New scoring system for fetal neurobehavior assessed by three- and four-dimensional sonography.

Original article - Fetus

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Abstract:
Aim: To produce a new scoring system for fetal neurobehavior based on prenatal assessment by 3D/4D sonography. We identified severely brain damaged infants and those with optimal neurological findings and compared fetal with neonatal findings.

Results: The new scoring system was retrospectively applied in a group of 100 low-risk pregnancies. After delivery, postnatal neurological assessment was performed, and all neonates assessed as normal reached a score between 14 and 20, which we assumed to be a score of optimal neurological development. Subsequently, the same scoring system was applied in the group of 120 high-risk pregnancies in which, based on postnatal neurological findings, three subgroups of newborns were found: normal, mildly or moderately abnormal, and abnormal. Normal neonates had a prenatal score between 14 and 20, mildly or moderately abnormal neonates had a prenatal score of 5-13, whereas those infants who were assigned as neurologically abnormal had a prenatal score from 0-5.

Conclusion: A new scoring system for the assessment of neurological status for antenatal application is proposed, similar to the neonatal optimality test of Amiel-Tison. This preliminary work may help in detecting fetal brain and neurodevelopmental alterations due to in utero brain impairment.

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