**Objectives:** In recent years efforts have been made to study three-dimensional biometry as a method for fetal brain assessment. In this study, we aimed to compare brain volumes of fetuses with CMV infection and non-infected controls. Also, we wanted to assess if there is a correlation to their neurodevelopmental outcome as observed after several years.

**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 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, neuro-developmental follow-up.

**Results:** We found that all brain volumes measured were smaller in the CMV-infected group and that there is a correlation between smaller cerebellar volume and lower VABS-II questionnaire scores, especially in the fields of daily living and communication skills.

**Conclusions:** In this study we found that brain volumes are affected by intrauterine CMV infection and that it has a developmental prognostic meaning. Such information, which should be supported by further research, may help clinicians to further analyse imaging data, and treat and make a better assessment of these fetuses.

## OP09.05
## Fetal neuroimaging findings, early neonatal outcomes and motor impairment in children with congenital Zika syndrome

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**Objectives:** To characterise the fetuses with congenital Zika syndrome (SZC) according to the pattern of neurological damage, neonatal outcomes and motor development in the first three years of life.

**Methods:** A cohort study with fetuses/children with SZC. Fetuses were characterised according to severity of neurological damage observed on obstetric ultrasonography (Sansung WS80 Elite) and fetal magnetic resonance (1.5T Espree Siemens). Two variables were considered: presence or absence of microcephaly (Intergrowth-21$^{st}$) and presence or absence of severe infratentorial structures. Motor function was evaluated using the Gross Motor Function Measure (GMFM) and classified using the Gross Motor Function Classification System (GMFCS). The study was approved by the local research Ethics Committee.

**Results:** 24 children were followed since pregnancy until the 3th year of life, with 15 cases of microcephaly (62.5%) and 11 cases (45.8%) of severe posterior fossa alterations. The median of the 1' and 5' Apgar scores was 8 and 9, with six death (25%) and nine arthrogryposes (37.5%). Most children at three years were classified as GMFCS V(83.3%), had seizures (83%) and the median GMFM was 23 (6-226). It was observed an association between the presence of severe infratentorial alterations and Apgar at 1' ($p = 0.008$), Apgar at 5' ($p = 0.005$), number of anticonvulsants ($p = 0.006$), arthrogryposis ($p = 0.0001$), death ($p = 0.003$) and GMFM in the third year of life ($p = 0.02$). Association between microcephaly was observed with motor development (GMFM), $p < 0.0001$.

**Conclusions:** Unfavourable outcomes were more frequent in fetuses that presented severe infratentorial alterations when compared to those who presented microcephaly.

Supporting information can be found in the online version of this abstract

## OP09.06
## Subtle findings on fetal brain imaging in CMV-infected patients: what is the clinical significance?

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**Objectives:** To describe the postnatal outcome of fetuses with CMV related subtle brain imaging findings.

**Methods:** This is a retrospective study of the imaging results from fetuses diagnosed with inconclusive imaging findings on MRI, with or without additional ultrasound findings. The data obtained included: obstetric history; amniocentesis results; neurosonography and brain MRI findings; pre- and postnatal imaging. In addition, we performed a developmental follow-up for all children.

**Results:** During 2015-2018, 27 fetuses matched the inclusion criteria. Of which, 74% (20/27) had subtle findings on MRI only (white matter hyperintense T2 signal (HIT2) [51.8%], mild ventriculomegaly (mVM) [18.5%], HIT2 signal + temporal cyst [7.4%], dilated occipital horn [7.4%], periventricular pseudo-cyst (PVPC) with a dilated occipital horn [3.7%], isolated PVPC [7.4%] and choroidal cyst [3.7%]). Twenty six percent (7/27) had additional subtle US findings (Lenticulostriatal vasculopathy (LSV) [n=3], LSV with periventricular pseudocyst (PVPC) [n=1], isolated PVPC [n=1], mVM [n=1]). Amniocentesis was positive in 15/27, whereas 12/27 declined amniocentesis. Postnatal urine test was negative in 8 of these 12, representing 66.6% false positive cases. MRI was inconclusive in all these 8 fetuses (HIT2 [n=5], mVM [n=2]), of which one had mild VM on both US+MRI. On follow up, all children are developing normally, and one child (3.7%) has unilateral hearing loss. Postnatal brain US was normal in 21/27 (77.7%). LSV was found postnatally in 5 and sub ependymal cyst which later resolved, in one newborn.

**Conclusions:** Subtle brain findings in CMV infected patients are more common on MRI than US and are most likely of minor clinical significance. Amniocentesis can significantly reduce the high rate of false positive subtle findings.

## OP09.07
## 3D multiplanar neurosonography in fetuses with abnormalities of the posterior fossa

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**Objectives:** An accurate categorisation of fetal upward rotation of the cerebellar vermis still remains a challenge in prenatal medicine. Recently, a new parameter of the posterior fossa (PF), the Vermian-Crest Angle (VCA), has been tested in normal pregnancies. Our aim was to assess the VCA in fetuses with a pathological PF at prenatal three-dimensioanal ultrasound (3D-US).

**Methods:** We measured by multiplanar 3D-US the VCA in fetuses with any PF anomaly. Two landmarks were used for the measurements: the nodulus vermis, at the level of the fastigial peak of the fourth ventricle and the internal occipital crest, visible posterior to the cerebellar vermis at the level of the attachment on the falx cerebella. Based on these landmarks, the VCA was measured, defined by the convergence of two lines: the first, tangent to the