Combined Tests Improve Delivery Timing in IUGR

**BY PATRICE WENDLING**
Chicago Bureau

**DALLAS** — The combination of biophysical and venous Doppler ultrasound parameters provided better timing of deliveries than did either test alone in a study of 584 fetuses with fetal growth restriction.

The prospective, multicenter observational study evaluated umbilical artery, ductus venosus and umbilical vein Doppler flows, and biophysical parameters as predictors of stillbirth, acidemia (cord artery pH less than 7.0) and/or a base deficit of more than 12), neonatal morbidity (intraventricular hemorrhage above grade 2, bronchopulmonary dysplasia, and necrotizing colitis), and neonatal mortality.

All outcomes increased significantly with umbilical artery reversal, abnormal ductus venosus and umbilical vein Doppler, and abnormal biophysical parameters. Dr. Ahmet Baschat and associates reported at the annual meeting of the Society for Maternal-Fetal Medicine. For all outcomes, combining the two testing modalities improved predictions.

The sensitivity to predict stillbirth was 81% for an abnormal Doppler, 70% for abnormal biophysical parameters, and 89% when both tests were used.

Similar improvements in sensitivity were observed with combined testing for acidemia (71% for abnormal Doppler, 63% for abnormal biophysical parameters, 88% for both); neonatal morbidity (35% for abnormal Doppler, 42% for abnormal biophysical parameters, 73% for both); and neonatal death within the first 28 days of life (74% for abnormal Doppler, 55% for abnormal biophysical parameters, 94% for both).

A total of 1,722 exams were performed on 584 fetuses at six centers in the United States, United Kingdom, and Germany. Fetal growth restriction was defined by a combination of abdominal circumference below the 5th percentile and more than a 2-standard-deviation elevation of the umbilical artery pulsatility index. Biophysical risk factors included gestational age, fetal movement, tone, breathing activity, heart rate, and amniotic fluid volume.

The average gestational age at birth was 32 weeks (range 24-41). The average birth weight was 1,190 g (390-2,100 g), and 452 babies were delivered by cesarean section.

The addition of Doppler correctly predicted 10 of 10 unexpected stillbirths that occurred within 1 week of being identified as normal by biophysical risk factors, and 23 of 97 neonatal morbidities after equivocal or abnormal biophysical findings.

**REFERENCES**


