Childhood Respiratory Infections Predict Asthma in Young Adults

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Authors of a new study found that the risk of asthma had the strongest association with infections occurring before age 3 years.

New evidence suggests that respiratory infections in early life actually predict development of asthma through childhood to young adulthood, according to the first prospective cohort study to assess the relationship between childhood respiratory infections and the development of asthma up to adulthood.

“These results suggest that preventing respiratory infections in childhood could reduce the development of asthma in childhood as well as in adulthood,” stated the authors, led by Aino K. Rantala of the Center for Environmental and Respiratory Health Research, University of Oulu, Oulu, Finland. The results were published in the American Journal of Epidemiology.

Previous studies have provided contradictory evidence on the role of early childhood respiratory infections in the development of asthma and other allergic diseases during childhood. The Finnish researchers investigated early-life respiratory infections as predictors of the development of asthma in a 20-year prospective cohort study.

Information on upper respiratory tract infections (URTIs) and lower respiratory tract infections (LRTIs)
was collected with a parent-administered baseline questionnaire covering the preceding 12 months (part 1) in 2,228 children, and information on LRTIs leading to hospitalization was obtained from the National Hospital Discharge Registry (part 2) in 2,568 children.

The incidence of asthma was assessed on the basis of 6-year and 20-year follow-up questionnaires. The results show that the occurrence of respiratory tract infections during early childhood predicted the development of asthma up to young adulthood.

In part 1, those with at least 1 early LRTI had a 2.8-fold incidence of asthma by age 12 and a 2.1-fold incidence by age 27 as compared to those without LRTIs.

In part 2, the risk of developing asthma up to young adulthood was also increased in relation to having at least 1 LRTI that required hospitalization by age 6, suggesting a 2-fold risk of asthma by the ages of 18 and 27 as compared to those without LRTIs, the researchers stated.

The authors also offered alternative explanations to the association between early infections and the risk of asthma, including the presence of one or several common causes for both the infections and asthma, such as genetic and environmental causes. “For example, children with a genetic propensity to asthma could be more prone to frequent and/or severe respiratory infections. Even in this case, respiratory infections predict the development of asthma and are likely to be harmful in relation to asthma development,” they stated.

The researchers noted the risk of asthma had the strongest association with infections occurring before age 3 years. “The immunological and physiological development of the respiratory system has been found to be fastest during early childhood, which could make the respiratory tract more susceptible to the effects of infections at those ages. Respiratory infections at that time may cause permanent changes, which could have an influence on asthma development all the way to adulthood,” they stated.

Their findings also provide evidence to refute the original hygiene hypothesis, which was based on results presented in 1989 that suggested early respiratory infections would protect against allergic diseases.

Source