Long-term Inhaled Corticosteroids in Preschool Children at High Risk for Asthma

PURPOSE OF THE STUDY. To determine the role of inhaled corticosteroid (ICS) in preventing the development of asthma in a group of high-risk children before the development of symptomatic disease or abnormal lung function.

STUDY POPULATION. Subjects were 285 children aged 2 to 3 years at high risk for developing asthma.

METHODS. Subjects were assigned to fluticasone propionate (FP) 44 μg twice per day with a pressurized metered-dose inhaler with spacer or placebo for a 2-year treatment period. The patients were observed without treatment for 1 year.

RESULTS. During the 2-year treatment period, there was significant improvement in symptom-free days for those in the FP group (86.8%–85.9%). Children in the FP group had more episode-free days, decreased exacerbations, and decreased need for extra controller medication. Those in the ICS group had a 1.1-cm decrement in growth after the first 2 years of the study, but this difference decreased to 0.7 cm after the 1-year observation period.

CONCLUSIONS. Early intervention with ICS did not affect the duration of acute illnesses or progression to persistent disease.

REVIEWER COMMENTS. The results of this very important study were confounded by the effect of delaying 3 days to initiate therapy, the unclear efficacy of the delivery system, and that 40% of the events were not confirmed by the investigators.

URL: www.pediatrics.org/cgi/doi/10.1542/peds.2007-0846NNN

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Rapid Effects of Inhaled Corticosteroids in Acute Asthma: An Evidence-Based Evaluation
Rodrigo GJ. Chest. 2006;130:1301–1311

PURPOSE OF THE STUDY. To analyze available evidence on the early (1–4 hours) clinical impact of inhaled corticosteroids (ICSs) for adults and children with an acute asthma exacerbation in the emergency department (ED).

STUDY POPULATION. A total of 470 adults (≥18 years old) and 663 children (6 months to 17 years old) seen in the ED or an equivalent care setting with a diagnosis of acute asthma.

METHODS. A search was conducted of Medline (1966 to February 2006) and Embase (1974 to February 2006) databases, the Cochrane Controlled Trials Register, bibliographic reviews of primary research, review articles, and citations from texts. Randomized, double-blind, placebo-controlled trials conducted in the ED or equivalent care setting comparing ICSs to placebo or systemic corticosteroids were analyzed. Primary outcome measures included hospital admission and ED discharge rates. Secondary outcomes were spirometric measures, clinical symptoms, heart and respiratory rates, oxygen saturation, and adverse effects, all measured from 1 to 4 hours of the protocol.

RESULTS. Fifty articles were identified on the initial search, and 17 of these randomized, double-blind, placebo-controlled studies (6 included adults and 11 included children) met the above-stated criteria. Eight studies compared ICSs with placebo, 3 compared ICSs plus systemic corticosteroids (SCSs) with SCSs, and 6 compared ICSs with SCSs. ICS doses used in the trials ranged from 400 μg to 2 mg dispensed by inhaler or nebulizer, and the ICSs used included fluticasone (3 studies), budesonide (8), flunisolide (2), dexamethasone (1), and beclomethasone (3). “Multiple-dose” protocols administered ≥3 doses of ICS at ≤30-minute intervals, and “single-dose” protocols administered ≤2 doses at ≤30-minute intervals or ≥1 dose at >30-minute intervals. Six studies examined the discharge rates 2 to 3 hours after multidose ICS treatment and found that a signifi-
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Pediatrics 2007;120;S140
DOI: 10.1542/peds.2007-0846PPP

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