FOCUS ON GYNECOLOGIC INFECTIONS

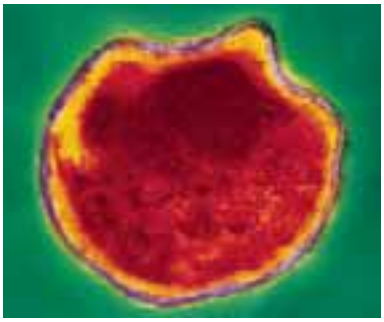
Chlamydia pneumoniae: Does previous infection increase preeclampsia risk?

Heine RP, Ness RB, Roberts JM. Seroprevalence of antibodies to Chlamydia pneumoniae in women with preeclampsia. *Obstet Gynecol.* 2003;101:221-226.

OBJECTIVE Patients with immunoglobulin (Ig) G antibodies to *Chlamydia pneumoniae* tend to have a higher incidence of atherosclerosis. Since preeclampsia has many of the same pathophysiologic features and risk factors as coronary heart disease, the researchers investigated whether women with these antibodies also have a higher incidence of preeclampsia.

METHODS AND RESULTS Investigators randomly collected serum samples from 74 nulliparous pregnant women—37 with preeclampsia and 37 with uncomplicated pregnancy—at the time of admission for labor and delivery. They then compared antibody titers for IgG, IgM, and IgA seroprevalence to *Chlamydia pneumoniae,* as well as IgG seroprevalence to *Chlamydia trachomatis* and *Chlamydia psittaci*, in the 2 groups.

IgG antibodies to *C pneumoniae* at a titer of at least 1:16 were more common in women with preeclampsia (25 of 37) than those without preeclampsia (15 of 37) (odds ratio 3.1; 95% confidence interval 1.2, 7.9).



Chlamydia pneumoniae

There were no significant differences in the seroprevalence of IgA or IgM antibodies to *C pneumoniae*. Women with preeclampsia also were no more likely to have IgG antibodies to *C trachomatis* or *C psittaci*.

These data suggest a specific association between infection with *C pneumoniae* and preeclampsia.

EXPERT COMMENTARY I began reviewing this article with 2 strong positive biases. First, Dr. Roberts is a respected colleague as well as a meticulous and honest investigator. Second, I believe that everything of importance in obstetrics and gynecology is somehow related to infection, bacteria, viruses, prions, and cytokines.

Those disclaimers aside, I was favorably impressed by this study.

The authors make a good point when they argue that past infection with *C pneumoniae* could be another risk factor for preeclampsia. However, since this study represents only the first step of investigation, it would be wise to avoid overenthusiasm.

Specifically, I don't want to see a repeat of our current, very narrow strategy for preventing newborn group B streptococcal infections. The complete focus on extensive intrapartum antibiotic administration to mothers has resulted in an increase in newborn Gram-negative aerobic infections that, in 1

large study, matched the decrease in group B strep.[1] The result: a zero-sum gain. Therefore, before we add macrolides to our prenatal vitamins, further investigation must be performed.

Although the statistical differences noted in this study are significant, the total patient population is small. Additional studies with larger numbers of patients are needed to verify these results. If confirmed, we would need careful prospective studies with selected therapeutic interventions to see if the progression to preeclampsia can be avoided.

Like all good studies, the results raise more questions than answers. I'm not an expert on preeclampsia, but I have been struck by how little attention—in the obstetrical literature—has been paid to the later life experiences of preeclamptic patients. I would assume that IgG *C pneumoniae*-positive preeclamptic women have a higher incidence of coronary artery disease in later years. Do we know the lifetime risks of preeclamptic patients? Perhaps it was *C pneumoniae* and not continuous medroxyprogesterone acetate that was the real culprit in the Women's Health Initiative.

BOTTOM LINE This well-conducted study presents preliminary evidence that past infection with *C pneumoniae* could be another risk factor for preeclampsia. Additional studies with larger patient populations are warranted to elucidate the clinical import of these findings.

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REFERENCE

1. Stoll BJ, Hansen N, Fanaroff AA, et al. Changes in pathogens causing early-onset sepsis in very low birth weight infants. *N Engl J Med.* 2002;347:240-247.

Clindamycin treatment of bacterial vaginosis reduces preterm deliveries

Lamont RF, Duncan SLB, Mandal D, Bassett P. Intravaginal clindamycin to reduce preterm birth in women with abnormal genital tract flora. *Obstet Gynecol*. 2003;101:516-522.

OBJECTIVE To investigate whether treating abnormal genital tract flora with clindamycin vaginal cream in gravidas before 20 weeks' gestation prevents preterm delivery.

METHODS AND RESULTS This randomized, double-blind, placebo-controlled tricenter study included 409 women with abnormal genital tract flora presenting to antenatal care clinics at 13 to 20 weeks' gestation. Infection or colonization consistent with bacterial vaginosis was defined as decreased lactobacilli and increased numbers of "other" bacterial morphotypes and was identified by Gram stain performed on secretions obtained from the upper portion of the vagina. Women who tested positive for infection or colonization were treated with a 3-day course of vaginal clindamycin cream (n = 208) or placebo (n = 201).

If infection or colonization persisted 3 weeks later, a second, 7-day course of the drug or placebo was given, in accordance with the original randomization.

Compared with controls, women treated with clindamycin had a statistically significant reduction in the incidence of preterm delivery (4% versus 10%, $P = .03$). Consequently, admission to the neonatal intensive care unit also was significantly reduced among babies born to women in the treatment group.

EXPERT COMMENTARY Preterm delivery remains the bane of the obstetrician's existence. Treatment of clinically evident preterm labor can delay delivery sufficiently to allow for administration of antenatal steroids, but only rarely is established labor abolished.

Given our limited effectiveness in combating premature labor, one alternative is

identifying the woman at risk. Unfortunately, the majority of pregnancies complicated by preterm delivery have no obvious risk factors. The study by Lamont et al is important because it describes a means of identifying and successfully treating infection that might otherwise remain undiagnosed until preterm labor becomes established and essentially untreatable. Indeed, the essence of a good screening method is its ability to identify risk in those who exhibit no ostensible risk—that is, the population at large.

While this study is one of many to consider the role of bacterial vaginosis in preterm labor, the use of a Gram stain to identify the abnormal bacterial morphology is clever and deserves consideration. Once risk is identified, the next logical step is finding a means to facilitate its reduction—and the study succeeds here as well. If the risk of preterm delivery can be suitably diminished—as it was in the women given clindamycin—the potential to lower the preterm delivery rate is greater than with traditional interventions for clinically apparent preterm labor.

My practice is inner city, where preterm deliveries occur for a variety of reasons and the degree of prematurity is on the severe end of the scale. Thus, an approach that clearly lowers admissions to the neonatal intensive care unit would be valuable. In my opinion, this approach is worth a trial.

BOTTOM LINE In the low-risk population studied here, identifying infection by Gram stain and treating it with intravaginal clindamycin cream had a marked impact on the goal of reducing preterm delivery. This is an elegant application of a simple, direct, and inexpensive means to a most valued end. ■

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