Efficacy of montelukast in attenuating the September epidemic of asthma exacerbations

Children returning to school after the summer vacation are re-exposed to respiratory viral infections and sensitising allergens in the school environment. Consequently, the peak epidemic of asthma exacerbations requiring hospital treatment occurs annually in September. This study aimed to determine whether montelukast (ML), added to usual asthma therapy, would reduce the burden of asthma morbidity during the September epidemic.

Methods
This was a randomised, double-blind, placebo-controlled, 6-week study comparing the effect of adding oral ML (4 or 5 mg, according to age) or placebo to current therapy in 194 asthmatic children aged 2–14 years, stratified according to age group (2–5, 6–9 and 10–14 years) and sex.

Results
Children taking ML experienced 53% fewer days with worse asthma symptoms than those taking placebo (3.9 versus 8.3%; p<0.02). In addition, there was a marked reduction in unscheduled visits to physicians for asthma: four visits by four subjects in the ML-treated group, compared with 18 visits by 14 subjects in the placebo group (78% decrease; p = 0.01). Children taking ML were less likely to report using short-acting β₂-agonists during the study (average: 6.8 days versus 9.4 days with placebo; p = 0.05). The benefit of ML was seen both in those using or not using regular inhaled corticosteroids and among those reporting and not reporting colds during the trial. Boys aged 2–5 years showed greater benefit from ML (0.4 versus 8.8% days with worse asthma symptoms) than did the older males, whereas among girls the treatment effect was most evident in 10–14-year-olds (4.6 versus 17.0%), with no significant effects in younger girls.

Conclusion
Asthmatic children given ML in addition to regular therapy experienced half as many days with worsened asthma symptoms as those taking placebo during September, a period of high risk of asthma exacerbations. Children taking ML were also four times less likely than those receiving placebo to require unscheduled physician visits for asthma symptoms.

Original article

Message
Montelukast added to usual therapy reduces the risk of worsened asthma symptoms during the predictable annual September asthma epidemic

Editorial comment
Post-summer vacation asthma is an important health problem, since children are re-exposed to respiratory infections and to environmental allergens and pollutants. The epidemic peak usually occurs 3 weeks after the beginning of school [1]. Usually, inhaled steroids are prescribed to treat asthma symptoms, but they are less efficient in controlling post-viral asthma exacerbations [2]. The efficacy of ML in reducing the likelihood of exacerbations in children with persistent asthma is well documented [3]. Furthermore, the drug demonstrated its efficacy in some post-viral illnesses, such as bronchiolitis [4]. On the basis of these observations and given the fact that usually the regular use of anti-asthma medications is about 50% of patients, the addition of ML may improve drug compliance, since its administration route is oral and once daily.

This study found that adding ML to usual therapy is most clearly beneficial in younger boys and older girls, probably because its efficacy is influenced by hormonal changes. The short-term addition of ML to usual asthma therapy for 6 weeks after school return could be an efficacious, economical and well-accepted proposal.

References