

Traditional two-dimensional (2D) ultrasound has been and remains the mainstay of prenatal screening and diagnosis of congenital structural abnormalities. However, real clinical impact of the newer innovative methods (3D/4D ultrasound and MRI) remains to be unclear.

The aim of this study is to evaluate the impact of combined examination by ultrasound and fetal magnetic resonance on prenatal diagnosis of congenital defects and optimization of perinatal management. Both imaging methods were in our department performed on the same day by a single operator specialized in fetal medicine. Therefore, another aim of this study was to compare the importance of 2D and 3D/4D ultrasound and magnetic resonance for exactness of the prenatal diagnosis of congenital defects. 212 pregnancies were examined. 89% of patients were referred for abnormal or suspicious finding at local ultrasound examination and 11% for an increased risk of congenital defects due to an abnormal family history or an abnormal result of previous laboratory testing.

Detailed postnatal diagnosis was successfully retrieved in 113 (53%) of referred pregnancies. Only this group of pregnancies with known detailed postnatal diagnosis was used for the evaluation of the impact of combined imaging by ultrasound and magnetic resonance on prenatal diagnosis of congenital anomalies and for the comparison of the effectiveness of both these imaging methods. All pregnancies were grouped into one of six categories depending on the correlation between referral, our and postnatal diagnosis. Importance of our combined imaging was evaluated according to the amount of cases (in %) in each of these six categories.

There was found 94% agreement between postnatal and our combined diagnosis and only 80% agreement between referral and postnatal diagnosis. Moreover, our examination provided additional information in 68% of pregnancies with agreement between main referral and postnatal diagnosis.