monitor and respond to risk-taking behaviors in this age group.

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Transition to Adulthood: Delays and Unmet Needs Among Adolescents and Young Adults With Asthma

PURPOSE OF THE STUDY. To examine the effect of the transition to adulthood on financial and nonfinancial barriers to care in youths with asthma.

STUDY POPULATION. Studied were adolescents and young adults with asthma. Public-use data from the National Health Interview Survey conducted by the National Center for Health Statistics were analyzed. Data from the years 2000–2005 were pooled to provide a sample of 26,597 adolescents (12–17 years) and 19,998 young adults (18–24 years).

METHODS. Subjects were classified as having delayed care because of financial barriers when during the previous 12 months they had delayed seeking medical care because of concerns about affordability. Similarly, an unmet need because of a financial barrier was identified when during the previous 12 months the respondents indicated that they had failed to receive needed medical care or prescription medication because they could not afford it.

RESULTS. More young adults than adolescents encountered financial barriers that resulted in delays (18.6% vs 8%; P < .05) and unmet needs (26.6% vs 11.4%; P < .05). Delays caused by nonfinancial barriers were similar (17.3% vs 14.9%; P was not significant).

CONCLUSIONS. Delays and unmet needs caused by financial reasons were significantly higher for young adults with asthma compared with adolescents with asthma.

REVIEWER COMMENTS. It is crucial for everyone who treats children with asthma to recognize the potential vulnerability of these patients as they transition to adulthood. Appropriate counseling and written materials regarding health insurance might be helpful, as might providing lists of resources for free or reduced-cost care that are available in the local community.

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MEDICAL THERAPIES

A Multicenter, Randomized, Controlled Trial of Dexamethasone for Bronchiolitis

PURPOSE OF THE STUDY. To evaluate the efficacy of a single dose of oral dexamethasone (1 mg/kg) compared with placebo in the treatment of acute bronchiolitis.

STUDY POPULATION. A total of 600 children (aged 2–12 months) with a first episode of wheezing diagnosed in the emergency department as moderate-to-severe bronchiolitis were included.

METHODS. Patients were enrolled at 20 emergency departments during the months of November through April over a 3-year period. The primary outcome was respiratory assessment and score change during the first 4 hours. Later outcomes evaluated included length of hospital stay, medical visits, and adverse events.

RESULTS. Baseline characteristics were similar for both groups. The admission rate was 39.7% for children assigned to dexamethasone compared with 41% for those assigned to placebo. Both groups had improvement during the observation period with similar mean changes in respiratory assessment score. For the patients admitted to the hospital, there was no difference in mean hospital stay (2.55 vs 2.27 days), subsequent hospital admissions, or adverse events.

CONCLUSIONS. Single-dose dexamethasone did not prevent hospital admission for bronchiolitis.

REVIEWER COMMENTS. This study finally allows for a definitive statement that no significant benefit can be seen with the use of corticosteroid for first episodes of wheezing. It should be noted that bronchodilator treatment was not regulated but seemed not to affect outcomes because treatment was equally distributed between the groups. This continues to strengthen the notion that supportive therapy with good hydration and preventing hypoxia are the most important interventions for a first episode of bronchiolitis.

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Anti-inflammatory Effects of High-Dose Inhaled Fluticasone Versus Oral Prednisone in Asthma Exacerbations

PURPOSE OF THE STUDY. There have been reports that parenteral corticosteroids have no bronchodilator effect within
The first few hours of an acute asthma exacerbation and that their effect occurs within the first 6 to 8 hours after administration. Inhaled corticosteroids have been suggested to work faster than oral or parenteral corticosteroids in the emergency setting. This study was undertaken to investigate the mechanism through which inhaled steroids may act faster than oral steroids for acute asthma.

Study Population. The study included patients aged 16 to 65 years who were treated in the emergency department for moderate asthma exacerbations. Inclusion criteria included a previous diagnosis of asthma and no use of intravenous or oral steroid in the 4 weeks preceding the study.

Methods. This study was a randomized, double-blind, placebo-controlled prospective trial. There were 39 patients aged 16 to 65 years assigned to receive fluticasone and placebo prednisone (19 patients) or prednisone and placebo fluticasone (20 patients). The medication was administered via a metered-dose inhaler and spacer (16 puffs, 4000 μg/day or placebo) plus 1 pill (prednisone 30 mg/day or placebo). Spirometry and induced sputum for differential cell counts and albumin, α2-macroglobulin and blood eosinophil, interleukin 5, and granulocyte-macrophage colony-stimulating factor levels were obtained before treatment and 2, 4, 6, and 24 hours after treatment.

Results. Clinical symptoms (moderate-to-severe dyspnea) improved after 24 hours in both groups. Airway obstruction was similar between groups at baseline in peak expiratory flow and forced expiratory flow in 1 second, improving progressively during the first 6 hours and decaying slightly after 24 hours. There were no significant differences between treatment groups. eosinophil counts in sputum also improved over time in both groups. The effect was faster with fluticasone than with prednisone but was partially lost at 24 hours. In contrast, prednisone reduced blood eosinophil counts more strongly than fluticasone, although no more rapidly. Plasma protein in sputum and eosinophil count in blood both decreased until 24 hours, with no significant differences between the groups.

Conclusions. Both treatments resulted in improved symptoms, airway obstruction and inflammation, and plasma protein leakage at 24 hours. Prednisone seemed to have reduced blood eosinophil counts, whereas fluticasone reduced airway eosinophils, suggesting a less systemic antiinflammatory effect of inhaled fluticasone.

Reviewer Comments. The role of inhaled steroids during an acute asthma exacerbation is unclear. There is insufficient evidence that inhaled steroids alone are as effective as systemic corticosteroids for treatment of acute asthma. The authors showed that there was no significant difference between high-dose fluticasone and oral prednisone in reducing airway obstruction and treatment of symptoms. This is particularly interesting, because inhaled steroids are less systemically active as compared with either intravenous or oral steroids and may confer fewer adverse effects. Of note, however, is the tremendously high dose of fluticasone used in the study. All study subjects had a 3-week follow-up visit, yet the authors failed to mention any relapses or continued morbidity of the subjects’ asthma symptoms. It would be of great importance to observe whether patients treated only with inhaled steroids are able to regain control of their asthma symptoms in the same manner as those patients treated with systemic steroids. Moreover, further investigations are warranted to elucidate whether lower doses of fluticasone can produce similar effects on symptoms of asthma exacerbations and airway obstruction.

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β2 Adrenoceptor Polymorphisms Predict Response to β2-Agonists in Children With Acute Asthma


Purpose of the Study. To evaluate the influence of single-nucleotide polymorphisms in the β2-adrenoceptor gene on the response to inhaled β2 agonists in children with acute asthma exacerbations.

Study Population. There were 148 children aged 2 to 16 years presenting to the emergency department (ED) with an acute asthma exacerbation recruited between July 2002 and September 2004.

Methods. The ED physician’s diagnosis was based on the presence of wheezing with increased difficulty of breathing. Children were excluded if they had wheeze attributable to other factors (ie, cystic fibrosis, bronchopulmonary dysplasia, foreign body). The standard management of children presenting with an asthma exacerbation included oxygen if saturations were ≤94%, β2 agonist (salbutamol) and an anticholinergic (ipratropium bromide) via metered-dose inhaler with large-volume spacer at 20-minute intervals for the first hour, and prednisolone 1 mg/kg (maximum 40 mg). The initial severity of the asthma episode was determined by using a previously validated scoring system with a possible score of 5 to 15 (5–7 indicated mild; 8–11, moderate;
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/content/122/Supplement_4/S215.3