Early Respiratory Illnesses Hike Asthma Risk

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SEATTLE — Children prone to atopy are more likely to develop asthma if they frequently have moderate to severe respiratory illnesses in the first years of life, according to results of a prospective cohort study. Moreover, these illnesses do not protect against other atopic conditions.

Childhood respiratory illnesses cause considerable morbidity, contribute to parental absence from work, and are one of the most common causes for health care visits among the pediatric population, lead author Dr. Christine Virnig noted at the annual meeting of the American College of Allergy, Asthma, and Immunology.

"We sought to further understand the risk factors for and atopic consequences of having frequent respiratory illnesses during the first 3 years of life," she said.

The investigators analyzed data from 277 children in the Childhood Origins of Asthma (COAST) study, which enrolled a birth cohort of infants who were at high risk for atopic conditions because at least one parent had allergies, asthma, or both.

During the children's first 3 years of life, parents completed a scorecard whenever their child had a respiratory illness to document the frequency and severity of these illnesses, said Dr. Virnig, who is an allergy and immunology fellow at the University of Wisconsin, Madison.

The children's personal, family, and environmental characteristics were assessed between birth and 6 years. Total IgE levels, levels of antigen-specific IgE to food and airborne allergens, eosinophil counts, and presence of atopic dermatitis were ascertained at 1, 3, and 6 years, and the presence of asthma was assessed at 6 years.

Scorecard results indicated that 8% of the children did not have any moderate to severe respiratory illnesses (MSIs) during the first 3 years of life, whereas 9% had frequent MSIs (12 or more), Dr. Virnig reported.

Not unexpectedly, she said, children who had MSIs frequently were significantly more likely to have attended day care in their first 6 months of life, compared with their counterparts who did not have any MSIs during those years (64% vs. 27%).

But in a finding that was very surprising, according to Dr. Virnig, children with frequent MSIs also were significantly more likely to have been exclusively breastfed for the first 6 months of life (52% vs. 18%).

This association remained significant when the number of MSIs was analyzed as a continuous variable, but the ranges of values overlapped considerably. "Therefore, the clinical significance of this finding is very uncertain," Dr. Virnig commented, adding that it would not justify altering recommendations to breastfeed.

Children with frequent MSIs also were marginally more likely to have a mother who had asthma. A variety of other factors—sex, birth weight, presence of an older sibling, smoke exposure, a cat or dog in the home at birth, and paternal asthma—did not differ between groups.

The prevalence of asthma at age 6 was significantly higher among children having frequent MSIs relative to children having none of them (59% vs. 9%). This association also remained significant when the number of illnesses was analyzed as a continuous variable, although the ranges of values again overlapped.

There was no significant difference between the two groups in terms of other indicators of atopy—atopic dermatitis, the presence of food-specific IgE, or the presence of aeroallergen-specific IgE—or eosinophil counts at any of the ages studied.

Dr. Virnig acknowledged that the study's findings appear to be at odds with the hygiene hypothesis, which proposes that early infectious illnesses protect against subsequent allergic conditions. However, she noted, evidence supporting this hypothesis has generally been strongest for gastrointestinal illnesses, while several studies have in fact found an opposite pattern when it comes to respiratory illnesses, particularly those of the lower respiratory tract.

Dr. Virnig stated that she had no conflicts of interest relevant to the study. ■