LOW-DOSE INHALED CORTICOSTEROID THERAPY AND RISK OF EMERGENCY DEPARTMENT VISITS FOR ASTHMA

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Purpose of the Study. To determine if inhaled corticosteroid (IC) therapy prescribed after discharge from the emergency department (ED) prevents relapse of asthma exacerbations.

Study Population. Twelve hundred ninety-three residents of Alberta, Canada, who were enrolled in a government drug plan and visited an ED for asthma exacerbations between April 1, 1997, and March 31, 1999.

Methods. The study cohort was identified using the Alberta Blue Cross database. Patients 5 to 60 years of age who had at least 1 ED visit for asthma were included in the cohort if they were enrolled in the government-sponsored drug plan. The cohort was followed from the time of the first identified ED visit to the date of a subsequent ED visit. Information regarding prescribed asthma medications was obtained through the Alberta Blue Cross database. The study population was stratified into nonusers and users of IC as well as into low (<500 μg/day beclomethasone dipropionate or equivalent per day), medium- (501–1000 μg/day), and high-dose (>1000 μg/day) users. Rates of subsequent ED visits for asthma were compared between the IC users and nonusers and between the low-, medium-, and high-dose groups using the Cox proportional hazard regression.

Results. Six hundred fifty-eight (50.9%) of the cohort were not prescribed IC. Of those who were prescribed IC, 241 (18.6%) received low-dose, 96 (7.4%) received medium-dose, and 122 (9.4%) received high-dose IC. Corticosteroid users were older and were more likely to have used other asthma medications during the first 100 days of follow-up than nonusers. Inhaled corticosteroid use was associated with a decreased risk (relative risk [RR]: 0.64; 95% confidence interval [CI]: 0.52–0.79) of a subsequent ED visit. After adjusting for age, sex, use of other asthma medications, comorbidity and hospitalization, IC users still had a significantly reduced risk of a repeat ED visit (RR: 0.55; 95% CI: 0.44–0.69). Patients in all 3 dose categories had significantly reduced risks of repeat ED visit (low-dose: RR: 0.52; 95% CI: 0.39–0.68; medium-dose: RR: 0.51; 95% CI 0.39–0.68; high-dose: RR: 0.67; 95% CI: 0.47–0.94). However, medium- and high-dose IC did not reduce the rate of repeat ED visits to any greater extent than did low-dose IC.

Conclusions. In this cohort with recent ED visits for asthma, IC reduce the risk of subsequent ED visits. The results suggest that this risk reduction is similar across all 3 dose groups and thus high-dose IC may not afford any greater protection than low-dose IC.

Efficacy and Safety of Low-Dose Fluticasone Propionate Compared with Zafirlukast in Patients with Persistent Asthma


Purpose of the Study. The study was designed to compare the efficacy and safety of fluticasone propionate and zafirlukast in patients with relatively stable persistent asthma who were previously treated with inhaled corticosteroids and short-acting β2-agonists.

Patient Population and Methods. A total of 440 patients (≥12 years of age) previously treated with inhaled corticosteroids (budesonide or triamcinolone acetonide) and short-acting β2-agonists were included in this randomized, double-blind study. After an 8-day run-in period, patients were treated with fluticasone (88 μg) or zafirlukast (20 mg) twice daily for 6 weeks. Outcome measures included pulmonary function (forced expiratory volume in 1 second [FEV1], peak expiratory flow [PEF]), albuterol use, asthma symptoms, withdrawals attributable to lack of efficacy, and asthma exacerbations.

Results. Patients treated with fluticasone (n = 224) experienced greater mean increases in FEV1 (0.24 L vs 0.08 L; P < .001), morning PEF (30 L/min vs 6 L/min; P < .001), and evening PEF (23 L/min vs 5 L/min; P < .001) during the study than did those treated with zafirlukast (n = 216). Fluticasone-treated patients had significantly greater increases in the mean percentages of symptom-free days (22% vs 8%; P < .001), rescue-free days (23% vs 10%; P = .002), nights with uninterrupted sleep (<1% vs ~5%; P = .006), and fewer asthma exacerbations (1% vs 6%; P = .005). Fewer fluticasone-treated patients were withdrawn because of a lack of efficacy (2% vs 13%; P < .001).

Conclusions. Inhaled fluticasone was more effective than zafirlukast in maintaining or improving asthma control in patients with relatively stable asthma who were switched from low-dose inhaled corticosteroids.

Reviewer’s Comments. Although ICs have been shown to improve lung function and reduce symptoms, the effect on ED visits and hospitalizations has been more difficult to ascertain because of the relative rarity of these outcomes as compared with symptom-based outcomes. The authors circumvented this issue by selecting a cohort of patients who had visited an ED for asthma thereby enriching the study population for those with more severe disease. This study underscores the significant role ICs play in preventing ED visits for asthma and suggests that the next step is to define the optimal dose range so that the risk:benefit ratio can be minimized.

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