

Transform Delivery Suite Into ICU for Emergencies

BY DAMIAN McNAMARA
Miami Bureau

MIAMI BEACH — Treat the labor and delivery suite like an intensive care unit when a maternal intrapartum emergency arises, Dr. Baha Sibai said during a presentation at an ob.gyn. conference sponsored by the University of Miami.

An obstetric emergency response team is vital. This team needs mandatory training in obstetric emergencies, including advanced life support, Dr. Sibai said.

In addition, there should be “fire drills” for common emergencies such as pulmonary edema, abruptio placentae, disseminated intravascular coagulation (DIC), and complications from acute fatty liver of pregnancy.

Increases in maternal age, obesity, nulliparity, and multifetal gestations are spurring a higher incidence of these intrapartum emergencies.

“We are also seeing more women with severe, preexisting conditions, such as cystic fibrosis. I also have two women on dialysis now,” said Dr. Sibai, professor and chairman of obstetrics and gynecology at the University of Cincinnati.

Mandatory policies and procedures for physicians responding to maternal intrapartum emergencies should be required, as they are for nurses, Dr. Sibai said. “Some of you will not like this, but you cannot let every physician do what they want.”

Immediate resuscitation and support of the cardiovascular, respiratory, central nervous, and renal systems are important. Also check and continuously monitor hemostasis, electrolytes, and vital signs, he said.

Act quickly. “You cannot delay things 1 or 2 hours—it may be too late to do anything,” Dr. Sibai said.

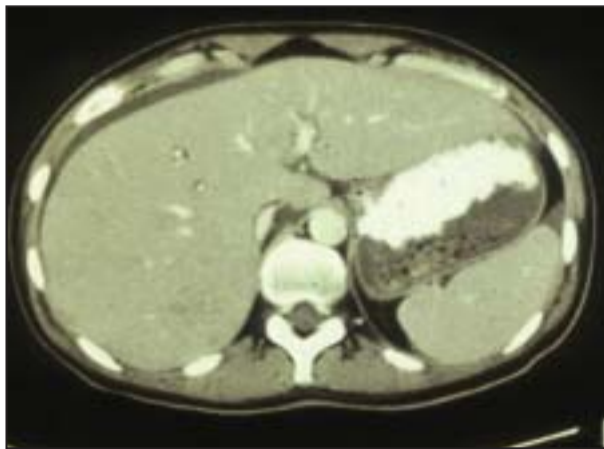
Consider crystalloids, colloids, blood and blood products, inotropic agents, and vasopressors for maternal cardiovascular support, Dr. Sibai suggested.

Options for respiratory support include mechanical ventilation, placement of an oro- or nasopharyngeal airway, or administering oxygen by continuous positive airway pressure (CPAP). “A CPAP mask avoids intubation, but if respiratory distress is severe, intubate and ventilate,” he advised.

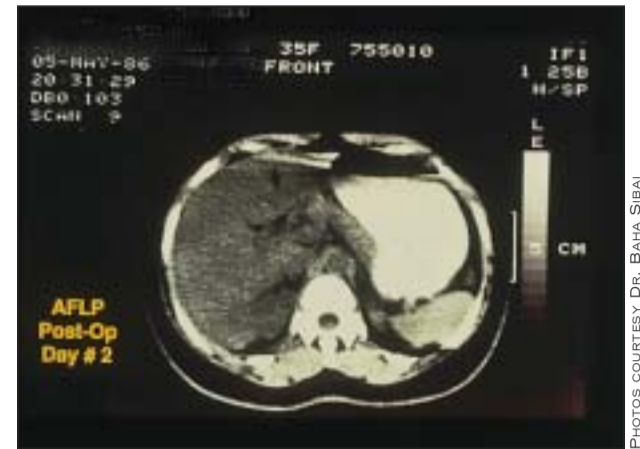
“You need to know how much oxygen you can deliver by different modalities,” Dr. Sibai said. “If you don’t know, ask an anesthesiologist. And remember that none of this matters if you don’t have adequate circulation,” Dr. Sibai said.

Some of the more common maternal intrapartum emergencies include the following:

► **Pulmonary edema.** Preeclampsia and eclampsia are the leading causes, but the condition also can be caused by tocolytics, cardiac disease, and infections such as



HELLP syndrome (above) has overlapping symptoms and laboratory findings similar to acute fatty liver.



The altered texture of a fatty liver on CT image can help distinguish these patients from those with HELLP.

pyelonephritis or varicella pneumonia. Pulmonary edema in preeclampsia is associated with capillary endothelial damage, Dr. Sibai said, which can cause increased permeability, increased interstitial oncotic pressure, and sepsis.

Tocolytics can cause increased capillary wedge pressure, fluid overload, and a need for blood transfusion, Dr. Sibai said, particularly in women with underlying risk factors.

There can also be high output failure caused by multifetal pregnancy, anemia, infection, thyroid disease, or tachycardia.

Treatment of pulmonary edema includes stopping tocolytics, placing the patient in a 45-degree position, giving morphine sulfate 10-15 mg IV, or giving furosemide 20-40 mg IV.

► **Abruptio placentae.** Risk factors for abruptio placentae include preterm premature rupture of the membranes, preeclampsia/hypertension, major abdominal trauma, and substance abuse.

“If the abruptio is occult—you don’t see blood—these are the highest risk [cases] for the baby.” By the time you perform a cesarean section, the baby will be dead, Dr. Sibai said.

If a patient presents with abruptio placentae and DIC, give four units of packed red blood cells right away, Dr. Sibai said. “Don’t use your brain or think. Just administer, and don’t give just one or two units.”

Also give four units of fresh frozen plasma, administer platelets if levels are below 40,000, and monitor coagulation studies. Maintain renal perfusion and deliver the baby.

► **Disseminated intravascular coagulation.** There are three types of disseminated intravascular coagulation. DIC of consumption is very easy to correct, Dr. Sibai said.

Once you remove the placenta, the patient will be back to normal within 24 hours. DIC as the result of production (for example, from a fatty liver) can be very difficult and take a week or more to correct. Dilutional DIC occurs when a patient is losing coagulation factor through blood loss while an anesthesiologist is giving fluid. “This is when you have to start calling for fresh frozen plasma,” Dr. Sibai said.

Other treatment options include packed red blood cells, platelets, cryoprecipitate, and recombinant factor VII. “You need these things handy, along with people who know how to use them,” Dr. Sibai said. “A lot of anesthesiologists are familiar with these things, so make use of them.”

► **Acute fatty liver of pregnancy.** “Women with fatty liver are among the sickest women you will see,” Dr. Sibai said, and a differential diagnosis from HELLP [hemolysis, elevated liver enzymes, and low platelet count] syndrome is important because of overlapping symptoms and laboratory findings.

The urine of women with acute fatty liver is tea colored—very different from the urine of women with HELLP, Dr. Sibai said. A low fibrinogen level (below 300 mg/dL) is almost always only acute fatty liver, he added.

The altered texture of a fatty liver on CT image can also help distinguish these patients from those with HELLP syndrome, Dr. Sibai said.

Acute renal failure is common in women with acute fatty liver but not very common in HELLP. These women can also develop pulmonary edema, metabolic acidosis, and pancreatitis, Dr. Sibai said. “Acute fatty liver is a metabolic disorder; preeclampsia and HELLP are ischemic disorders. The problem with the baby is acidosis, not hypoxia, with acute fatty liver.”

Offer Epidural at Second Pain-Med Request in Preterm PROM

BY DIANA MAHONEY
New England Bureau

SAN FRANCISCO — Women with preterm premature rupture of membranes who request pain medication twice within a 3-hour time period for regular painful contractions should be offered epidural analgesia, inasmuch as they are highly likely to deliver with the ensuing 24 hours, a study of more than 1,600 patients has shown.

A retrospective review of 1,608 women with premature rupture of membranes (PROM) and 74 women with preterm PROM (PPROM) showed that the majority of the PPRM group delivered within 24 hours of their second request for analgesia, yet they were significantly

less likely to receive an epidural, compared with women in the PROM group, reported Melanie Chichester, R.N., and colleagues in a poster presentation at the annual meeting of the Society for Maternal-Fetal Medicine.

Because digital examination is precluded in women with PPRM, onset of labor is difficult to determine and timely administration of epidural analgesia can be challenging, Ms. Chichester said.

For this reason, she and colleagues at Christiana Care Health Systems in Newark, Del., sought to assess whether contractions sufficient to cause a second maternal request for analgesia within a 3-hour time period could be substituted for contractions with cervical change as a maker of labor onset.

The investigators reviewed all admissions to their institution with confirmed PROM and PPRM from January 2004 through June 2005.

For analytical purposes, women with rupture of membranes after 24 weeks’ and before 34 weeks’ gestation were categorized as having PPRM and those with rupture of membranes at week 34 or later were classified as having PROM.

Among women with PPRM, the median time to delivery was 6.62 hours from the time of second request for analgesia, Ms. Chichester said.

Additionally, in the PPRM population, a total of 82% of the women delivered within 24 hours and 96% delivered within 48 hours of their second request for analgesia.

Compared with 79% of the PROM group who received an epidural following their second request for pain medication, only 42% of the PPRM group received an epidural, she said.

Although the study is limited by its retrospective design and small sample size, the findings suggest “it is incumbent upon the obstetrician to offer the same level of pain management to the laboring woman with PPRM as to any other parturient,” said Ms. Chichester.

For the relatively small percentage of women who do not deliver in the subsequent 48 hours, the epidural may be discontinued or active management of labor may be considered, depending on presence or absence of signs of infection, she said.