

Chikungunya virus and maternal infection

Chikungunya virus, an infectious agent transmitted by mosquitoes, appears seldom to harm infants of mothers infected early in pregnancy, but can frequently cause serious problems, including lasting brain injury, in babies born to mothers who acquire the virus near the time of delivery, according to a study in *PLoS Medicine*.

During a 2005-2006 chikungunya outbreak in the Indian Ocean, physicians from the Island of La Réunion and Marc Lecuit of the Institut Pasteur in Paris, gathered information on more than 7,000 women delivering babies at a hospital in the southern part of this island. They also studied the health of babies born to these women.

The researchers determined that 700 of the new mothers had been infected with chikungunya virus at some point between conception and 3 days before delivery. Among these women 3 early fetal deaths were associated with infection, but otherwise none were found to have transmitted chikungunya to their infants. In contrast, among 39 mothers who became infected within 2 days before or after delivery, 19 babies became infected. All of the infected babies were born healthy but developed fever, weakness, and pain within 3–7 days. Ten of these babies became seriously ill—nine developed brain swelling, and two had bleeding into the brain. Disabilities persisted in four children at the end of the study several months later.

The researchers conclude that clinicians and public health officers must remain alert to the threat that chikungunya virus poses to newborn children whenever outbreaks occur, and that clinicians should monitor babies exposed to chikungunya virus around delivery for a week after their birth, and be prepared to provide them with supportive treatment in the hospital.

Chikungunya virus was first isolated from a patient in Tanzania in the early 1950s. Since then, major outbreaks of chikungunya fever have occurred throughout sub-Saharan Africa and in Southeast Asia, India, and the Western Pacific, usually at intervals of about 7–8 years. The virus causes fever, rash, and severe joint and muscle pains, usually within 3–7 days of being bitten by an infected mosquito.

In a related Policy Forum, Thomas Scott of the University of California, Davis and colleagues, who were not involved in the study, discuss how suppression of carrying mosquitoes is a practical method to control urban dengue, yellow fever, and chikungunya viruses.

Citation: Gerardin P, Barau G, Michault A, Bintner M, Randrianaivo H, et al. (2008) Multidisciplinary prospective study of mother-to-child chikungunya virus infections on the Island of La Reunion. *PLoS Med* 5(3): e60.

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