Volumetric MRI study of the brain in fetuses with intrauterine CMV infection and its correlation to neurodevelopmental outcome

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Objectives:
To compare brain volumes of fetuses with CMV infection and non-infected controls and to assess if there is a correlation to their neurodevelopmental outcome.

Methods:
A retrospective cohort study examined MRI brain scans of 42 fetuses (at 30-34 weeks gestational age) that were diagnosed with intrauterine CMV infection. Volumetric measurements of 6 brain structures were assessed using a semi-automated designated program, and compared to a control group of 50 fetuses. Data collected included: prenatal history, MRI and sonographic findings, neuro-developmental follow-up.

Results:
• All brain volumes measured were smaller in the CMV-infected group.
• Correlation between smaller cerebellar volume and lower VABS-II questionnaire scores, especially in the fields of daily living and communication skills.

Conclusions:
• Brain volumes are affected by intrauterine CMV infection and it has a developmental prognostic meaning.
• Such information may help clinicians to further analyze imaging data, to treat and make a better assessment of these fetuses.