Is Pregnancy Outcome Influenced by Chikungunya Infection? A Case-Control Study in 1401 Pregnant Women Enrolled in the CHIMERE Cohort

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Background:
In 2005-06 a Chikungunya virus outbreak infected 38% of Réunion Island population. Forty-two cases of mother to child transmission were described for the first time. The purpose of the CHIMERE cohort study was to determine the consequences of Chikungunya infection on pregnancy outcomes.
Methods:
In 2006, 1401 pregnant women were enrolled in the CHIMERE cohort. The diagnosis of Chikungunya was based either on serology (IgM & IgG Chikungunya specific serology) planned at inclusion and at delivery, or RT-PCR performed in case of symptoms. We determined that 584 women were not infected by the virus at delivery (IgM- and IgG-), 648 were infected antepartum (IgM+, RT-PCR+, or IgG seroconversion) and 27 before pregnancy, date of infection was imprecise for 50 and assessment was incomplete for 92. We compared pregnancy outcome (prenatal hospitalization, fetal-loss and stillbirth, premature delivery, mode of delivery, birth weight, fetal malformations, newborn hospitalization) between the 584 women free of Chikungunya infection and the 648 infected during pregnancy. This prospective multicentric study has been approved by IRB (CPP de Tours, France).
Results:
For the 648 women infected by Chikungunya during pregnancy, the infection occurred during the first, second, and third trimester for 15, 59 and 26%, respectively; 50% presented fever, 94% arthralgia and 75% skin rash. The only difference between non-infected and infected women was the number of hospitalization during pregnancy (28 versus 42%, p=0.0001). Other outcomes, fetal loss and stillbirth (2.2 versus 2.0%), premature delivery (12 versus 10%), cesarean rates (18 versus 16%), birth weight (3067 versus 3121g), fetal malformations (5.0 versus 5.7%) and newborn hospitalization (6.7 versus 7.4%) were similar.
Conclusion:
We do not find any impact of Chikungunya infection on pregnancy outcomes except for the number of prenatal hospitalizations.