Early Amniotomy Shortens Labor in Nulliparas

BY SUSAN LONDON

FROM THE ANNUAL MEETING OF THE SOCIETY FOR MATERNAL-FETAL MEDICINE

SAN FRANCISCO – Early amniotomy appears safe and efficacious for shortening labor at term in nulliparous women having an indication for labor induction, according to results of a randomized controlled trial.

Among the 585 women studied, the average time from induction to delivery was 2.3 hours, or 11% shorter with early amniotomy vs. standard care, investigators reported at the meeting. This benefit was achieved without an increase in rates of maternal or neonatal infections.

"Based on this clinical trial, it would seem that early amniotomy may be a useful adjunct for nulliparous labor inductions," said Dr. George A. Macones, the Mitchell and Elaine Yanow Professor and chair of the department of ob.gyn. at Washington University in St. Louis.

Many studies have evaluated different methods of labor induction, he noted. "However, surprisingly, there are very few data on the timing of amniotomy in labor induction and how this may improve or worsen outcomes."

Amniotomy is easy and inexpensive and may shorten labor, according to Dr. Macones. But it also may be associated with rare complications such as umbilical cord prolapse, and possibly with an increased infection risk resulting from a longer duration of ruptured membranes.

Women were eligible for the trial if they were nulliparous, had a singleton pregnancy, were at term (37 weeks' gestation or later), and needed induction as determined by their treating physician. They were excluded if they were HIV positive or had cervical dilatation exceeding 4 cm at the time of admission to labor and delivery.

The women were randomly assigned in a 1:1 ratio to nonblinded management with either early amniotomy (defined as artificial rupture of membranes performed when cervical dilatation was equal to or less than 4 cm) or standard care (defined as artificial rupture of membranes performed when cervical dilatation was greater than 4 cm). The primary method of induction (misoprostol, cervical Foley catheter, oxytocin, and/or prostaglandin gel) was left to the treating physician's discretion. "Just to be clear, we did not study the timing of amniotomy as a primary method of induction, but rather as an adjunct to other methods," Dr. Macones noted.

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DR. MACONES

All other decisions about intrapartum and postpartum care were similarly left up to the treating physicians. The 585 women randomized were 23 years old on average, and the majority (70%) was black. Almost a third had gestational hypertension or preeclampsia, and another third were positive for group B streptococcus. The mean gestational age was about 39.5 weeks, and the mean cervical dilatation was 1.1 cm on admission. The leading indications for induction were a gestation past 40 weeks (39%) and gestational hypertension or preeclampsia (28%).

The primary methods of induction used were similar across groups. In nearly three-fourths of women, the treating physicians used multiple methods.

Most women received epidural analgesia, with no difference between groups, according to Dr. Macones.

Median cervical dilatation at the time of rupture of membranes was 4 cm less in the early amniotomy group, compared with the standard care group (3.0 vs. 7.0 cm; $P = .001$). In intent-to-treat analyses, the time from induction to delivery was 2.3 hours shorter with early amniotomy (19.0 vs. 21.3 hours; $P = .004$). "This difference in the length of labor occurred mainly and not surprisingly in the first stage of labor, but not in the second stage," Dr. Macones noted. In addition,

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Universal MRSA Screening at L&D: Little Benefit

BY NEIL OSTERWEIL

FROM THE INTERSCIENCE CONFERENCE ON ANTIMICROBIAL AGENTS AND CHEMOTHERAPY

BOSTON – Active surveillance testing for methicillin-resistant *Staphylococcus aureus* colonization of pregnant women who were admitted to labor and delivery units costs a lot of bucks for only a little bang.

Over a 20-month period, a universal methicillin-resistant *S. aureus* (MRSA) screening program, required by Illinois law, cost $90,950 but had no apparent impact either on MRSA disease in the postpartum period or on nosocomial MRSA infections in a postpartum ward and newborn nursery, said Naseem Helo, a fourth-year medical student at Loyola University Medical Center in Maywood, Ill.

Among 2,254 pregnant women who were admitted to the labor and delivery unit, 1,819 (81%) received a nasal MRSA test at a cost of $50 each and 39 women (2%) screened positive, for a cost of more than $2,300 per positive screen, Mr. Helo said at the meeting, which was sponsored by the American Society for Microbiology.

Of the 39 MRSA-colonized women, 13 went on to have a cesarean section, 21 had vaginal delivery, 2 had miscarriages, and 3 were lost to follow-up because they did not deliver at the center.

When investigators looked at the effect of the positive results on practice, they found that although 9 of 13 (69%) women who had cesareans had positive test results available before the surgery, only 3 of the 9 (33%) received vancomycin prophylaxis.

"During the newborn stay, no newborns had complications of MRSA disease, and there were no nosocomial infections in our labor and delivery service, postpartum ward, and newborn nursery during the 20-month study period or 2 years prior to the study," Mr. Helo said.

The investigators suggested that the decision to implement universal MRSA surveillance should be driven by MRSA colonization rates in specific geographic populations. ■

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these women were more likely to deliver within 24 hours of labor induction (68% vs. 56%; $P = .002$).

The early amniotomy group did not differ significantly from the standard care group with respect to rates of cesarean delivery (41% vs. 40%), cord prolapse (0.7% vs. 0%), and abruption (0.4% vs. 0.6%).

Fetal heart rate data were not analyzed, but rates of amnioinfusion (a "reasonable proxy" for variable decelerations) were similar, according to Dr. Macones.

The two groups also had statistically indistinguishable rates of infectious outcomes, including chorioamnionitis (11.5% vs. 8.5%) postpartum fever (10.4% vs. 9.4%) in the mother, and NICU admission (13.6% vs. 15.0%) and suspected or confirmed sepsis (9.7% vs. 11.1%) in the neonate.

In questions posed after the presentation, one attendee asked how the 4-cm threshold was selected for early amniotomy, and whether the findings would be similar with, say, a 2-cm threshold instead. "We chose 4 cm based on some earlier work in spontaneous labor with rupturing membranes," Dr. Macones explained. "I agree that we could dial that down a bit." However, within the early amniotomy group, the efficacy and safety findings appeared similar regardless of the timing of the procedure, he said.

When asked if the study was mixing cervical ripening with labor induction, Dr. Macones said, "I think the lines between ripening and induction are actually quite gray." He contended that the study's aim was to assess the impact of amniotomy when the intention was to perform it as early as possible.

An alternative approach would be to look at women once their cervix is ripened and then ask what the role of amniotomy is, he acknowledged. "But I think that's a little bit different question than we actually had."

Dr. Macones did not report any relevant financial disclosures. ■