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 causation, said Amanda P. Dasanayake, D.D.S., of the New York University College of Dentistry, and his colleagues (J. Periodontol. 2005;76:171-181).

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. Sali- va samples were obtained by expectora- tion after chewing on sterile paraffin wax. Samples were tested for A. naeslundii, L. casei, Streptococcus mutans, Streptococcus salivarius, Streptococcus sanguis, and Lactobacillus acidophilus.

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

In a multivariate analysis, the only bac- teria significantly associated with preg- nancy 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 0.01 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 gesta- tional age.

The connection between oral bacteria and preterm birth is biologically plausible, Dr. Dasanayake said. Infections trigger inflammation and increase cyto- kinines, which in turn can inc rease prostaglandins and lead to cervical dilation and premature rupture of the membranes.

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 may protect against the pathogenic bacteria and inhibit bacterial vaginosis.

Because of the epidemiologic nature of the study, he said, it was not possible to separate the actual effect of each bacte ral 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.

“IT’S INTERESTING,” Dr. Dasanayake said. “These studies are randomized to two groups—one group has their periodontal disease treated during pregnancy and one group has it treated after pregnancy.”

He added that several studies, including one of his own, have failed to find any asso- ciation between oral bacteria and preg- nancy outcome.

His study was performed in Sri Lanka with women who did not use tobacco, al- cohol, or drugs because of cultural tabo- oms and very low socioeconomic status. No asso- ciation was seen in this group of women.

References: