Monoclonal Antibody Reduces Asthma Attacks in Black and Latino Youth

Results found that the drug affects asthma-associated gene networks.

August 16, 2022 By Laura Schmidt

A National Institutes of Health (NIH) clinical trial found that mepolizumab, a monoclonal antibody, decreased asthma attacks by 27% among Black and Latino children with severe asthma in low-income urban neighborhoods. These children are notably underrepresented in clinical trials of treatments for asthma, which is caused by chronic inflammation of the airways.

About 2.3 million children and adolescents in the U.S. experienced an asthma attack in 2019, according to the Centers for Disease Control and Prevention.

Black and Latino children who live in low-income urban areas are more likely to have asthma that causes attacks. This is often linked to children who have allergies and are exposed to high levels of allergens indoors and from traffic-related pollution.

Published in The Lancet, the study examined 290 children ages 6 to 17 whose asthma was difficult to control, were prone to asthma attacks or had high blood levels of eosinophils, which are cells thought to increase airway inflammation. Researchers examined participants' nasal secretions at the start and end of the trial.

After a year of treatment with mepolizumab, researchers found that the antibody reduced activity of three networks of genes associated with airway inflammation and asthma attacks in study participants. They also found that mepolizumab reduced blood levels of eosinophils.

"Asthma exacts a heavy toll, especially on disadvantaged school-age children of color who live in urban areas," said Anthony Fauci, MD, director of the NIH's National Institute of Allergy and Infectious Diseases, which sponsored the trial, in an NIH news release. "The results of this study indicate that more research is needed to develop therapies that substantially reduce asthma attacks among these children."

Researchers noted that these findings could help identify future targets for reducing asthma attacks in vulnerable youth.

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