

## **Fetal brain ultrasonography and MRI of the corpus callosum and transverse cerebellar diameter**

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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) in 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 between the years 2012-2018 in a tertiary center. All US and MRI examinations were performed in the customary planes and were subcategorized by valid reference charts. Exclusion and inclusion criteria were set before the collection and processing of the data.

### **Results**

156 fetuses out of 483 included in the study. A positive strong correlation ( $r=0.78$ ) and a good agreement ( $ICC=0.76$ ) was found in the measurement of TCD length (mm). CC length (mm) had moderate agreement ( $ICC=0.49$ ). In comparison to the agreement of TCD and CC length (mm), TCD and CC percentile (%) had a lower level of agreement, moderate agreement for TCD percentile ( $ICC=0.44$ ) and fair agreement for CC percentile ( $ICC=0.36$ ).

### **Conclusion**

Our study indicates good agreement between MRI and US in the assessment of TCD length, as a part of antenatal neuroimaging. However, a good agreement between the two methods cannot always be expected, since each technique has its own distinct features.