**Review: Antileukotrienes are less effective than inhaled corticosteroids in chronic asthma**

Ducharme FM, Hicks GC. Anti-leukotriene agents compared to inhaled corticosteroids in the management of recurrent and/or chronic asthma in adults and children. Cochrane Database Syst Rev. 2002;(3):CD002314 (latest version 15 Jan 2002).

**Question**
In patients with chronic asthma, are daily antileukotrienes (ALs) as safe and effective as inhaled corticosteroids (ICSs)?

**Data sources**
Studies were identified by searching MEDLINE (1966 to 2002), EMBASE/Excerpta Medica (1980 to 2002), CINAHL (1982 to 2002), the Cochrane Airways Group register of randomized controlled trials (RCTs), the Cochrane Controlled Trials Register (to January 2002); checking the reference lists of all relevant trials; contacting the pharmaceutical companies that manufacture ALs; and contacting colleagues and trialists in the field of pediatric asthma.

**Study selection**
Studies were selected if they were RCTs comparing daily oral ALs at usual licensed doses with any type of ICS in children ≥ 2 years of age and adults with chronic asthma. Interventions had to be administered for ≥ 30 days.

**Data extraction**
Data were extracted independently by 2 reviewers blinded to identifying information about the study on quality (randomization, blinding, and description of withdrawals and dropouts), patient characteristics, drug type and dosage, and outcomes. The primary outcome was the rate of asthma exacerbations requiring systemic corticosteroids. Secondary outcomes were other indicators of exacerbation severity (hospital admissions), asthma control measures (change from baseline FEV1, and morning peak expiratory flow rate), symptom score, nocturnal awakenings, quality of life, and β2-agonist use), adverse effects, and withdrawal rates.

**Main results**
14 trials met the inclusion criteria (8 full text, 1 in press, and 5 abstracts). 12 trials were done in adults, 1 was in adults and adolescents (≥ 12 y), and 1 was in children (mean age 10 y). The duration of the intervention ranged from 4 to 37 weeks. The ALs tested were montelukast, pranlukast, and zafirlukast. 11 trials reported the primary outcome: More patients who received ALs than ICSs had an increased rate of asthma exacerbations (Table). In 9 trials that reported the rate of exacerbation requiring hospitalization, the groups did not differ (relative risk [RR] 1.73, 95% CI 0.64 to 4.73). All measures of asthma control at all follow-up time points were worse in the AL group than the ICS group. Groups did not differ for adverse effects (11 trials, RR 1.0, CI 0.9 to 1.1). More withdrawals occurred in the AL group than the ICS group (10 trials, RR 1.3, CI 1.1 to 1.6).

**Conclusion**
In patients with chronic asthma, daily antileukotrienes are not as effective as inhaled corticosteroids and increase asthma exacerbations requiring systemic corticosteroids.

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For correspondence: Dr. F. Ducharme, Montreal Children’s Hospital, Montreal, Quebec, Canada. E-mail francine.ducharme@muhc.mcgill.ca.

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**Antileukotrienes (ALs) vs inhaled corticosteroids (ICSs) for chronic asthma at 4 to 37 weeks**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Weighted event rates</th>
<th>RRI (95% CI)</th>
<th>NNH (CI)</th>
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<tbody>
<tr>
<td>≥ 1 asthma exacerbation requiring systemic corticosteroids</td>
<td>ALs</td>
<td>8.9%</td>
<td>5.9%</td>
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<tr>
<td>ICSs</td>
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*Abbreviations defined in Glossary, RRI, NNH, and CI calculated from data in article using a random-effects model.

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**Commentary**

The meta-analysis by Ducharme and Hicks further strengthens the argument that ICSs should be used as first-line treatment in mild persistent asthma. From pooled data of the 14 RCTs comparing ALs with ICSs as monotherapy in mild persistent asthma, ALs were less effective than ICSs in preventing asthma exacerbations requiring rescue oral steroids. However, no differences existed for more severe exacerbations requiring hospitalization. This complements other data that suggests that ICSs should be used as first-line treatment in mild persistent asthma. ALs may be considered as an alternative to ICSs if compliance with inhaled medication is in question or if ICSs are associated with unacceptable oropharyngeal side effects.

Frank Thien, MD, FRACP
Alfred Hospital and Monash University Melbourne, Victoria, Australia

**References**