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

The indication for maternal salvage is a rather new thought, said Dr. Bernard Goñik, the Fann S. Sper Chair of Perinatal Medicine at Wayne State University. Decisions are data intensive and the procedure can dramatically improve maternal cardiac output by emptying the uterus so that it's not pressing on the vena cava and inhibiting return. This can improve cardiac output by 25%.

The pregnant uterus consumes a large amount of maternal blood, causing gravid women to become anoxic more quickly during a crisis. “That’s another reason to add C-section to your resuscitation efforts,” Dr. Goñik said.

The 2005 review included resuscitation information for 22 women; 12 of them showed profoundly increased response after the procedure. Of 20 potentially salvable mothers, 13 were discharged from the hospital in good condition.

Time is the most critical factor when a pregnant woman with a gestationally viable fetus arrests, both physicians said.

The earlier you deliver, the more likely you are to have a neurologically intact baby,” Dr. Goñik said, noting that the review indicated that 98% of babies born within 5 minutes of maternal arrest were neurologically intact.

Dr. Marx agreed. “If you get the fetus out within 5 minutes you have a good chance not only for it to survive but to have good neurologic outcome. If you wait 15 minutes, the chance of survival and good neurologic outcome is dim. I'm not sure which is worse from a legal perspective: to wind up with a baby who will never, ever be OK, or to wind up with a dead baby.”

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 one is 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 counterpoint would be this,” Dr. Marx said. “Turning the mother onto her left side 30 to 50 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 decide to perform the procedure to try and 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.”

Low Placental Growth Factor May Mean Preeclampsia Later

BY MICHÈLE 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, Dr. Ramsey Unal said 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 in early pregnancy and decrease as delivery approaches. Another factor, soluble FMS-like tyrosine kinase 1 (sFlt1), increases later in pregnancy and binds both PIGF and VEGF, decreasing its bioavailability as the pregnancy nears term.

“Normal pregnancy is a balancing act in angiogenesis,” Dr. Unal said. “At the beginning, during placation, you have a proangiogenic state and toward the end, in preparation for delivery; you shift to an antiangiogenic state. In preeclampsia, we think angiogenesis happens too early and is too exaggerated.”

Dr. Unal investigated the utility of using second-trimester PIGF and sFlt1 levels as predictors of preeclampsia. If the levels were already abnormal in the second trimester, she reasoned, they could easily be included in the quad screen to flag women at risk for preeclampsia.

Her retrospective study included 64 women: 21 of them developed preeclampsia and were delivered for that reason, 34 were healthy women with uncomplicated term deliveries, and 9 had chronic, prepregnancy hypertension. All the women had singleton pregnancies. Dr. Unal performed enzime-linked immunosorbent assay testing for PIGF and sFlt1 on stored quad screen serum samples obtained from these women at 16-24 weeks gestation.

PIGF was significantly lower in the group that went on to develop preeclampsia than it was in the normal control group, she said (mean 83.5 pg/mL vs. 133 pg/mL). There were no significant differences in sFlt1 levels between the groups. However, women with chronic hypertension had slightly, though not significantly, lower sFlt1 levels than did normal controls—an interesting result, said 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 Dr. Unal, making it a valuable biomarker to the routine screen. “But we need a large, prospective trial before any recommendations can be made,” she said.

Third-Trimester Glucose Levels Most Predictive of LGA Infant

BY JOHN R. BELL
Associate Editor

A population of mothers with type 1 diabetes and their singleton infants—third-trimester glucose 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;73:42-6).

After researchers controlled for tobacco smoking and history of microsomia, mothers of LGA infants had significantly higher mean overall glucose (mean 9.5 mmol/L) than did normal controls (mean 8.2 mmol/L) and 36 appropriate-for-gestational-age (AGA) infants. The investigators reported their findings in Diabetes Research and Clinical Practice (2007;73:42-6).

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