Early Fetal Growth Rate Helps Predict Macrosomia

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO — Accelerated fetal growth in the midtrimester, as assessed by individualized growth potentials and ultrasound imaging, helped predict macrosomia in a study of 70 women who developed gestational diabetes.

"Early suggestion of accelerated fetal growth offers a window of opportunity to optimize glycemic management" of the mother and potentially prevent macrosomic stillbirth and perinatal morbidity, Dr. Anita Manogura reported in a poster presentation at the annual meeting of the Society for Maternal-Fetal Medicine.

By 24 weeks' gestation, LGA infants had a median estimated fetal weight in the 54th percentile, significantly higher than for normal-weight neonates.

She and her colleagues prospectively followed 70 women who went on to develop gestational diabetes. The women underwent serial assessments, including standardized ultrasound exams for nuchal translucency screening (11-14 weeks' gestation), detailed evaluation of anatomy (18-20 weeks' gestation), and formal fetal echocardiogram (22-24 weeks' gestation and then every 4 weeks thereafter), wrote Dr. Manogura of the University of Maryland, Baltimore, and her associates.

They used the Gardosi method to predict individual fetal growth potentials based on fetal gender and the mother's height, weight, parity, ethnicity, and other characteristics. Estimated fetal weights from imaging were converted to percentiles, with large for gestational age (LGA) defined as above the 90th percentile.

Early differences were seen between the 27 LGA infants and infants born at normal weights. By 24 weeks' gestation, LGA infants had a median estimated fetal weight in the 54th percentile, significantly higher than the 48th percentile for normal-weight neonates. At 24 weeks, an estimated weight that was above the 58th percentile predicted an LGA baby with a sensitivity of 30% and specificity of 84%.

If this trend continued at 28 weeks, then the odds of having an LGA baby were four times higher. At 28 weeks, future LGA babies were at a median 72nd percentile of estimated fetal weight, compared with the 51st percentile for normal-weight infants. An estimated fetal weight of greater than the 58th percentile at 28 weeks increased the sensitivity of predicting macrosomia to 63%, with a specificity of 87%.

"The potential to interrupt this progression by intensive midtrimester glycemic management deserves further study," the investigators concluded.

Elevated estimated fetal weight percentiles on ultrasound did not predict adverse perinatal outcomes such as shoulder dystocia, cesarean delivery, or neonatal complications. ■

Outcomes Improved With Low Threshold for GDM Diagnosis

BY SARAH PRESSMAN LOVINGER
Contributing Writer

Impaired maternal glucose tolerance can lead to poor pregnancy outcomes, and clinicians should use a lower threshold to diagnose and treat gestational diabetes, according to M. Kwik of the University of Sydney in Australia.

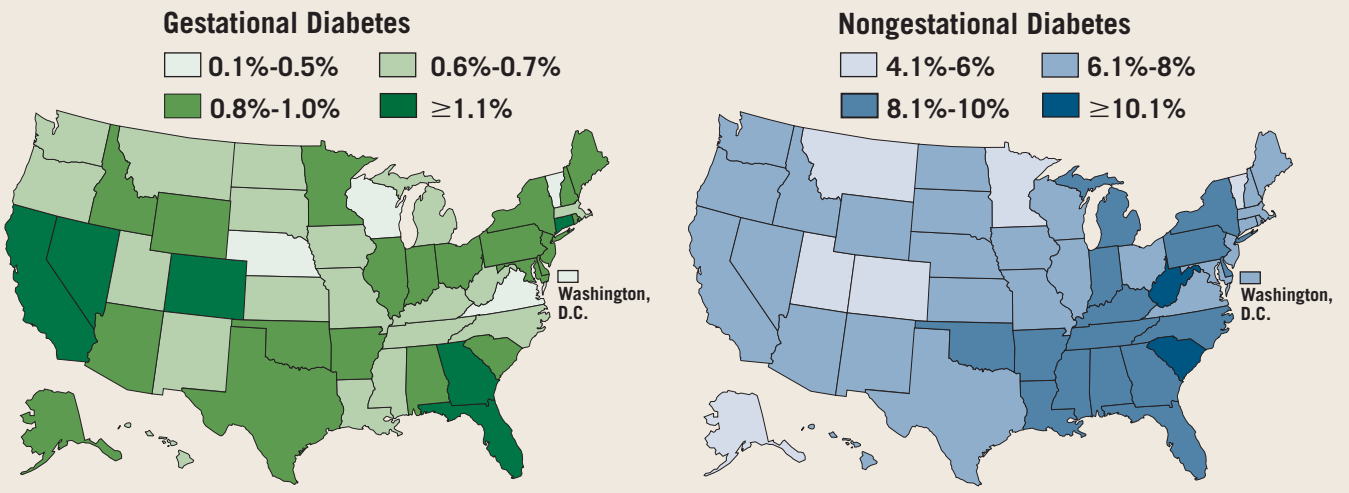
"Untreated glucose intolerance in pregnancy is associated with larger babies, more shoulder dystocia, and higher rates of preeclampsia," reported M. Kwik and colleagues in Diabetes Research and Clinical Practice (2007 [Epub doi: 10.1016/j.daibres.2006.12.004]).

The researchers conducted a retrospective study of women with a singleton pregnancy who received prenatal care at their hospital between February 2000 and May 2005. They excluded women who gave birth before 34 weeks' gestation. The researchers identified 512 women with a 2-hour glucose level of at least 7.8 mmol/L and a fasting glucose at or below 5.5 mmol/L following a 75-g glucose tolerance test (GTT). They obtained information on pregnancy outcomes for 478 (93%) of these women. The treated group comprised 265 women who had 2-hour glucose levels of more than 7.8 mmol/L and were diagnosed with gestational diabetes mellitus (GDM); these patients were managed according to guidelines. Another 213 women had 2-hour glucose levels of more than 7.8 mmol/L, but did not meet criteria for GDM. They constituted the untreated group. The researchers also evaluated 197 women with GTT values of 7.8 mmol/L or less who did not receive GDM management, and these participants were the comparison group. There were no significant differences in maternal age, body mass index, or proportion of primiparous women in the three groups.

The results showed a significant increase in mean birth weight, macrosomia, and shoulder dystocia in the untreated group, vs. the comparison group (5.2% vs. 1.0%). There was also a statistically significant increase in induction of labor rates in the untreated group, vs. the comparison group (27.7 % vs. 19.3 %). Additionally, the results showed a significantly higher preeclampsia rate in the untreated group vs. the comparison group (11.7% vs. 5.1%). The two groups' cesarean rates were similar. ■

DATA WATCH

Gestational Diabetes Follows Its Own Road



Note: Based on 2005 data from the Behavioral Risk Factor Surveillance System.
Source: Centers for Disease Control and Prevention

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Alpha Fetoprotein Adjustment in Diabetes May Be Insufficient

BY SHERRY BOSCHERT
San Francisco Bureau

SAN FRANCISCO — Adjustments made to maternal serum alpha fetoprotein values in pregnant diabetics may be inadequate to screen for neural tube defects or Down syndrome, Dr. Loralei L. Thornburg reported in a poster presentation at the annual meeting of the Society for Maternal-Fetal Medicine.

She and her associates studied data on 77 pregnant women with type 1 diabetes, 75 with type 2 diabetes, and 304 nondiabetic pregnant women with normal glucose levels who had maternal serum alpha fetoprotein (MSAFP) levels drawn between July 2001 and August 2003 at the same institution. MSAFP levels are used in prenatal screening for neural tube defects and Down syndrome. Previous studies have shown that MSAFP values are lower in type 1 diabetics than in nondiabetics, and MSAFP in type 2 diabetics is not well studied.

Usually clinicians apply a 20% upward adjustment of the MSAFP multiple-of-the-median value for pregnant type 1 diabetics, and they use a lower cutoff for normal to improve the sensitivity of screening for neural tube defects.

In the study population, a 10% correction factor appeared to be a more appropriate adjustment to MSAFP values in both type 1 and type 2 diabetics. In addition, correction for both diabetes and weight were needed to normalize MSAFP values, said Dr. Thornburg of the University of Rochester (N.Y.).

With the 20% correction factor, the MSAFP multiple-of-the-median value was significantly higher in both diabetic groups than in control patients. After the correction factor was decreased to 10% in the diabetes groups, the MSAFP multiple-of-the-median value did not differ significantly between the three groups. All medians were specific to gestational age and race. Fifty-five (73%) of patients with type 2 diabetes were on insulin therapy.

The MSAFP multiple-of-the-median values before correction for diabetes differed between patients with type 1 and type 2 diabetes until correction for weight.

Correction for weight and the 10% correction for diabetes were needed to control for significant differences between the control group and either diabetes group in MSAFP multiple-of-the-median values.

The retrospective study excluded patients with an MSAFP multiple-of-the-median value greater than 2.0, patients whose serum samples were drawn too early or redrawn, patients who underwent early chorionic villi sampling, and patients with fetal anomalies, aneuploidy, multiple gestations, or no information on diabetes type. ■