# 17-OHPC Blocks Preterm Cervical Ripening

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 α-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 the prevention of 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 study dose of 17-OHPC is substantially higher than that which is typically used to prevent preterm births in women with a history of premature delivery, which generally consists of a single weekly injection

"Our reasoning for the high dose was twofold," said Dr. Facchinetti. "The cervical inflammatory processes in these women were already activated, so we needed to challenge them. Also, treatment was started later in pregnancy [compared with prophylactic treatment to prevent repeat preterm birth], thus there was less time for efficacy."

All of the women in the study had singleton pregnancies, intact membranes, and cervical dilatation less than 2 cm. Patients with chronic disease, gestational disease, large or multiple uterine myomas, or suspected intra-amniotic 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. Per hospital protocol, all of the women received two doses of intramuscular betamethasone 24 hours apart to promote fetal lung development, he said.

After randomization, which took place 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. With respect to the cervical swab, "we collected [cervical] fluid beyond the external os to avoid shear stress and blood, and the samples were weighted and stored for immunoassays to measure inflammatory markers," said Dr. Facchinetti.

In terms of clinical outcome, 22% of the women in the treatment group had preterm delivery (prior to week 37) compared with 54% in the observation group, representing a statistically significant reduction, according to Dr. Facchinetti. Among women in the treatment group, the mean length of pregnancy was 9 days longer than in the control group. There were no between-group differences in the number of women who delivered prior to week 35 or in infant birth weight or rate of low-birth-weight infants, he said.

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," said Dr. Facchinetti.

The investigators also observed "important" within-group and between-group changes in the level of cervical secretion of interleukin 1 (IL-1), Dr. Facchinetti noted. "In the untreated group, there was a trend toward increased IL-1 secretion over 3 weeks, while the treatment group showed a significant decrease." No statistically significant changes were observed in the other proinflammatory markers that were measured, including IL-6, IL-8, tumor necrosis factor–α, or nitrates/nitrites—a finding that suggests 17-OHPC selectively inhibits IL-1, he said.

Based on the results, "our speculation is that preterm cervical ripening is the real driver of preterm delivery and can be blocked by [17-OHPC]," said Dr. Facchinetti. ■


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**References: 1.** Moore C et al. *J Am Diet Assoc.* 2004;104:980-983. **2.** 2005 Dietary Guidelines Advisory Committee Report. Available at: http://www.health.gov/dietaryguidelines/dga2005/report/html/D1_adequacy.htm. Accessed March 22, 2006. **3.** Holick MF. *Am J Clin Nutr.* 2004;79:362-371. **4.** Hanley D, Davison KS. *J Nutr.* 2005;135:332-337. **5.** Hollis BW. *J Nutr.* 2005;135:317-322. **6.** Dawson-Hughes B et al. *Osteoporos Int.* 2005;16713-716.

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