New research on preventing fall asthma exacerbations

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Dr. Stanley Szefler with a patient at Children's Hospital Colorado. Credit: Children's Hospital Colorado

Experts from Children's Hospital Colorado (Children's Colorado) co-led a team of researchers in studying new approaches to reducing fall asthma exacerbations in pediatric patients. Their findings were released online in late October and published in the December 2015 issue of *The Journal of Allergy and Clinical Immunology (JACI)*, an official scientific journal of the American Academy of Allergy, Asthma & Immunology (AAAAI) and the most-cited journal in the field of allergy and clinical immunology.

Known as the PROSE (Preventative Omalizumab or Step-Up Therapy for Fall Exacerbations) Trial, the study looked at whether or not a preventative strategy of treating patients with omalizumab (Xolair) four to six weeks before the start of school and continuing it for the next four months helped prevent the asthma flare-ups that typically come during the fall season when children return to school, a time known as the September Epidemic of Asthma.

Designed by Stanley J. Szefler, MD, Director of the Pediatric Asthma Research Program and Research Medical Director of the Breathing Institute at Children's Colorado, the study was led by Stephen J. Teach, MD, Chair of the Department of Pediatrics at Children's National Health System. Andrew Liu, MD, allergist and immunologist at Children's Colorado, was the site manager for the Colorado portion of the study.

The study included 727 participants, ages six to 17 years, who resided in low-income, inner-city areas. It was conducted over two fall cycles, 2012

and 2013. Participants received interventions beyond their regular ongoing treatment beginning four to six weeks prior to the beginning of school and ending 90 days following the start of school.

Study findings indicate that preventative treatment with omalizumab does reduce fall exacerbations in a high-risk group of allergic asthma subjects. This effect was seen most notably in participants who had experienced a recent exacerbation.

The therapy also appears to restore immune protection against common cold viruses that can trigger severe asthma attacks and can be impaired by allergies.

"The results of our study give us an exciting new way to treat pediatric patients with allergic asthma," said Dr. Szefler. "By identifying those patients who are at high risk for fall asthma exacerbations, we can target directed treatment for them during the times of year that they're at the greatest risk for problems. In this way, we can better control their asthma and hopefully ultimately limit their treatment duration."

The researchers also found that increasing inhaled steroid treatment levels above those determined to achieve control offered little to no additional benefit in preventing exacerbations.

More information: Stephen J. Teach et al. Preseasonal treatment with either omalizumab or an inhaled corticosteroid boost to prevent fall asthma exacerbations, *Journal of Allergy and Clinical Immunology* (2015). DOI: 10.1016/j.jaci.2015.09.008

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