African-Americans Less Responsive to Asthma Medications

MAY 15, 2002

DENVER — Racial differences may play a significant role in a patient's response to asthma medications. Researchers at National Jewish Medical and Research Center report in the February issue of *Chest* that asthmatic and nonasthmatic African-Americans required higher doses of glucocorticoids to suppress lymphocytes, which play an important role in airway inflammation. As a result, the researchers speculate that African-Americans may have a predisposition to a diminished medication response, which can make asthma more difficult to control.

"Regardless of asthma status or severity, African-Americans in our study required higher doses of a glucocorticoid than Caucasians to inhibit proliferation of these inflammatory cells," said the study's lead author Ronina A. Covar, MD, professor fo pediatrics at National Jewish. "This observation suggests that African-Americans may have an inherent predisposition that affects their ability to respond to certain medications at recommended doses."

Dr. Covar and her colleagues evaluated whether African-Americans have a racial predisposition to a diminished response to a glucocorticoid and whether there was a relationship between response to the glucocorticoid and other variables such as age, asthma duration, age at asthma diagnosis, lung function, and glucocorticoid requirement. In vitro testing was conducted on blood samples obtained from 395 patients with asthma (27 percent African-Americans) and 202 patients without asthma (52 percent African-Americans.)

Study results revealed that in African-American and Caucasian patients with asthma, who had similar degree of airflow limitation and comparable controller medication requirements, the African-American patients required greater concentration of the glucocorticoid medication to suppress lymphocyte production. This difference in response between African-Americans and Caucasians was also found among subjects without asthma.

"African-Americans' suboptimal response to asthma medications may contribute to poor asthma control and, therefore, an increased prevalence of asthma-related morbidity and mortality among this population," said Dr. Covar. "These patients whose asthma is not adequately controlled on usual medication doses may benefit from a higher dose or the addition of other controller medications." Researchers stress that although glucocorticoids are taken for many other conditions, including rheumatologic and gastrointestinal problems, it is premature to imply that African-Americans will need to increase medication doses to effectively treat these conditions.

Researchers found that, among patients with asthma, in addition to race as a factor that may affect glucocorticoid response, age, inhaled glucocorticoid dose, and basal T-lymphocyte activity directly correlated with in vitro sensitivity of lymphocytes to glucocorticoids. In patients without asthma, age was the only variable that remained significant, showing that even in a healthy population without disease or inflammation, response to steroids changes over time.

"Asthma continues to be a significant health concern in the United States, particularly among minority populations," said Paul A. Kvale, MD, FCCP, President of the American College of Chest Physicians. "By understanding how specific populations respond to asthma medication, health-care providers can provide the most effective treatments for these groups and, ultimately, improve overall asthma management."

-->

Media Contacts

Our team is available to arrange interviews, discuss events and story ideas.

William Allstetter
303.398.1002
allstetterw@njhealth.org

Adam Dormuth
303.398.1082
dormutha@njhealth.org