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## Upfront

Katie Barge

*Katie S. Barge is staff editor of the Journal of Dental Hygiene and staff writer for Access*

### **Antibiotic Use in Infants May Boost Asthma Risk**

Infants who are exposed to even one course of antibiotics during their first year of life may be at increased risk for developing childhood asthma, reported Canadian researchers from the University of Manitoba and McGill University. The study, which was published in the June issue of *CHEST*, the peer-reviewed journal of the American College of Chest Physicians, reports that children who received antibiotics before their first birthday were at greater risk for developing asthma by age 7 than those who did not receive antibiotics. The risk for asthma doubled in children receiving antibiotics for nonrespiratory infections, as well as in children who received multiple antibiotic courses and who did not live with a dog during their first year of life.

"Antibiotics are prescribed mostly for respiratory tract infections, yet respiratory symptoms can be a sign of future asthma. This may make it difficult to attribute antibiotic use to asthma development," said lead study author Anita Kozyrskyj, PhD, University of Manitoba, Winnipeg, MB. "Our study reported on antibiotic use in children being treated for nonrespiratory tract infections, which distinguishes the effect of the antibiotic."

Using a prescription database, Kozyrskyj and her colleagues assessed the association between antibiotic prescription use during an infant's first year of life and asthma at age 7 in a 1995 birth cohort of 13 116 children. The reason for antibiotic use was categorized by lower respiratory tract infection (bronchitis, pneumonia), upper respiratory tract infection (otitis media, sinusitis), and nonrespiratory tract infection (urinary infections, impetigo).

The researchers found that the risk was highest for the infants who received multiple courses of antibiotics. Children who received 1 to 2 courses of antibiotics had a 21% increased risk of asthma; those given 3 to 4 courses had a 30% increased risk; and kids who were given more than 4 courses had a 46% increased risk. The researchers also found that those who received prescriptions for broad-spectrum antibiotics, which kill both bad and good bacteria, were at higher risk than those who received narrow-spectrum antibiotics.

"It may be that you need the presence of good bacteria during the first year of life for the immune system to develop normally, and the antibiotics are killing off some of the natural microflora in the gut," said Kozyrskyj.

Within the study group, 6% of children had current asthma at age 7, while 65% of children had received at least one antibiotic prescription during their first year of life. When researchers compared the reason for antibiotic use, their analysis indicated that asthma at age 7 was almost twice as likely in children receiving an antibiotic for nonrespiratory tract infections compared with children who did not receive antibiotics.

Other factors that increased the risk of asthma included maternal asthma, living in an urban area, and being male. The presence of a dog during the first year of life was associated with a decreased asthma risk. Absence of a dog during the first year doubled asthma risk among children who received multiple courses of antibiotics. However, the protective effect of living with a dog was not present among children who received fewer antibiotic courses.

"Dogs bring germs into the home, and it is thought that this exposure is required for the infant's immune system to develop normally. Other research has shown that the presence of a dog in early life protects against the development of asthma," said Kozyrskyj. "Exposure to germs is lower in the absence of a dog. The administration of an antibiotic may further reduce this exposure and increase the likelihood of asthma development."

The researchers recommend that when treating infants, physicians start by prescribing narrow-spectrum antibiotics, such as amoxicillin, and then if necessary, try a broad-spectrum medication.

"Antibiotics are frequently prescribed for young children for both respiratory and nonrespiratory infections," said Mark J. Rosen, MD, FCCP, president of the American College of Chest Physicians. "Understanding the relationship between antibiotic use and asthma can help clinicians make more informed decisions about treatment options for children."

More than 18 million Americans have asthma. About 4 million American children have active asthma, which results in about 14 million missed school days a year, according to the American Lung Association. Asthma cannot be cured-only controlled-which has lead researchers to focus on factors that may play a role in the development of the lung disease.

### **Periodontitis Increases Tongue Cancer Risk in Men**

Whether he smokes or not, periodontitis could boost a man's risk for tongue cancer, reported US researchers in the May issue of *Archives of Otolaryngology-Head & Neck Surgery*.

Researchers at the State University of New York at Buffalo and the Roswell Park Cancer Institute in Buffalo compared 51 non-Hispanic white men with tongue cancer and 54 non-Hispanic white men without tongue cancer. The case-controlled study used preexisting data from patients admitted between June 15, 1999, and November 17, 2005.

Using panoramic radiographs, one examiner blind to cancer status assessed periodontitis in the men by measuring alveolar bone loss. Men with tongue cancer had significantly greater bone loss than those without tongue cancer-4.21 mm versus 2.74 mm.

"After adjusting for the effects of age, smoking status, and the number of teeth, each millimeter of bone loss was significantly associated with a 5.23-fold increase in the risk of tongue cancer," wrote the study authors. "Other oral variables (the number of dental decays, fillings, crowns and root canal treatments) were not significantly associated with the risk of tongue cancer."

This preliminary data suggests an association between periodontitis and tongue cancer, but larger studies that include women and different racial/ethnic groups need to be conducted to confirm this association, said the researchers. If this association is confirmed, it has a potential impact on understanding the etiology of oral cancer as well as on its prevention and control.

According to the Oral Cancer Foundation, roughly 7500 Americans are diagnosed with tongue cancer each year, with men accounting for nearly two-thirds of the cases.