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BASIC SCIENCE: OBSTETRICS

Effect of endogenous steroid hormones on 17-alpha-hydroxyprogesterone caproate metabolism

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OBJECTIVE: Plasma concentrations of 17-alpha-hydroxyprogesterone caproate (17-OHPC) vary substantially in pregnant patients who receive an identical dose. Endogenous steroid hormones may alter 17-OHPC metabolism, which contributes to this large variability.

STUDY DESIGN: Pooled human liver microsomes were incubated with 17-OHPC alone or in combination with progesterone, hydroxyprogesterone, estrone, estradiol, or estriol. High-performance liquid chromatography with ultraviolet detection was used to quantify 17-OHPC.

RESULTS: Under the conditions that were studied, 17-OHPC metabolism was inhibited by 37% by a combination of endogenous steroid

hormones. Progesterone alone significantly inhibited 17-OHPC metabolism by 28% ($P < .001$).

CONCLUSION: 17-OHPC metabolism is inhibited significantly by endogenous steroids and, in particular, progesterone. This effect may account for some of the large variation in plasma 17-OHPC concentrations that is seen in pregnant patients who receive a fixed dose of medication.

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CORRECTION

May 2012 (vol. 206, no. 5, page 376)

An incorrect word appeared in an SMFM Clinical Guideline (Society for Maternal-Fetal Medicine Publications Committee, Berghella V. Progesterone and preterm birth prevention: translating clinical trials data into clinical practice. *Am J Obstet Gynecol* 2012;206:376-86) published in the May 2012 issue of the Journal.

On page 380, the first sentence of the second paragraph under the heading "What is the evidence and recommendation for use of progestogens for prevention of PTB in singleton gestations with prior PTB, and unknown or normal CL? (Levels I, II, and III)," subheading "17P," in which an NICHD MFMU Network trial involving 17- α -hydroxyprogesterone caproate, published in the *New England Journal of Medicine* in 2003, is described, should have read:

In 463 women with singleton gestation and prior SPTB at 20-36 6/7 weeks of a singleton gestation, 17P 250 mg IM weekly started at 16-20 6/7 weeks was associated with reduction in the incidence of PTB <35 (RR, 0.66; 95% CI, 0.54-0.81), PTB <37 and <32 weeks, and supplemental oxygen and intraventricular hemorrhage (IVH) compared to placebo.⁶

In the May 2012 Clinical Guideline, "17P 250 mg IM weekly" was preceded by the word "compounded." As a Letter to the Editors and author's reply explain (Meis PJ. The source of 17P used in NICHD trial. *Am J Obstet Gynecol* 2012;207:e11 and Berghella V. Reply. *Am J Obstet Gynecol* 2012;207:e12), this was incorrect. The 17P used in the NICHD MFMU Network trial was manufactured by a research pharmacy using FDA's Good Manufacturing Practices.