REVIEWER COMMENTS. Although this study does not show a statistical difference between the beclomethasone and placebo groups, there are several important caveats. In screening for this study, 1371 children were seen and 846 children were excluded, mostly for wheezing at the baseline visit and corticosteroid use in the previous month. Had these children been seen a day earlier without wheezing, or a couple weeks later when they were “off” steroids, they may have qualified for the study; in addition, considering they may well have had increased bronchial hyperresponsiveness compared with some of the children in the study, this action may have accentuated the differences between beclomethasone and placebo. Although the conclusion of the study stands, it is important to note the strong trend in favor of beclomethasone, with a relative risk of 0.61 and the upper end of the 95% CI just eclipsing unity at 1.08 (associated with a P value of .09). A final point is that the study did not document when the child first exhibited signs of a viral upper respiratory tract infection. If the average child was not seen until day 3 (or even later), this delay in corticosteroid therapy could also bias the results to show minimal differences. In this regard, a useful follow-up study would be to repeat the protocol but only allow entrance in the first 24 to 48 hours of an upper respiratory tract infection; this early intervention would mimic what we currently tell our parents to do.

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Frank S. Virant, MD
Seattle, WA

Budesonide Nebulization Added to Systemic Prednisolone in the Treatment of Acute Asthma in Children: A Double-Blind, Randomized, Controlled Trial

PURPOSE OF THE STUDY. The goal of the study was to test the hypothesis that adding high-dose nebulized budesonide to standard asthma treatment in children in the emergency department (ED) during the first hour would decrease their hospital admission rate.

STUDY POPULATION. The study population included children aged 2 to 12 years with physician-diagnosed asthma (or previous episodes of shortness of breath responsive to a β-agonist) who presented to the ED with a moderate or severe acute asthma exacerbation.

METHODS. Children were randomized within the pharmacy (double-blind) to receive 3 doses of 500 μg/dose of budesonide or placebo with a β-agonist (salbutamol + ipratropium bromide) via nebulization every 20 minutes over 1 hour. They also received prednisolone 2 mg/kg (maximum dose of 60 mg). Asthma severity was assessed by using a previously studied asthma scoring system. Patients were assessed at baseline and 1 and 2 hours after initiation of medication. Those who remained in the ED were also evaluated at 3 and 4 hours. A decision to admit or discharge was made at 2, 3, or 4 hours.

RESULTS. The study enrolled 723 children, with 139 re-enrolled at subsequent visits for a total of 906 randomization assignments. Overall, there was no statistical difference in admission rates, with 16.4% of the budesonide group versus 18.3% of the placebo group admitted (P = .38). On subgroup analysis, however, among the more severe group, significantly fewer children in the budesonide group were admitted versus the placebo group (P = .03). Among the subgroup with severe asthma, there was a 58% reduction in the risk of admission in the budesonide group versus the placebo group.

CONCLUSIONS. The addition of nebulized budesonide to standard ED treatment decreased admission rates in children with severe acute asthma.

REVIEWER COMMENTS. Most ED protocols for acute asthma incorporate oral steroids in addition to bronchodilators (albuterol + ipratropium bromide). This study examined whether adding inhaled corticosteroids would decrease admission rates. Despite no change in admission rates in the full study population, a decrease in the severe group shows that adding inhaled budesonide may help the group of children with the highest risk of admission. Although it would require treating 7 patients to save 1 admission, this approach would be cost-effective compared with the cost of hospitalization. Using inhaled steroids in the ED also reinforces the role of inhaled steroids in the chronic management of asthma.


Melinda M. Rathkopf, MD
Anchorage, AK

Dexamethasone for Acute Asthma Exacerbations in Children: A Meta-Analysis

PURPOSE OF THE STUDY. The goal of this meta-analysis was to determine whether intramuscular or oral dexamethasone is equivalent or superior to a 5-day course of prednisone or prednisolone for acute exacerbations of asthma.

STUDY POPULATION. Children ≤18 years of age presenting to the emergency department (ED) with acute exacerbations of asthma requiring systemic steroids were included in the study.

METHODS. The authors performed a meta-analysis of 6 randomized controlled trials of acute asthma exacerbations in
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Melinda M. Rathkopf

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Melinda M. Rathkopf

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