

## **Ultrasonography and magnetic resonance imaging in the measurements of the fetal brain structures**

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### **Objective**

To assess the level of agreement and correlation between the two cardinal imaging methods of fetal neuroimaging: Ultrasonography (US) and Magnetic resonance imaging (MRI), by measuring the corpus callosum (CC) and transverse cerebellar diameter (TCD), in terms of length and percentile.

### **Methods**

Measurements of CC and TCD length and percentile were documented over a 7-year span, in a tertiary referral medical center. All US and MRI examinations performed in the customary planes and subcategorized by valid reference charts. Exclusion and inclusion criteria were set before collection and processing of the data.

### **Results**

156 fetuses out of 483 included in the study. A positive strong correlation and agreement was found ( $r=0.78$ ;  $ICC=0.76$ ) between US and MRI in TCD measurements. In CC length measurement, a moderate correlation and moderate agreement ( $r=0.51$ ;  $ICC=0.49$ ) between US and MRI was observed. TCD and CC percentile, had lower level of correlation and agreement and comparing to the length variables.

### **Conclusion**

Our study indicates good agreement between MRI and US in the assessment of TCD measurement, as a part of antenatal neuroimaging. Furthermore, while the two techniques are not always compatible, they are complementary methods.