

Preterm Labor Update

Preterm birth is the leading cause of neonatal mortality in the United States, and preterm labor precedes approximately 40-50% of preterm births. In the United States 12.1% of all births are preterm, in Iowa that percentage is 11.6%. These births account for 75% of neonatal mortality and 50% of long-term neurologic impairments in children. Despite numerous management methods used in the last 40 years, the incidence of preterm birth has not changed. The following is a summary of ACOG's Practice Bulletin on "Management of Preterm Labor" published in May 2003 (#43).

Background Information

The definition of preterm labor is regular contractions that occur before 37 weeks of gestation and are associated with cervical change. Most women with presumptive preterm labor will not have preterm delivery. It is important to remember that many preterm births are preceded by rupture of membranes or other medical problems, these issues will not be discussed at this time. Historically, many interventions have been used without any evidence to support their use. These include bed rest, abstinence from intercourse and orgasm, and hydration. This ACOG publication does not recommend their continued use.

Antibiotic Treatment

Antibiotic treatment has been utilized based on the theory that infections or inflammation is associated with contractions. Studies have shown mixed results and fail to show benefit. Treating women in preterm labor with antibiotics for the sole purpose of preventing preterm delivery is not recommended. It is suggested that protocols for antibiotic prophylaxis against early-onset group B streptococcal sepsis be followed as outlined by the CDC.

Antenatal Corticosteroids

Betamethasone or Dexamethasone significantly reduces the incidence and severity of neonatal respiratory distress syndrome. Its' use also shows a decrease in intraventricular hemorrhage and necrotizing enterocolitis, as well as neonatal mortality. All women who are at risk for preterm delivery between 24 and 34 weeks are potential candidates for

administration of one of these steroids. Only one course is recommended during the pregnancy.

Tocolytic Medications

Many agents have been used and studies are conflicting regarding their effectiveness. All have demonstrated only limited benefit. There is no clear first-line tocolytic drug. The prolonged use of any tocolytic drug may potentially increase the maternal-fetal risk without offering a clear benefit. Combining tocolytic drugs potentially increases maternal morbidity and should be used with caution. Recently the University of Iowa Hospital Department of Obstetrics decided to use Nifedipine (Procardia) as their primary tocolytic based on the recommendation of the Cochrane database. Oral administration of Nifedipine reaches maximum plasma levels in 20-30 minutes and the half-life is 1-1 1/2 hours. Nifedipine causes vasodilation and decreased vascular resistance. The most common maternal side effects include facial flushing, headache, and nausea, others are palpitations, transient tachycardia, and lightheadedness. It is contraindicated in liver disease, hypotension, congestive heart failure, and aortic stenosis. No neonatal side effects have been reported. Suggested schedule of administration is 10 mg orally every 20-30 minutes for up to 40 mg in an hour, then 10-20 mg every 4-6 hours. Monitor blood pressure and pulse, FHR, and uterine activity every 15 minutes x 2 following initial dose and prior to each subsequent dose. Hold the medication if BP < 100/60 and pulse > 120 and notify the physician.

Questions and Answers

Should treatment be repeated? The benefits are uncertain.

Should an amniocentesis be performed? Could be useful if maturity is a possibility or to establish intraamniotic infection, but results might not be available quickly enough to affect decision-making.

Should multiple gestations be any different than singletons in treating? No, but remember these women are at greater risk for pulmonary edema when given beta-mimetics or magnesium sulfate.

Is there a benefit of tocolytics for the neonate? Yes, because time allows the administration of steroids or the mother to be transported to a tertiary hospital for resuscitation of the baby.

What about fetal fibronectin and vaginal ultrasound? Their benefit is in the ability to predict women who are least likely to deliver, therefore, avoiding unnecessary intervention.

Anything new in this area? In selected high-risk population for preterm labor, progesterone suppositories or injections may be beneficial.

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