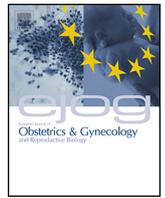




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Correspondence

Reply to correspondence: Prenatal diagnosis of central nervous system abnormalities: Neurosonography versus fetal magnetic resonance imaging

Dear Editors,

We read with interest the letter of Tanacan et al. [1], about the role of ultrasound i.e. Neurosonography (NS) compared to Magnetic Resonance Imaging (MR) in prenatal diagnosis of fetal brain malformations. According to the authors findings, it seems to be no significant difference between the diagnostic performance of these two tools, at any gestational age.

Several points however should be discussed. On the basis of current literature, in the last decades, fetal MR imaging has been a valuable adjunct tool to a detailed ultrasound examination due to its spread clinical use and rapid technological improvements such as ultra-fast imaging sequences and diffusion weighted imaging.

Although NS remains the mainstay choice in prenatal evaluation of fetal brain congenital anomalies owing to its low cost, easy availability and well-established literature, fetal MR imaging can provide useful complementary information showing several advantages: compared to NS, fetal MR overcome many technical challenges showing a higher sensitivity and specificity of in the diagnosis of corpus callosum abnormalities. In the assessment of the posterior fossa structures, fetal MR with its multiplanar capabilities can evaluate better the morphology of the vermis helping in the differential diagnosis of Dandy-Walker malformation; in addition, it is able to evaluate the supratentorial structures which are difficult to explore by NS, especially in the third trimester where ossification of the skull can limit ultrasound assessment of the posterior fossa structures [2]. Moreover, fetal MR imaging is particularly useful in monozygotic twin pregnancies complicated by twin-twin transfusion syndrome or co-twin fetal demise where NS may be unrevealing. Even in the assessment of fetal ventriculomegaly, for which it is well known an excellent agreement between NS and MR, the latter showed a better detection rate for some types of possible associated anomalies, particularly in the third trimester, highlighting an emerging role of fetal MR imaging in the definition of the prognosis of ventriculomegaly, with significant implications on parental counselling and perinatal management [3,4]. Recently, fetal MRI has become a valuable tool in the evaluation of open spinal dysraphisms for predicting the level of the spinal defect which has an impact on prenatal counselling, neurologic prognosis, and eligibility for fetal surgery [5]

Limitations of MR are particularly evident at lower gestational age (such as <20 weeks), when MR imaging may have a reduced specificity: this may be related to small size of some structures of

the brain, fetal motion and difficulty in obtaining a true mid-sagittal image. Follow-up MR imaging, either at a later gestational age or postnatally, is recommended in such cases [2].

In summary, magnetic resonance imaging is a safe and promising technique complement to neurosonography in prenatal evaluation of cerebral abnormalities and screening of high-risk fetuses. It can provide additional useful information that can alter clinical management in terms of prognostic value of the counselling. Radiologists and fetal medicine experts involved in the management should be aware of the potential and limitations of the available fetal imaging tools, to optimise the multidisciplinary care for pregnant women.

Declaration of Competing Interest

The authors have no conflict of interests to declare.

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