

# Fetal Anomaly Diagnosis: MRI Adds Little to US

BY PATRICE WENDLING

HAMBURG, GERMANY — Magnetic resonance imaging has a limited role when added to ultrasound in the prenatal diagnosis of fetal anomalies, results of a prospective cohort study suggested.

“Prenatal ultrasound is accurate in over 90% of cases, and MRI adds significant information in [only] a minority of cases,” lead author Dr. Sandro Gabrielli said at the 19th World Congress on Ultrasound in Obstetrics and Gynecology.

In 273 consecutive patients, MRI was performed to evaluate its accuracy compared with ultrasound in cases that were included because they were complex, because they were difficult to diagnose with ultrasound, or because ultrasound quality was poor.

Both ultrasound and MRI findings were in agreement with postnatal diagnoses in

90% of cases. Ultrasound was better than MRI in an additional 1% of cases and MRI was better in an additional 6%. Both modalities missed anomalies in 3%.

MRI was performed by expert pediatric neuroradiologists and radiologists, who were blinded to the ultrasound findings. The mean gestational age at diagnosis was 28 weeks for ultrasound and 30 weeks for MRI, at a range of 24-32 and 26-34 weeks, respectively.

“It is impossible to identify specific indications for MRI, apart from cases in which ultrasound gives suboptimal results,” said Dr. Gabrielli of the department of obstetrics and gynecology at St. Orsola University Hospital in Bologna, Italy.

Relevant additional information was provided by MRI in 2 of 126 central nervous system anomalies, 4 of 42 thoracic

defects, and 2 of 35 abdominal malformations. Ultrasound provided extra information in one CNS anomaly, one thoracic defect, and one abdominal malformation. The seven cases in which both

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modalities failed to reveal anomalies were three cases of the rare cerebro-oculo-facio-skeletal syndrome, three CNS anomalies, and one abdominal malformation.

During a discussion of the study, audience members noted that both techniques are highly operator dependent. The ultrasound and MRI examiners in

the study were all experts, responded Dr. Gabrielli, who added that results did improve over the course of the series, which ran from 2001 to 2009.

Dr. Ilan Timor-Tritsch, who also presented during the session and is director of obstetrical and gynecological ultrasound at New York University Medical Center, called for the development of teams of obstetricians interested in all aspects of fetal ultrasound and MRI to improve diagnostic accuracy. “MRI, at least in the United States, is in many, many places the replacement for a poor ultrasound.” ■

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**Disclosures:** Dr. Gabrielli disclosed no conflicts of interest.

## Preeclampsia Tied to High TSH During, After Pregnancy

BY DAN HURLEY

New evidence has strengthened the link between preeclampsia and reduced thyroid function during pregnancy, and has shown that the association persists for decades.

Women who have had preeclampsia should be monitored for reduced thyroid function after pregnancy, according to Dr. Richard J. Levine.

“We can’t say for sure until we have some other studies out there that will link it more tightly,” Dr. Levine of the National Institute of Child Health and Human Development’s division of epidemiology, statistics, and prevention research, said in an interview. “But I think it’s worthwhile to look for reduced thyroid function in these women now. It’s such an easy test to do, and the treatment is so cheap. I think it should be done.”

In an article published online in *BMJ*, two separate studies were reported (2009 Nov. 17 [doi:10.1136/bmj.b4336]). In the first, Dr. Levine and his colleagues examined stored blood samples from a U.S. trial, Calcium for Preeclampsia Prevention, to check TSH levels early and later in pregnancy, in a comparison of 141 women who developed preeclampsia with 141 controls.

Whereas TSH did not vary significantly between the two groups early in pregnancy, by the time of delivery, those who developed preeclampsia had twice the risk of exhibiting high TSH levels, compared with controls.

Moreover, the increase in TSH level was significantly associated with increasing quartiles of soluble fms-like tyrosine kinase 1 (sFlt-1), which “may be responsible for the clinical phenotype of preeclampsia,” the investigators wrote.

In the second study, Dr. Levine and his

colleagues analyzed the Norwegian Nord-Trøndelag Health Study of 7,121 women who had given birth to a first child in 1967 or later, and measurements of thyroid function 20 or more years later. They found that those who had preeclampsia in their first pregnancy were 70% more likely to have high thyroid-stimulating hormone concentrations years later than were women who had not had preeclampsia. Those who had preeclampsia in two pregnancies had a nearly sixfold increased risk of high TSH levels.

“Increased circulating concentrations of [sFlt-1], most notably after onset of preeclampsia, were associated with subtle abnormalities of the thyroid during pregnancy. “These in turn may predispose to the development of reduced thyroid function and possibly overt hypothyroidism in later life,” they wrote.

“The hypothesis is fascinating and has to be explored further,” said Dr. Marshall D. Lindheimer, professor emeritus of obstetrics and gynecology and of medicine at the University of Chicago. ■

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## Study: IVIG Not Helpful in Recurrent Miscarriage

BY PATRICE WENDLING

ATLANTA — Intravenous immunoglobulin was not beneficial in the treatment of idiopathic secondary recurrent miscarriage in the largest prospective randomized IVIG trial in this setting.

The live birth rate was 70% for women who received intravenous immunoglobulin and 63% for those given saline in the phase III multicenter trial of 77 women with a history of pregnancy of at least 20 weeks followed by at least three unexplained miscarriages of less than 20 weeks, all with the current partner. The difference was not statistically significant.

Once a pregnancy reached 6 weeks’ gestation, the live birth rate was 94% in both groups, said Dr. Mary D. Stephenson, director of the recurrent pregnancy loss program at the University of Chicago.

Mean birth weights were significantly higher in the IVIG group at 3,711 g vs. 3,140 g in the control group (*P* value less than .010). When preterm infants and twins were excluded, however, birth weights were not statistically different (3,711 g vs. 3,358 g).

The study was designed to enroll 178 women, but was stopped early based on these interim results, said Dr. Stephenson, who called the key finding surprising.

She suggested that the favorable live birth rates in both groups may have been due to close monitoring with ultrasound in the first trimester and supportive care throughout the pregnancy, which have been shown to be advantageous in women with recurrent miscarriage.

“I also think it could be because we’re not yet there in being able to select the most appropriate patients that could benefit from such immunotherapy,” she said. “Only 18% of prior miscarriages had been sent for chromosome

testing, so that raises the question as to whether there were too many miscarriages that may have had random chromosome errors.”

A recent meta-analysis of eight randomized trials involving 442 women found a significant increase in live births following IVIG use in women with a secondary recurrent miscarriage (odds ratio, 2.71), while women with a primary miscarriage did not have the same benefit (OR, 0.66). The authors recommended further randomized trials, however, as the studies had small sample sizes and lacked homogeneity (*BJOG* 2007; 114:134-42). When data from the current study were combined with data from the four prior secondary miscarriage trials in the meta-analysis, the odds ratio for a live birth was 2.16, favoring IVIG, Dr. Stephenson said.

The current study enrolled 82 women and after 5 withdrawals, randomized 38 women to IVIG (Gamunex or Gamimune) 500 mg/kg and 39 women to an equivalent volume of normal saline infused prior to ovulation for a maximum of six cycles and continued every 4 weeks until 18-20 weeks of pregnancy.

There were 23 pregnancies in the IVIG group and 24 in the control group. There was no difference in mean maternal age (36 vs. 35 years), mean body mass index (26 vs. 25 kg/m<sup>2</sup>), smoking status (8.7% vs. 12.5%), or mean number of prior miscarriages (4.2 vs. 5.1). ■

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