZIKV-associated birth defects were present in 10% of pregnancies with laboratory-confirmed ZIKV infection, and in 15% of pregnancies where ZIKV infection occurred during the first trimester (3). This essential information will enable counseling practitioners to better inform patients regarding decisions about reproductive planning, including couples pursuing assisted reproduction. It is possible that the precise level of risk may fluctuate for some time as ZIKV spreads and more cases are reported, but the risk is clearly considerable. It is also not clear whether this level of risk will be applicable to patients residing in places of active ZIKV transmission; however, it does provide a solid launching point for preconception counseling. The World Health Organization is likewise compiling cases of ZIKV-associated microcephaly and Guillain-Barré syndrome, but statistical data on transmission risk are not yet available (4).

The recent data from the CDC, underscored by the report by Benjamin et al. (1), emphasize the need for all pregnant women to avoid ZIKV exposure. Current recommendations include screening of all pregnant women at every prenatal visit for ZIKV exposure, with testing in accordance with CDC guidance. American Society for Reproductive Medicine guidelines provide additional information for providers of ART. Specifically, the guidelines recommend that routine testing for ZIKV RNA be made available for women or men who are attempting reproduction and have possible exposure to ZIKV (5).

The report by Benjamin et al. (1) underscores the need for additional epidemiologic data regarding the pregnancy-associated risk of ZIKV in areas of active transmission. It is unrealistic to expect infertile couples living in endemic areas who have spent months or years trying to conceive on their own to simply postpone family planning. Until an effective vaccine becomes available, ZIKV infection continues to pose a genuine threat to patients pursuing assisted reproduction. As a community, it is essential that the most comprehensive and accurate data are available to provide informed consent for patients before initiating infertility treatment.

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REFERENCES

1. Benjamin I, Fernández G, Figueira JV, Parpacén L, Urbina MT, Medina R. Zika virus detected in amniotic fluid and umbilical cord blood in an IVF-conceived pregnancy in Venezuela. Fertil Steril 2017; 107:1319–22.
2. Centers for Disease Control and Prevention. Preconception counseling for women and men living in areas with ongoing spread of Zika virus who are interested in conceiving. Atlanta: CDC, US Department of Health and Human Services. 2016. Available at: https://www.cdc.gov/zika/pdfs/preconception-counseling.pdf. Accessed April 3, 2017.
3. Reynolds MR, Jones AM, Peterson EE. Vital signs: update on Zika virus-associated birth defects and evaluation of all U.S. infants with congenital

Zika virus exposure—U.S. Zika Pregnancy Registry, 2016. Centers for Disease Control and Prevention. MMWR Morb Mortal Wkly Rep 2017;66:366–73.
4. World Health Organization. Situation report: Zika virus, microcephaly, Guillain-Barre syndrome. 2017. Available at: http://apps.who.int/iris/bitstream/10665/254714/1/zikasitrep10Mar17-eng.pdf. Accessed April 4, 2017.
5. American Society for Reproductive Medicine. Guidance for providers caring for women and men of reproductive age with possible Zika virus exposure. ASRM guidelines document. Available at: http://www.asrm.org/globalassets/asrm/asrm-content/news-and-publications/practice-guidelines/for-non-members/asrm_zikaguidance_09-13-16.pdf. Accessed April 4, 2017.