Objective

Since November 2015, a substantial increase in the number of cases of fetal and neonatal microcephaly associated with other severe brain abnormalities has been detected at the Federal University of Ceará, a state located in the Northeastern Brazil. The Maternity at the Hospital Federal University of Ceará is a public regional reference centre for high risk pregnancies attending around 5300 deliveries/year. After April 2016, a collaboration between the Federal University of Ceará and BCNatal- Centre de Medicina Maternofetal i Neonatal de Barcelona- has been established for the assessment of fetal sonographic and MRI images. Objective: To report maternal data and sonographic cerebral findings in fetuses diagnosed with microcephaly at the Federal University of Ceará during the current Zika virus epidemic.

Methods

Retrospective analysis of sonographic fetal findings in cases of microcephaly –defined as head circumference >3SD below the mean- diagnosed from November 2015 to April 2016. The prenatal study protocol included serial fetal scans, maternal serology (STORCH and Dengue) and a consultation with a clinical geneticist. Amniocentesis was offered for RT-PCR identification of Zika virus. After birth cord blood was obtained for RT-PCR but in most cases the results were not available. The Ministry of Health of Brazil considers a confirmed case of Zika fetal infection with suggestive imaging findings in the absence of other congenital infections.

Results

Over a 6-months period 14 fetuses with severe microcephaly and presumed Zika virus infection were diagnosed and delivered at the Maternity Hospital-Federal University of Ceará. The diagnosis was performed at a mean gestational age of 32 weeks (22-38 weeks). All fetuses showed additional brain abnormalities (parenchymal calcifications, ventriculomegaly, cortical atrophy, micrencephaly, cerebellum hypoplasia), limb abnormalities (2) and ocular calcifications (1). Maternal symptoms of infection were referred in 8 cases (7 in the first trimester and one in the second). An amniocentesis was performed in 5 patients with 2 positive and 3 negative results for Zika RT-PCR. There was one stillbirth and 3 early neonatal deaths. Among survivors, severe microcephaly was confirmed in all cases.

Conclusion

The recent outbreak of Zika virus in Brazil has been proven to have devastating fetal consequences. While the risk is real, its true proportion is yet to be defined, and general awareness needs to be maintained.