News

Changes in Weather May Trigger Child's Asthma

ARLINGTON HEIGHTS, Ill., September 15, 2009 – Changes in humidity and temperature result in an increase in Emergency Department (ED) visits for pediatric asthma exacerbations according to a report published this month in*Annals of Allergy, Asthma & Immunology*, the scientific journal of the American College of Allergy, Asthma and Immunology (ACAAI).

"We found a strong relationship between temperature and humidity fluctuations with pediatric asthma exacerbations, but not barometric pressure," said Dr. Nana A. Mireku, an allergist at Dallas Allergy Immunology private practice in Dallas, formerly at Children's Hospital of Michigan, Wayne State University School of Medicine, Detroit. "To our knowledge, this is the first study that demonstrated these correlations after controlling for levels of airborne pollutants and common aeroallergens.

"Our study is also one of the few to examine the possibility that the weather one or two days before the asthma exacerbation may be as important as that on the day of admission, as the additional ED visits occur one to two days after the fluctuation," she said.

According to the report, patients experiencing an asthma attack often complain that weather fluctuations are a major trigger. Dr. Mireku said, "the latest National Institutes of Health guidelines list 'change in weather' as a possible precipitating factor for asthma, but no previous studies have really examined this potential trigger in a rigorous fashion."

The retrospective 2-year study was performed at a large urban hospital of 25,401 children visiting the ED for an asthma exacerbation. Data on climactic factors, pollutants and aeroallergens were collected daily. The relationship of daily or between-day changes in climactic factors and asthma ED visits was evaluated using time series analysis, controlling for seasonality, air pollution and aeroallergen exposure. The effects of climactic factors were evaluated on the day of admission and up to five days before admission.

A 10 percent daily increase in humidity on a day or two before admission was associated with approximately one additional ED visit for asthma. Between-day changes in humidity from two to three days prior to admission were also associated with more ED visits. Daily changes in temperature on the day of or the day before admission increased ED visits, with a 10°F increase being association with 1.8 additional visits.

Asthma is a chronic inflammation of the lung airways that causes coughing, chest tightness, wheezing or shortness of breath. More than 22 million Americans have asthma, including 6.5 million under age 18.

"Asthma is the most common chronic illness in childhood," said allergist Richard G. Gower, M.D., president of ACAAI. "Allergists have long known that weather conditions such as extremely dry, wet or windy weather can affect asthma symptoms. This study further defines the role of temperature and humidity on children's asthma and confirms the importance of working with patients to identify the source of their symptoms and develop treatment plans that help prevent them."

Citation: Mireku N, et al. Changes in weather and the effects on pediatric asthma exacerbations. Ann Allergy Asthma Immunol 2009;103:220-224.

Patient information on asthma and other allergic diseases is available by calling the ACAAI toll free number at (800) 842-7777 or visiting its Web site at www.allergyandasthmarelief.org.

The American College of Allergy, Asthma and Immunology (ACAAI) is a professional medical organizationheadquartered in Arlington Heights, Ill., that promotes excellence in the practice of the subspecialty of allergy and immunology. The College, comprising more than 5,000 allergists-immunologists and related health care professionals,fosters a culture of collaboration and congeniality in which its members work together and with others toward the common goals of patient care, education, advocacy and research.