Exposure to BPA During Childhood Linked to Wheeze, Asthma

Exposure to bisphenol-A during childhood is associated with an increased risk of wheeze and asthma in children, results from a novel study demonstrated.

However, during a poster session at the annual meeting of the American Academy of Allergy, Asthma, and Immunology in San Francisco, lead investigator Dr. Kathleen M. Donohue emphasized the preliminary nature of the findings.

“There’s nothing about this that’s going to change clinical practice with regard to asthma prevention,” said Dr. Donohue of Columbia University, New York. “I don’t think the data are strong enough yet. It needs to be replicated in other cohorts [and] the possible mechanisms of action need to be better understood.”

Mouse studies have shown that prenatal exposure to bisphenol-A (BPA), an endocrine disruptor widely used in plastic baby bottles and other food containers, is associated with airway inflammation. Dr. Donohue and her associates hypothesized that exposure to BPA would be associated with increased odds of wheeze and asthma during childhood.

To investigate their hunch, they enrolled 400 pregnant women for a prospective birth cohort study. They collected spot urine samples and used mass spectrometry to analyze total urinary BPA level at child ages 3, 5, and 7 years. Board-certified allergists examined the children to determine their asthma status.

Nearly half of the children (47%) were male, 59% were Dominican and 41% were African American. The researchers found that BPA levels at ages 3 and 7 years was associated with increased odds of asthma (odds ratio 1.34 and 1.38, respectively). They also found that urinary BPA level at age 3 was associated with increased odds of wheeze at age 7 years (OR 1.34).

While the potential mechanisms of action remain unclear, Dr. Donohue said that preliminary animal studies suggest that T regulatory cell pathways and Th2 cell pathways can be impacted by exposure to BPA.
“Those pathways are important in terms of asthma development, so we hypothesize that perhaps the BPA was acting through either T regulatory cells or Th2 cytokines to induce asthma and wheeze,” she said.

Stay tuned.

— Doug Brunk (on Twitter@dougbrunk)