

News

**2005-12-14****Evidence mounts for the value of 3D and 4D ultrasound in obstetrics**

A review of the world's literature on 3D and 4D ultrasound in obstetrics finds that 3D provides diagnostic information over and above 2D for the diagnosis of facial anomalies, as well as the evaluation of neural tube defects and skeletal malformations.

The researchers who undertook this investigation, which collated data from more than 500 different papers, suggest that additional research is still needed to determine the eventual role of 3D and 4D ultrasound in detecting other central nervous system anomalies or heart problems in the foetus.

The project was led by Roberto Romero, professor of obstetrics and gynaecology at Wayne State University in the USA and chief of the perinatology research branch of the National Institute of Child Health and Human Development, part of the US National Institutes of Health in Bethesda, Maryland.

Prof Romero and his team used the internet to identify articles reporting on the use of 3D ultrasound or 4D ultrasound in obstetrics, and to discover the evidence that these approaches add diagnostic information to that currently provided by 2D ultrasound – and especially to identify areas where the newer techniques were of most value.

The team identified 706 papers, of which 525 were relevant as they dealt with technical developments or were clinical studies, reviews, editorials or studies on foetal behaviour or maternal-foetal bonding.

Although the review yielded substantial evidence that 3D ultrasound provides additional diagnostic information for the diagnosis of facial anomalies – especially facial clefts – compared with 2D ultrasound, the authors found that results from large studies that compared 2D and 3D ultrasound in the diagnosis of congenital anomalies have not been conclusive.

Nevertheless, Prof Romero and his team found evidence that 3D ultrasound provides more diagnostic information on neural tube defects and skeletal malformations than the older approach.

In addition to diagnostic superiority in a number of areas, the researchers also noted benefits in terms of efficiency. They commented, "Preliminary evidence suggests that sonographic tomography may decrease the examination time of the obstetric ultrasound examination." This improved speed appears to have minimal impact on the visualisation rates of anatomical structures.

Reference

"Three- and 4-Dimensional Ultrasound in Obstetric Practice: Does It Help?", Goncalves LF et al, *Journal of Ultrasound Medicine* 2005; 24, 12: 1599-1624

© Global News Services Ltd, 2005