Natural history of isolated fetal ventriculomegaly: agreement between pre- and postnatal imaging

Sheba Medical Center, Tel-Aviv, Israel

Objective
The aim of our study was to assess the natural history of the ventricular width during pregnancy and during the post-natal period.

Methods
Ninety two women were referred for lateral ventricular abnormality. All cases underwent serological tests, detailed anatomical scan, fetal brain MR imaging, genetic counseling and amniocentesis for karyotype. Cases with at least one dilated lateral ventricle ≥ 10 mm and a normal work up were considered idiopathic ventriculomegaly and comprised the study group for post-natal follow up (51 cases). Prenatal measurements were performed by ultrasound and MR imaging. Post-natal measurements were performed by trans-fontanellar sonography from one to 3 months after birth. The measurements were performed in the customary plane for each modality; axial plane for prenatal ultrasound, coronal plane for prenatal MRI, and para coronal for postnatal transfontanellar ultrasound.

Results
The 51 cases with at least one dilated lateral ventricle ≥ 10 mm and a normal work up comprised the initial study group; of them 31 cases had unilateral ventriculomegaly and 12 cases had both ventricles dilated. Seven cases with severe ventriculomegaly or associated anomalies elected termination of pregnancy. One case with severe ventriculomegaly died shortly after birth. Therefore, 43 cases comprised the study group. When comparing pre- and post-natal measurements, a statistically significant decrease in ventricular width (p<0.001) was observed between pre-natal measurements and post-natal measurements. These findings are consistent for maximal measurements obtained during pregnancy, as well as for the last measurement obtained during pregnancy by US or by MR imaging.

Conclusion
Our study indicates significant regression of prenatal isolated ventriculomegaly in the postnatal period. These findings may allow a reassuring approach in the multidisciplinary counselling of the future parents of a fetus with ventriculomegaly.