Time Crucial for Success in Perimortem C-Section

A review says 98% of babies born within 5 minutes of maternal cardiac arrest are neurologically intact.

BY MICHELE G. SULLIVAN
Mid-Atlantic Bureau

HOT SPRINGS, VA. — Placental growth factor, an angiogenic factor normally elevated in early pregnancy, may be a valuable biomarker for detecting pregnancies destined to become preeclamptic, said Dr. Ramsey Unal at the annual meeting of the South Atlantic Association of Obstetricians and Gynecologists.

Vascular growth factors are essential in creating and maintaining the placenta, said Dr. Unal, a resident at the Medical University of South Carolina, Charleston. Both placental growth factor (PIGF) and vascular endothelial growth factor (VEGF) are higher with chronic hypertension had slightly lower levels than did normal controls—an interesting relationship, Dr. Unal said. Preeclampsia is a disease of the placenta, and hypertension can also cause placenta problems.

PIGF levels could easily be drawn from quadriceps serum, added a mean glucose level of 7.4 mmol/L, vs. 6.9 mmol/L for mothers of AGA infants. Moreover, the portion of glucose values higher than the target goal was 42% for LGA mothers and 35% for AGA mothers. HbA1c levels were significantly higher in the LGA group than in the AGA group only in the third trimester (6.2 vs. 5.9).

Logistic regression of all third-trimester glycemic measures showed that the percentage of third-trimester glucose values above the target value posed an increased likelihood of bearing an LGA infant (OR 1.09; 95% CI 1.02-1.15). AGA infants had a mean birth weight of 3,119 g, vs. 3,830 g for the LGA infants.

Notably, the two groups of mothers, all of whom had been managed at the hospital before conception, had no preconception differences in glycemic parameters. Dr. Herranz and colleagues noted that their study supports the findings of prior studies that have pointed an effect of intermittent maternal hyperglycemia on fetal growth. "Interestingly, our data show that of all third-trimester glycemic parameters, the percentage of glucose values above glycemic target is the most powerful predictor of LGA infants," they wrote.

Third-Trimester Glucose Levels Most Predictive of LGA Infant

By John R. Bell
Associate Editor

A population of mothers with type I diabetes and their singleton infants, third-trimester glycemic measures were more predictive of bearing a large for gestational-age infant than were earlier parameters, and third-trimester episodic hyperglycemia was most predictive of all.

Dr. Lucrecia Herranz and colleagues at the University Hospital of La Paz in Madrid recruited from the hospital 73 mothers, who had given birth to 37 large-for-gestational-age (LGA) infants and 36 appropriate-for-gestational-age (AGA) infants. The investigators reported their findings in Diabetes Research and Clinical Practice (2007;73: 42-4).

After researchers controlled for tobacco smoking and history of microsomia, mothers of LGA infants had significantly higher mean overall glucose levels in all trimesters than did mothers of AGA infants. But the difference was most pronounced in the third trimester, when LGA infants' mothers registered a mean glucose level of 7.4 mmol/L, vs. 6.9 mmol/L for mothers of AGA infants.

Low Placental Growth Factor May Mean Preeclampsia Later

BY MICHELE G. SULLIVAN
Mid-Atlantic Bureau

A 2005 review identified 38 cases since 1986 in which the procedure was appropriately documented, and supported it for two reasons: to save the life of a viable fetus, and/or to maximize maternal responses to resuscitation (AJOG 2005;192: 196-21).

Difficult decisions abound in this kind of situation, both men said. The patient will not be physically or mentally able to give informed consent, and very often, no kin are available to help in that regard. Opinions differ on the importance of accurately assessing gestational age, which is best done via ultrasound. Dr. Marx advised against performing the procedure to try and save a fetus of less than 24 weeks. But some audience members commented that fetal age is irrelevant, since the primary indication should be to maximize maternal outcome.

A similar discussion arose around fetal heart rate: Whereas a good rate is a deciding factor for some physicians, others proceed with the delivery regardless of the rate, in the hopes of saving the mother's life.

"My counterpart would be this," Dr. Marx said. "Turning the mother onto her left side 50 to 30 degrees should help considerably in maximizing maternal response [by decreasing pressure on the inferior vena cava]. Secondly, if we think the fetus has no chance of survival, we may end up doing a thoracotomy on the mother, cross-clamping to eliminate any blood lost to the uterus. We want to be very, very cautious about delivering a fetus that is only semi-viable. That’s the conundrum.

The procedure demands a team effort by the most experienced people available. ‘You call obstetrics, you call surgery, and depending on the urgency of the situation, you may call pulmonology or general surgery. If there are extreme ventilatory support capabilities that you don’t have them,’ Dr. Marx said. ‘And this is not a procedure for a third-year medical student. You want the most competent person in the room, whether it’s the obstetrician or the emergency physician.’

The delivery is a midline craniotomy incision ‘from stern to stern’ through all tissue levels of the anterior uterus. ‘If the placenta is in the way, either push it aside or cut through it,’ Dr. Marx said.

Despite concerns about informed consent and the ethics of delivering a nonviable or impaired fetus, physicians who perform a perimortem C-section for the correct indication probably aren’t in legal danger. Dr. Gonik said: ‘No physician in the U.S. has ever been found liable in one of these cases. They typically do not go to court or get the physician or hospital in trouble because they were attempting to save the baby.’

However, he strongly cautioned, ‘Never perform this in anticipation of the mother arresting. If the patient is unstable and you proceed, you could push her into needing resuscitation.’