

# Dilation and History Both Predict Preterm Birth

BY BETSY BATES  
Los Angeles Bureau

RENO, NEV. — Cervical dilatation at presentation and over the 6 hours following admission was highly predictive of preterm birth in women admitted with preterm labor, but obstetric history also contributed important information about which mothers were likely to deliver before 34 or 37 weeks' gestation, according to study findings presented in poster form at the annual meeting of the Society for Gynecologic Investigation.

Dr. Jamie A. Bastek and associates in the department of obstetrics and gynecology at the University of Pennsylvania, Philadelphia, reviewed the records of 400 women with singleton pregnancies who were admitted in preterm labor before 34 weeks' gestation.

They sought to determine whether the risk of preterm birth could be stratified based on a number of easily identifiable vari-

ables, including cervical dilatation and obstetric history.

"As tocolytics are not without harm, we felt it was important to see if we could identify women with a low likelihood of preterm birth who could be managed without admission and/or tocolytic agents" she said in an interview. Of the total cohort, nearly 45% delivered before 34 weeks, and 63% delivered before 37 weeks' gestation.

In trying to determine what distinguished the women who delivered after 37 weeks, Dr. Bastek and associates found a number of features conferring protection, including later gestational age at presentation, less cervical dilatation at presentation, smaller rates of change in cervical dilatation, and obstetric history.

Presentation at fewer than 25 weeks' gestation conferred more than a 15-fold increase in the odds of delivering before 34 weeks, compared with women who presented at 32 weeks' gestation. Presentation before 28 weeks was

also a noteworthy risk, bestowing 3.5 times the risk of delivering before 34 weeks.

However, presenting at more than 30 weeks' gestation did not demonstrate elevated odds of delivering before 34 weeks or before 37 weeks, compared with presentation at 32 weeks' gestation.

Cervical dilatation, both on presentation and over the course of 6 hours following admission, was significantly predictive of preterm birth, even after controlling for multiple other variables such as maternal age, race, prenatal care, and gestational age on admission.

Each 1-cm increase in cervical dilatation on presentation more than doubled the odds of delivering before 37 weeks, a significant finding ( $P$  less than .0001). However, this risk was modified depending on obstetric history.

At a dilatation of 2 cm on admission, for example, the patients who were at highest risk of a preterm birth before 37 weeks were those with no previous births, followed by those with

one or more prior preterm deliveries. Rates were lower for mothers who had a history of both preterm and full-term deliveries, and for those who previously had only had full-term deliveries.

The interaction between obstetric history and cervical dilatation was complex. Patients with a previous preterm birth had the highest baseline risk of another preterm delivery before 37 weeks if cervical dilatation was not a consideration.

Within each obstetric history cohort, advancing cervical dilatation was significantly associated with preterm birth before 34 and 37 weeks. Advancing cervical dilatation had the greatest impact on those with no prior preterm birth and the least impact on those with only a prior preterm birth.

Notably, more than 60% of women with a history of one or more full-term deliveries and no preterm deliveries carried their pregnancies beyond 34 weeks.

What happened after admis-

sion was also relevant to the risk of preterm delivery. Just 17.8% of the cohort (71 patients) delivered within 6 hours of admission.

In the remaining 329 women, a 1- to 2-cm change in cervical dilatation after admission conferred almost a threefold risk of delivery before 34 weeks and a twofold risk of delivering before 37 weeks.

A 3-cm or greater change in cervical dilatation was associated with a nearly 12-fold increase in risk of a preterm birth before 34 weeks and a sevenfold increase of delivering before 37 weeks.

All eight women with more than a 4-cm change in dilatation over the first 6 hours after admission delivered before 34 weeks.

The research pointed to a number of factors that should be considered in women with preterm labor, especially gestational age at presentation; cervical dilatation on presentation and cervical change over the 6 hours following admission; and obstetric history. ■

## Progesterone Stalls Ripening of Cervix, Prevents Early Delivery

BY DIANA MAHONEY  
New England Bureau

SAN FRANCISCO — The use of high-dose progesterone in women at risk for preterm delivery following premature labor slows the progression of cervical changes linked to early delivery, Dr. Fabio Facchinetti said at the annual meeting of the Society for Maternal-Fetal Medicine.

In a randomized controlled trial, the use of 17  $\alpha$ -hydroxyprogesterone caproate (17-OHPC) was associated with reduced cervical shortening and local inflammation, which led to a significantly reduced incidence of preterm deliveries, said Dr. Facchinetti of Universita di Modena e Reggio Emilia in Modena, Italy.

To investigate the mechanism of action of 17-OHPC in preventing preterm delivery, Dr. Facchinetti and colleagues randomized 45 hospitalized women who remained undelivered after an episode of preterm labor between 25 and 33 weeks to observation only or to treatment with twice weekly intramuscular injections of 341 mg of 17-OHPC until 36 weeks. The typical dose of 17-OHPC in these cases is usually a single weekly injection.

Dr. Facchinetti cited two reasons for the high dose: the cervical inflammatory processes were already underway and needed to be stalled; and the treatment was started later in pregnancy so there was less time for efficacy.

All of the women had singleton pregnancies, intact membranes, and cervical dilatation less than 2 cm. Those with chronic disease, gestational disease, large

or multiple uterine myomas, or suspected intraamniotic infection were excluded. There were differences between the 23 women in the treatment group and the 22 controls in terms of maternal age or gestational age at time of preterm labor (mean 29 weeks), and the majority of patients had sonographic evidence of a short cervix at baseline, Dr. Facchinetti reported. All of the women received two doses of intramuscular betamethasone 24 hours apart to promote fetal lung development, as per hospital policy.

After randomization 4-6 days following hospital admission for preterm labor, each subject underwent a cervical swab and ultrasound measurement of cervical length at baseline, 1 week, and 3 weeks.

In terms of clinical outcome, 22% of the women in the treatment group had preterm delivery (before week 37), compared with 54% in the observation group, representing a statistically significant reduction, said Dr. Facchinetti. Among women in the treatment group, the mean length of pregnancy was 9 days longer than in the control group.

An analysis of the primary study outcome—change in cervical length—demonstrated significant differences between the treatment and observation groups. "After 3 weeks, women treated with 17-OHPC had a median 2-mm reduction in cervical length compared with 4 mm in untreated women," he said. "Our speculation is that preterm cervical ripening is the real driver of preterm delivery and can be blocked by [17-OHPC]." ■

## Obstetric History, Not Ultrasound, Should Guide Cerclage Decisions

BY BETSY BATES  
Los Angeles Bureau

RENO, NEV. — There was no reduction in preterm birth but a higher cerclage rate and a doubling of hospital days when cervical scanning, rather than obstetric history, was used to determine necessity for the procedure.

Results of the randomized, controlled CIRCLE (Assessment of Cervical Cerclage for the Prevention of Preterm Labour) trial do not suggest any benefit in replacing historical indications for suture placement with ultrasound surveillance, Dr. Rachael Simcox said at the annual meeting of the Society for Gynecologic Investigation.

Dr. Simcox and associates recruited 247 women from nine centers in the United Kingdom carrying singleton pregnancies of less than 24 weeks' gestation and at high risk of preterm birth because of a history of a previous spontaneous delivery between 16 and 34 weeks.

They were stratified based on gestational age at previous preterm birth, then randomized to one of two groups. In the scanning arm, women were followed with transvaginal ultrasound every 2 weeks. If cervical length was 20 mm or less, the woman received a cerclage. In the traditional arm, cer-

clage placement was based on obstetric history and physician discretion. The groups were well matched for ethnicity, smoking status, and obstetric and surgical history.

Women in the scan group were 1.6 times more likely to receive a cerclage (39 of 122), compared with those in the history group (25 of 125). They also spent a total of 495 days in the hospital, compared with 240 days for the traditionally managed women, said Dr. Simcox of the division of reproductive health, endocrinology, and development at King's College London. The scan patients were significantly more likely to receive progesterone than those in the traditional arm (48 vs. 32, respectively), yet despite more intervention, they were not statistically more likely to deliver at term.

Late miscarriages were numerically more common in the traditionally managed group, but the numbers did not reach significance (12 of 125 vs. 4 of 122). Tommy's, the Baby Charity provided funding. ■

