

Cesarean Time Longer in Older, Overweight Women

BY JANE SALODOF MACNEIL
Southwest Bureau

SCOTTSDALE, ARIZ. — A prospective observational study of 1,656 cesarean deliveries has produced a detailed portrait of factors leading to longer than usual operating times and the effects of long procedures on pregnancy outcomes.

Cesarean delivery is likely to be prolonged when a woman is older or overweight, according to data presented by investigator Everett F. Magann, M.D., at the annual meeting of the Central Association of Obstetricians and Gynecologists. He reported maternal age above 35 years and a body mass index of 30 kg/m² or greater were significant factors.

Dr. Magann suggested that physicians may want to request stronger backup when operating on a woman who is older and overweight. "Maybe call a partner in and get more experienced help," he said, noting that longer procedures had negative effects on pregnancy outcomes.

"The most significant is that blood loss was increased, so you want to do your operation in a timely manner," Dr. Magann of the Naval Medical Center in Portsmouth, Va., said in an interview.

He and his associates were surprised by two factors that turned out not to prolong cesarean delivery. "Surprisingly, endometriosis and wound separation were unrelated to the operation time," they reported in a list of conclusions on the poster.

In the interview, Dr. Magann mentioned another surprise: "We didn't find [that] the longer you operate, the greater your risk of infection," noting that increased risk of infection is often assumed in this situation.

Women with preexisting hypertension or a low segment transverse scar from a previous cesarean operation were more likely to have longer procedures. Other factors adding significantly to time in the

operating room were a uterus incision other than a transverse incision, having a first year resident as the primary physician, and performance of a sterilization procedure during the operation.

Blood loss in excess of 1,000 mL was more than twice as likely (odds ratio 2.16) in operations lasting 30-60 minutes, compared with those lasting 30 minutes or less. The odds ratio rose to 6.93 in operations that lasted longer.

Patients whose surgeries lasted longer than 60 minutes were nearly three times more likely to have their umbilical artery pH level below 7.1 and for their babies to have Apgar scores below 7 at 5 minutes.

Risk of respiratory distress syndrome also increased with longer operating time; the odds ratio became 2.43 at 30-60 minutes and 4.07 after 60 minutes.

Nearly three-quarters (1,207/1,656) of women in the study were African American; 19% (315/1,656) were white. The women, more than half of whom were nulliparous, were 24.8 years old on average.

The investigators reported that 693 women had a previous cesarean delivery. About a third of this group (232 women) had at least two prior cesarean deliveries.

Complications occurred in 728 pregnancies. Preeclampsia was the most common, occurring in 337 women. It was followed by gestational diabetes in 134 women, preterm premature rupture of membranes (76), congenital abnormalities (53), and intrauterine growth restriction (28).

Forty minutes was the median operative time in the study, which divided the women into three cohorts for the analysis. Only 386 deliveries (23%) were completed in 30 minutes or less. Nearly two-thirds (1,070 deliveries) took 31-60 minutes. The remaining 200 deliveries lasted longer than 60 minutes.

The only factors that shortened delivery time were maternal age less than 18 years and fetal distress. ■

Obesity Before Pregnancy May Lessen Chance of Labor Induction Success

SCOTTSDALE, ARIZ. — The more obese a woman is before becoming pregnant, the lower her chances will be for successful induction, according to researchers who reviewed computerized records of 45,998 pregnancies in a German database.

Rabbie Hanna, M.D., and his colleagues reported the rate of successful labor induction fell from a high of 79% for women of normal weight with a body mass index (BMI) below 25 kg/m² to a low of 48% in morbidly obese women with a BMI of 40 kg/m² or higher.

The researchers from Wayne State University in Detroit computed success rates of 71% for overweight women with a BMI range of 25-29 kg/m², 69% for women with class I obesity of 30-34.9 kg/m², and 65% for women with class II obesity of 35-39.5 kg/m².

"We saw that as obesity increases, normal labor decreases and induction of labor increases," Dr. Hanna said at the annual meeting of the Central Association of Obstetricians and Gynecologists, where he presented the data in a poster.

The study mined a perinatal database of 170,258 cases collected from 1991 to 1997 in the state of Schleswig-Holstein. The investigators selected nulliparous, low-risk women who came to full term with singleton pregnancies. Prepregnancy height and weight had to be in the database for a woman to be included in the analysis.

Among the 45,998 pregnancies that fit these criteria, there were 898 pregnancies that ended in elective cesarean section and 45,100 in which the women underwent labor (6,427 required induction).

—Jane Salodof MacNeil

DRUGS, PREGNANCY, AND LACTATION

GI Agents: Part I

Gastrointestinal complaints are common in pregnancy and the postpartum period. They include conditions such as nausea and vomiting, constipation, diarrhea, heartburn, and erosive gastroesophageal reflux disease, which may be treated with the following products:

► **Antiemetics.** Nausea and vomiting is the most frequent GI complaint in pregnancy. A wide range of oral and parenteral antiemetics is available to treat nausea and vomiting of pregnancy (NVP). All are considered low risk for developmental toxicity (growth retardation, structural defects, functional and behavioral deficits, or death). The most commonly prescribed over-the-counter agent for this condition is doxylamine (Unisom), usually combined with vitamin B₆ (pyridoxine). These two drugs were the components of Bendectin, which was removed from the market by its manufacturer in 1983, but classified by the Food and Drug Administration as safe and effective. Other common oral medications for NVP include prochlorperazine (Compazine), metoclopramide (Reglan), trimethoprim (Tigan), promethazine (Phenergan), and ondansetron (Zofran).

Hyperemesis gravidarum, requires intravenous antiemetics, such as droperidol (Inapsine), prochlorperazine, and ondansetron.

► **Laxatives.** There are seven types of products that act as laxatives: saline (phosphates and magnesium hydroxide and its salts), stimulants/irritants (cascara, bisacodyl, casanthranol, senna, and castor oil), bulking agents (methylcellulose, polycarbophil, and psyllium), emollient (mineral oil), fecal softeners (docusate), hyperosmotics (glycerin, lactulose), and tegaserod (Zelnorm).

With the exception of lactulose and tegaserod, these products are available over the counter. Most do not cause direct embryo/fetal toxicity. However, castor oil, which is converted to ricinoleic acid in the gut, is an irritant that may induce premature labor. Improper use of saline laxatives can cause electrolyte imbalances, and mineral oil will prevent absorption of fat-soluble vitamins.

Of the laxatives, bulking agents and fecal softeners are the best in pregnancy. Cascara sagrada and senna are excreted into breast milk and are compatible with breast-feeding, although they may cause diarrhea in a nursing infant.

Tegaserod, a serotonin type-4 receptor agonist, is approved for women with irritable bowel syndrome whose primary bowel symptom is constipation (and for idiopathic constipation in those under age 65). Limited animal and human data suggest a low risk for embryo/fetal toxicity.

► **Antidiarrheal agents.** The antidiarrheal agents diphenoxylate and its active metabolite, difenoxin, are meperidine-related narcotics. Available as Lomotil and Motofen when combined with atropine to prevent abuse, they present low risk in pregnancy. Although there is potential for toxicity in a nursing infant, infrequent use is probably compatible with nursing. Loperamide (Imodium) is low risk in pregnancy and lactation. Alosetron (Lotronex), a serotonin antagonist, has both antiemetic and antidiarrheal properties. It is indicated only in women with IBS whose primary symptom is severe, chronic diarrhea. Based only on animal data, it is considered low risk in pregnancy. Because severe GI toxicity has been reported in adults, it should be avoided during lactation. Bismuth subsalicylate, such as Pepto-Bismol and Kaopectate, should not be used in pregnancy or lactation since metabolism releases salicylate.

► **Antacids.** Types to treat heartburn include calcium carbonate, magnesium hydroxide and oxide, and aluminum hydroxide and carbonate. Since systemic absorption of antacids is negligible, recommended doses are safe in pregnancy and lactation. Sodium bicarbonate should be avoided because it is absorbed systemically and could cause alkalosis.

► **Antisecretory agents.** These agents, used for heartburn and GERD, include the histamine H₂ antagonists cimetidine (Tagamet), famotidine (Pepcid), nizatidine (Axid), and ranitidine (Zantac) and the proton pump inhibitors esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec), pantoprazole (Protonix), and rabeprazole (Aciphex). Low strengths of the histamine antagonists are available over the counter, but omeprazole is the only PPI that is available without a prescription. All of these antisecretory agents are low risk in pregnancy. The histamine antagonists are also compatible with breast-feeding. In contrast, the PPIs have carcinogenic and mutagenic properties, so prolonged use during lactation should be avoided.

Misoprostol (Cytotec), another antisecretory agent and a prostaglandin E₁ (PGE₁) analogue, is a proven human teratogen. It should only be used in pregnancy for its off-label indications: uterine stimulation and cervical ripening.



BY GERALD G. BRIGGS, B.PHARM.

Mr. Briggs is pharmacist clinical specialist, Women's Pavilion, Miller Children's Hospital, Long Beach, Calif.; clinical professor of pharmacy, University of California, San Francisco; and adjunct professor of pharmacy, University of Southern California, Los Angeles. He is also coauthor of the reference book "Drugs in Pregnancy and Lactation."

► **Antisecretory agents.** These agents, used for heartburn and GERD, include the histamine H₂ antagonists cimetidine (Tagamet), famotidine (Pepcid), nizatidine (Axid), and ranitidine (Zantac) and the proton pump inhibitors esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec), pantoprazole (Protonix), and rabeprazole (Aciphex). Low strengths of the histamine antagonists are available over the counter, but omeprazole is the only PPI that is available without a prescription. All of these antisecretory agents are low risk in pregnancy. The histamine antagonists are also compatible with breast-feeding. In contrast, the PPIs have carcinogenic and mutagenic properties, so prolonged use during lactation should be avoided.

Misoprostol (Cytotec), another antisecretory agent and a prostaglandin E₁ (PGE₁) analogue, is a proven human teratogen. It should only be used in pregnancy for its off-label indications: uterine stimulation and cervical ripening.

► **Antisecretory agents.** These agents, used for heartburn and GERD, include the histamine H₂ antagonists cimetidine (Tagamet), famotidine (Pepcid), nizatidine (Axid), and ranitidine (Zantac) and the proton pump inhibitors esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec), pantoprazole (Protonix), and rabeprazole (Aciphex). Low strengths of the histamine antagonists are available over the counter, but omeprazole is the only PPI that is available without a prescription. All of these antisecretory agents are low risk in pregnancy. The histamine antagonists are also compatible with breast-feeding. In contrast, the PPIs have carcinogenic and mutagenic properties, so prolonged use during lactation should be avoided.

Misoprostol (Cytotec), another antisecretory agent and a prostaglandin E₁ (PGE₁) analogue, is a proven human teratogen. It should only be used in pregnancy for its off-label indications: uterine stimulation and cervical ripening.

► **Antisecretory agents.** These agents, used for heartburn and GERD, include the histamine H₂ antagonists cimetidine (Tagamet), famotidine (Pepcid), nizatidine (Axid), and ranitidine (Zantac) and the proton pump inhibitors esomeprazole (Nexium), lansoprazole (Prevacid), omeprazole (Prilosec), pantoprazole (Protonix), and rabeprazole (Aciphex). Low strengths of the histamine antagonists are available over the counter, but omeprazole is the only PPI that is available without a prescription. All of these antisecretory agents are low risk in pregnancy. The histamine antagonists are also compatible with breast-feeding. In contrast, the PPIs have carcinogenic and mutagenic properties, so prolonged use during lactation should be avoided.

Mr. Briggs is pharmacist clinical specialist, Women's Pavilion, Miller Children's Hospital, Long Beach, Calif.; clinical professor of pharmacy, University of California, San Francisco; and adjunct professor of pharmacy, University of Southern California, Los Angeles. He is also coauthor of the reference book "Drugs in Pregnancy and Lactation."