Zika congenital syndrome is seen in infants whose mothers had asymptomatic infection

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Zika virus infection may pose less risk to a fetus if contracted late in pregnancy, researchers examining the Zika outbreak in Colombia have found, but Zika congenital syndrome seems to be able to develop in infants whose mothers had asymptomatic infections.

The report by researchers from Colombia's Instituto Nacional de Salud and Ministerio de Salud y Protección Social and the US Centers for Disease Control and Prevention was published in the *New England Journal of Medicine*.¹

Zika virus is a neurotropic flavivirus that is primarily transmitted by the bite of an infected *Aedes aegypti* mosquito. Only about a fifth of infections are symptomatic. When symptoms occur—typically fever, headache, rash, conjunctivitis, arthralgia, myalgia, and malaise—they are usually mild and short lived. Infection during pregnancy, however, is known to be associated with an increased risk of severe fetal defects, including microcephaly, cortical disorders, ocular abnormalities, and brain stem dysfunction. Whether there is an increased risk of fetal defects when the mother's Zika virus infection is asymptomatic has been uncertain, as has been the effect of the timing of the infection during pregnancy.

In the new study, the authors looked at national surveillance data from 9 August 2015 to 2 April 2016 and identified 11 944 reported cases of symptomatic Zika virus infection in pregnant women. Information on the trimester of infection was available in a subgroup of 1850 women.

Of these women, those who had been infected in the first and second trimesters had not delivered at the time of the report so their pregnancy outcomes were not known. But of 616 who were infected in the third trimester about 90% had come to term. Of these there were no cases of microcephaly or other apparent

abnormalities associated with Zika virus congenital infection, the researchers reported.

Though cautioning that their data were preliminary, the researchers concluded that the findings indicated that maternal infection with the Zika virus during the third trimester of pregnancy was not linked to structural abnormalities in the fetus. They added that they were still following up the pregnancy outcomes among women infected in the first and second trimesters.

National surveillance also identified 50 cases of microcephaly in Colombia from January 2016 to April 2016, the researchers wrote. At the time of the report 26 of the cases were still under investigation, and 20 cases had been found to be caused by factors other than Zika virus infection, such as syphilis, toxoplasmosis, other agents, rubella, cytomegalovirus, and herpes (STORCH) infections, as well as genetic causes and neural tube defects.

In four cases, however, the infants were found to have laboratory evidence of congenital Zika infection even though none of the mothers had reported symptoms of infection, the researchers wrote. Diagnosis was based on reverse transcriptase polymerase chain reaction assays, a negative STORCH evaluation, and normal karyotypes. Other clinical findings included decreased muscle tone, problems with sucking or swallowing, and amyoplasia of the lower limbs.

1 Pacheco O, Beltrán M, Nelson CA, et al. Zika virus disease in Colombia—preliminary report. *N Engl J Med* 2016. doi:10.1056/NEJMoa1604037. PMID:27305043.

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