

Inhaled Corticosteroids Effective as Rescue Medication for Asthma

Findings suggest strategy to reduce exposure to daily medication and growth retardation

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DENVER — [Inhaled corticosteroids](#), currently recommended as a daily controller medication, can also be an effective rescue treatment for asthma when combined with the standard [rescue medication albuterol](#), according to research at National Jewish Health and other institutions. Children using steroids only as a rescue medication experienced none of the growth retardation associated with daily steroid use. The findings were published online February 14, 2011, in *The Lancet*.

“These findings have important implications for children with mild, persistent asthma,” said Stanley Szeffler, MD, Head of Pediatric Clinical Pharmacology at National Jewish Health, Professor of Pediatrics and Pharmacology at University of Colorado School of Medicine and co-author on the study.

“First, it could provide a more effective, safer strategy for children with well controlled asthma to step down from daily inhaled steroid use and reduce their exposure to its potential side effects. Second, adding inhaled steroids as needed to the traditional rescue medication albuterol can reduce a child’s chances of suffering a severe asthma exacerbation.”

For more than a decade, daily inhaled steroids have been recognized as the most effective single medication for asthma. Inhaled steroids reduce inflammation that can restrict breathing in the airways. Reduced growth is recognized as a potential side effect of daily inhaled steroid use.

Short-acting beta-agonists, such as albuterol, are used as quick-acting medications when patients initially feel short-of-breath. That medication temporarily relaxes muscles surrounding the airways, allowing them to open wider.

The current study, funded by the National Heart Lung and Blood Institute, divided 288 children ages 6 to 18 into four treatment groups. Two groups used the inhaled steroid beclomethasone as a daily controller medication. One of those groups used only albuterol as a rescue medication, and the other used both albuterol and beclomethasone as rescue treatment. Two other groups used no daily controller medication, with one using only albuterol as rescue and the other using both albuterol and beclomethasone as rescue.

The researchers measured the time to the first asthma exacerbation requiring a course of oral steroids. They also counted the number of children suffering of a second exacerbation requiring oral steroid use within the 44-week trial period, which was considered treatment failure.

The researchers found that the frequency of asthma exacerbations ranged from 28 to 35 percent in the three groups using beclomethasone as rescue/and or controller medication compared to 49 percent in the group using albuterol only as a rescue medication. Treatment failure was 23 percent in the albuterol-only group compared with 3 to 8.5 percent in the groups using beclomethasone. Daily beclomethasone use was the most effective treatment, but rescue treatment with beclomethasone also helped. Children using daily beclomethasone grew an average of 1.1 centimeters less than those using it only as rescue medication or not at all.

Researchers from the University of Arizona College of Medicine, Penn State Hershey College of Medicine, University of Wisconsin School of Medicine and Public Health, Washington University School of Medicine, the University of California San Diego, the University of New Mexico, and the University of Denver also participated in the study.

National Jewish Health is known worldwide for treatment of patients with respiratory, cardiac, immune and related disorders, and for groundbreaking medical research. Founded in 1899 as a nonprofit hospital, National Jewish Health remains the only facility in the world dedicated exclusively to these disorders. Since 1998, U.S. News & World Report

has ranked National Jewish the #1 respiratory hospital in the nation.

National Jewish Health is the leading respiratory hospital in the nation. Founded 120 years ago as a nonprofit hospital, National Jewish Health today is the only facility in the world dedicated exclusively to groundbreaking medical research and treatment of patients with respiratory, cardiac, immune and related disorders. Patients and families come to National Jewish Health from around the world to receive cutting-edge, comprehensive, coordinated care. To learn more, visit the [media resources page](#).

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