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

**By Michele G. Sullivan**

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**Riviera Maya, Mexico** — A peri-mortem cesarean section should be performed within 5 minutes of maternal cardiac arrest to maximize survival chances for both the fetus and its mother, presenters said at a conference on obstetrics, gynecology, perinatal medicine, neonatology, and the law.

"I've done it a dozen times in 28 years, and it's probably the most frightening thing you will ever encounter," said Dr. John Marx, chair of emergency medicine at the Carolinas Medical Center, Charlotte, N.C. "It is the fastest, hardest decision making you will ever do."

Only about 300 cases of perinatal cesarean section have been reported in the literature, and many of these were confounded by inadequate reporting of time from maternal injury, drawing into question whether the fetus had any chance of survival.

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 response to resuscitation (AJOG 2005;192:196-21).

Out of 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 fetus," Dr. Marx said. "The chances of survival are much better if you do this immediately."

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 de- ciding factor for some physicians, others proceed with the delivery regardless of the rate, in the hopes of saving the mother's life.

"My cornerstone point 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 you call pediatrics, and you seek extra- sound capabilities if 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 cranic vertical 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 perinatal C-section for the correct indication probably aren't in legal trouble. Dr. Marx 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."