



25. PRENATAL DIAGNOSIS OF FETAL FACIAL ABNORMALITIES IN THE FIRST TRIMESTER OF PREGNANCY

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Introduction. The fetal face is a complex anatomical structure due to its embryological elaborate development and represents an important key for fetal conditions and syndromes. Changes in the embryological development may lead from simple appearance deformities to serious conditions that may be very dangerous for the fetus' life.

Aim of study. Since three-dimensional (3D) and four-dimensional (4D) ultrasonography (US) started being used, remarkable progress has been made in the prenatal diagnosis of fetal facial anomalies, developing a new area named sonoembryology.

Methods and materials. We performed a search in the PubMed literature, regarding the ultrasonographic diagnostic tools for prenatal diagnosis of fetal face anomalies in the first trimester of pregnancy. The terms that we seek were: “two-dimensional ultrasonography”, “three-dimensional ultrasonography”, “four-dimensional ultrasonography”, “fetal face” and “anomalies”. We made a comparative essay between the ultrasonographic devices but also the Magnetic Resonance Imaging (MRI) tool that are used for the assessment of the fetal face conditions.

Results. The use of 3DUS and 4DUS is clearly superior to 2DUS for the first trimester evaluation of the fetal face structures and facial movements. MRI helps the assessment of fetal palate, cerebral structures and micrognathia. The diagnosis of fetal face malformations and various syndromes have become possible since the first trimester due to 3DUS and 4DUS but their treatment is still controversial.

Conclusion. Three-dimensional ultrasonography and four-dimensional ultrasonography allows the prenatal diagnosis of fetal cranial-facial anomalies. Moreover, it represents an important tool in the assessment of fetal neurobehaviour.

Keywords. Three-dimensional ultrasonography, four-dimensional ultrasonography, fetal facial anomalies, fetal neurobehavior.