and 1.58 exacerbations in group 3). Three patients in group 1 and 9 patients in group 2 were withdrawn because of asthma deterioration after 6 months of treatment. The number of asthma-free days did not differ between groups 1 and 2 but remained better than in group 3. Growth velocity was normalized in groups 1 and 2.

CONCLUSIONS. Regular use of budesonide afforded better asthma control but had a more systemic effect than did as-needed use of budesonide.

REVIEWER COMMENTS. It is not a surprise that the inhaled corticosteroids achieved better asthma control than did cromolyn and are the preferred medications. The question addressed by this study is whether inhaled corticosteroids can be used as needed versus continuously. Although these 2 approaches did not differ in lung function or number of asthma-free days, the continuous-treatment group had significantly fewer exacerbations. An accompanying editorial (Pedersen S. Arch Dis Child. 2008;93[8]:644–645) asks, “Do the benefits of daily inhaled steroid treatment of mild asthma outweigh the risks?” and answers in the affirmative, noting that regular use is safe (6 of 7 studies found no long-term effects on growth), as well as more effective and less expensive than any other treatment.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2009-1870QQQ

John M. Kelso, MD
San Diego, CA

Preemptive Use of High-Dose Fluticasone for Virus-Induced Wheezing in Young Children

PURPOSE OF THE STUDY. To examine the efficacy and safety of preemptive, high-dose fluticasone treatment in reducing the severity of recurrent virus-induced wheezing in children.

STUDY POPULATION. Children between 1 and 6 years of age (N = 129) with moderate-to-severe, virus-induced wheezing were included. The investigators tried to exclude subjects with sensitization to aeroallergens, but 7% of the randomly assigned children developed symptoms of persistent or atopic asthma during the study period.

METHODS. The subjects received 750 μg of fluticasone propionate or placebo twice daily, beginning at the onset of an upper respiratory infection and continuing for a maximum of 10 days, over a period of 6 to 12 months. The primary outcome measured was the use of rescue oral steroid treatment. Secondary outcomes included symptoms, use of β2-adrenergic receptor agonists, acute care visits, hospitalizations, discontinuation of study drug administration, changes in growth and bone mineral density, basal cortisol level, and adverse events.

RESULTS. Over a median period of 40 weeks, 8% of upper respiratory infections in the fluticasone group led to systemic steroid treatment, compared with 18% in the placebo group (odds ratio: 0.49). However, children treated with fluticasone, compared with the placebo group, had smaller gains in height (6.23 ± 2.62 vs 6.56 ± 2.90 cm) and weight (1.53 ± 1.17 vs 2.17 ± 1.79 kg). There were no significant differences between the groups in basal cortisol levels, bone mineral density, or adverse events.

CONCLUSIONS. In preschool-aged children with moderate-to-severe, virus-induced wheezing, preemptive treatment with high-dose fluticasone, compared with placebo, reduced the use of rescue oral steroid treatment. High-dose fluticasone treatment, however, was associated with smaller gains in height and weight. Therefore, the authors concluded that this approach should not be adopted in clinical practice until long-term adverse effects are clarified.

REVIEWER COMMENTS. The investigators showed, on one hand, improvement in the need for oral steroid treatment for children treated with high-dose fluticasone but, on the other hand, smaller gains in height and weight for these patients. The question for the rest of us is how to incorporate these new data into clinical practice. For example, the dose of fluticasone that was used was quite substantial for small children. Was this dose on the flat part of the dose-response curve for corticosteroids? Would a smaller dose give the same benefit without the detriment? Also, how do these data apply to children with clinical allergy or risk factors for allergy?

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2009-1870RR

Brian A. Smart, MD
Glen Ellyn, IL

Effect of Long-term Corticosteroid Use on Bone Mineral Density in Children: A Prospective Longitudinal Assessment in the Childhood Asthma Management Program (CAMP) Study
Kelly HW, Van Natta ML, Covar RA, et al.
Pediatrics. 2008;122(1). Available at: www.pediatrics.org/cgi/content/full/122/1/e53

PURPOSE OF THE STUDY. To evaluate the effects of multiple short courses of oral corticosteroid treatment and long-
Long-term Budesonide or Nedocromil Treatment, Once Discontinued, Does Not Alter the Course of Mild to Moderate Asthma in Children and Adolescents


PURPOSE OF THE STUDY. To determine whether long-term, continuous use of inhaled antiinflammatory medications affects asthma outcomes in children with mild-to-moderate asthma after use is discontinued.

STUDY POPULATION. A total of 941 children, 5 to 12 years of age, who had previously participated in the Childhood Asthma Management Program (CAMP).

METHODS. During the CAMP trial, subjects received treatment with budesonide, nedocromil, or placebo for 4.3 years. During the posttrial period, asthma management was provided by primary care physicians according to National Asthma Education and Prevention Program guidelines. Posttrial evaluations included spirometry, methacholine challenge, measurements of height, weight, and bone density, the Child Behavior Checklist, and the Pediatric Asthma Quality of Life Questionnaire.

RESULTS. Treatment for asthma was similar for all 3 groups. The budesonide group had 29% fewer prednisone courses (P = .05) and 36% fewer urgent care visits (P = .05), compared with the placebo group, but the rates of these events were low in all groups. The statistically significantly decreased height in the budesonide group, relative to the placebo group, at the end of the CAMP trial (1.1 cm; P = .005) persisted, with a decrease of 0.9 cm (P = .01) at the end of the posttrial follow-up period. This height decrease was observed in girls but not boys. No significant differences between the groups were observed in mean percentage of time receiving inhaled corticosteroid, mean percentage of time using no medications, end-of-trial percentage of predicted forced expiratory volume in 1 second and percentage of predicted forced vital capacity, bronchodilator reversibility, methacholine responsiveness, rate of fractures, sexual maturation, or any of the psychological or asthma-specific quality of life measures examined.

CONCLUSIONS. During the posttrial follow-up period, asthma morbidity and medication use were not appreciably affected by earlier long-term use of budesonide or nedocromil. The reductions in prednisone course and urgent care visits seen in the budesonide group do not seem relevant, on the basis of the overall rates of these events in all groups.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2009-1870SSS

Jaime Olenec, MD
James E. Gern, MD
Madison, WI
Effect of Long-term Corticosteroid Use on Bone Mineral Density in Children: A Prospective Longitudinal Assessment in the Childhood Asthma Management Program (CAMP) Study
Jaime Olenec and James E. Gern
Pediatrics 2009;124;S149
DOI: 10.1542/peds.2009-1870SSS

Updated Information & Services
including high resolution figures, can be found at:
/content/124/Supplement_2/S149.2.full.html

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
Allergy/Immunology
/cgi/collection/allergy:immunology_sub
Asthma
/cgi/collection/asthma_sub

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
/site/misc/Permissions.xhtml

Reprints
Information about ordering reprints can be found online:
/site/misc/reprints.xhtml
Effect of Long-term Corticosteroid Use on Bone Mineral Density in Children: A Prospective Longitudinal Assessment in the Childhood Asthma Management Program (CAMP) Study
Jaime Olene and James E. Gern
Pediatrics 2009;124;S149
DOI: 10.1542/peds.2009-1870SSS

The online version of this article, along with updated information and services, is located on the World Wide Web at: /content/124/Supplement_2/S149.2.full.html