Oral Bacteria May Affect Pregnancy Outcome

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The oral pathogen *Actinomyces naeslundii* appears to be associated with shorter gestation resulting in preterm low birth weight, while oral *Lactobacillus casei* is associated with longer gestation and higher birth weight.

Increased levels of *A. naeslundii* could account for as much as 4%-6% of preterm low-birth-weight babies, although more research is necessary to confirm causality, said Ananda P. Dasanayake, D.D.S., of the New York University College of Dentistry, and his colleagues (J. Periodontol. 2005;76:171-7).

The epidemiologic study offers one more tantalizing glimpse at the interrelationship between oral health and systemic disease, and points up the importance of dental care during pregnancy.

"It is advisable to tell patients to seek dental care during pregnancy," Dr. Dasanayake said in an interview. "If they have chronic periodontal disease, that can be treated—usually mechanically, by scaling and root planing, but sometimes with combination therapy that includes antibiotics."

Dr. Dasanayake and his colleagues compared the presence of oral bacteria during the third trimester and at delivery with pregnancy outcomes in 297 primigravidas. The women's mean age was 20 years; 93% were African American. About 85% had at least a high school education. Saliva samples were obtained by expectoration after chewing on sterile paraffin wax.

Samples were tested for *A. naeslundii, L. casei, Streptococcus mutans, Streptococcus sobrinus, Streptococcus sanguinus,* and *Lactobacillus acidophilus.*

Most of the women (67%) had normal vaginal deliveries. The average infant birth weight was 3,200 g and average gestational age was 39 weeks. There were 26 low-birth-weight deliveries and 28 preterm deliveries.

In a multivariate analysis, the only bacteria significantly associated with pregnancy outcomes were *A. naeslundii* and *L. casei*.

Increasing numbers of *A. naeslundii* were significantly associated with preterm low birth weight.

For every one-unit increase in *A. naeslundii* levels, there was a 60-g decrease in birth weight and a 0.17-week decrease in gestational age.

L. casei was associated with increasing gestational age.

Each unit increase in *L. casei* was associated with a 0.13-week increase in gestational age.

The connection between oral bacteria and preterm birth is biologically plausible, Dr. Dasanayake said.

Increased levels of *A. naeslundii* could account for as much as 4%-6% of preterm low-birth-weight babies; more research is needed to confirm causality.

Infections trigger inflammation and increase cytokines, which in turn can increase prostaglandins and lead to cervical dilation and uterine contraction.

Conversely, oral *L. casei*—which is associated with the incidence of dental caries—can have a protective effect by colonizing the vagina (migrating via elimination), where it suppresses the growth of pathogenic bacteria and inhibits bacterial vaginosis.

Because of the epidemiologic nature of the study, he said, it was not possible to separate the actual effect of either bacterial level from other contributing factors, such as drug and alcohol use or smoking.

However, two ongoing randomized controlled trials, one in South America and one in the United States, may give more specific information.

"In these studies, pregnant women are randomized into two groups—one group has their periodontal disease treated during pregnancy and one group has it treated after pregnancy," Dr. Dasanayake said.

He added that several studies, including one of his own, have failed to find any association between oral bacteria and pregnancy outcome.

His study was performed in Sri Lanka with women who did not use tobacco, alcohol, or drugs because of cultural taboos and very low socioeconomic status. No association was seen in this group of women. ■