CMV infection: failure to predict long-term sequelae after infection in early pregnancy

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Objective

Congenital cytomegalovirus infection occurs in 0. 4-0. 8% of live births with 15-20% of infected children develop long-term disability including hearing loss developmental abnormalities. The risk of sequelae is higher following first trimester infection. The aim of this study was to assess long-term developmental outcome following primary CMV infection before 18 weeks' gestation and to evaluate our ability to predict long-term developmental outcome by prenatal imaging.

Methods

Fetal CMV infection was confirmed by viral DNA amplification by polymerase chain reaction in amniotic fluid obtained by amniocentesis at 22-24 weeks. Prenatal evaluation included monthly detailed US scans and MRI scan at 30-34 weeks of gestation. Long-term developmental outcome was assessed by questionnaire and by the Vineland adaptive behavior scale.

Results

124 patients with congenital CMV infection before 18 weeks were included in the study (107/118 -86. 3% 1st trimester infection). Twelve patients (all 1st trimester infection) have decided to terminate the pregnancy after proven vertical transmission without further evaluation. 108 patients were evaluated by prenatal sonography and MRI. Abnormal prenatal imaging (either US or MRI) was observed in 44 (41%) patients. 11 patients with severe abnormal US and MRI decided to terminate the pregnancy. 97 pregnancies resulted in live births. One neonate (with severe prenatal findings) suffered from severe symptomatic CMV infection. 95 children were assessed by questionnaire and 76/95 were evaluated by the Vineland behavior scoring scale at a median age of 3 years (range 6-120 months). Abnormal prenatal imaging were not significantly associated to NSHL (15% vs 22%, p=0. 43), severe SNHL (5% vs. 8%, p=1. 0), Hypotonia (5% vs. 9%, p=0. 5) or need for special care. There was no difference between both groups in the rate of abnormal Vineland behavior score (10% of children with mild delay in both groups) and the average score did not differ between both groups (39±23 vs. 46±20, p=0. 17). These results did not differ when restricted to 1st trimester infection.

Conclusion

In contrast to previous studies, absence of prenatal imaging findings does not reduce the risk of long-term sequelae after primary CMV infection in early stages of pregnancy.