Clinical reviews

Our panel of GPs review recent research papers in their specialist areas that may influence the way you practise

Respiratory disease

Temporary quadrupling of inhaled steroids can reduce severe asthma exacerbations

A temporary four-fold increase in inhaled steroids for deteriorating asthma control reduced the incidence of severe exacerbations, in a UK study.

Asthma patients aged 16 years or over were recruited to the pragmatic, unblinded, randomised trial. All were receiving inhaled glucocorticoids, with or without add-on therapy, and had had at least one exacerbation in the previous 12 months that required systemic glucocorticoid therapy.

A self-management plan that included an increase in the dose of inhaled glucocorticoids by a factor of four for deteriorating asthma control (quadrupling group) was compared with one without such an increase (non-quadrupling group), over a period of 12 months. Both plans also recommended increasing inhaled bronchodilators for deteriorating asthma control.

A total of 1,922 patients underwent randomisation (957 to the quadrupling group and 965 to the control group).

The mean age of the participants was 57 ± 15 years, 1,305 participants (68%) were female, 1,495 (78%) were receiving 1,000 µg or less per day of beclomethasone (or equivalent glucocorticoid), and 1,344 (70%) were using a long-acting beta-agonist/inhaled glucocorticoid combination inhaler at the time of randomisation. Patient characteristics were similar in the two treatment groups at baseline.

The primary outcome was the time to a first severe asthma exacerbation, defined as treatment with systemic glucocorticoids or an unscheduled healthcare consultation for asthma. Scheduled visits took place at 6 and 12 months after randomisation. For patients who were lost to follow-up, staff attempted to review electronic patient records to document whether they had had an asthma-related general practice appointment or had been prescribed systemic glucocorticoids during the trial period.

Of the 1,922 participants, 1,114 (58%) reached zone 2 (deteriorating asthma control) or higher of their self-management plan during follow-up (562 in the quadrupling group and 552 in the non-quadrupling group).

The number of participants who reported a severe exacerbation of asthma in the year after randomisation was 420 (45%) in the quadrupling group and 484 (52%) in the non-quadrupling group; an adjusted hazard ratio for the time to a first exacerbation of 0.81 (95% CI: 0.71-0.92; P = 0.002).

Additional adjustment for age, sex, and peak flow at randomisation had little effect on the hazard ratio. The percentage of participants who used systemic glucocorticoids was lower in the quadrupling group than in the non-quadrupling group, as was the percentage of participants who had unscheduled healthcare consultations for asthma.

Reported adherence to the management plan was similar in the two groups.

Limitations to the study included the lack of blinding as the study design was open-label. The pragmatic nature of the trial may also have affected the quality of secondary outcome data such as the number of peak flow measurements and quality of life questionnaires completed. Nevertheless, the data that were collected were consistent with better asthma control in the quadrupling group.

The researchers conclude: 'In our trial, the number of patients who needed to be provided with such a self-management plan in order to prevent one severe asthma exacerbation was 15 (95% CI: 9-43).

'Given the potential benefit with respect to preventing exacerbations and in view of the toxic effects of inhaled glucocorticoids and the biases that may have been introduced by the absence of blinding, individual practitioners, patients, and guideline committees will need to consider whether the magnitude of the reduction achieved is clinically meaningful.'

From a GP perspective the study emphasises the value of personalised asthma self-management plans and opens a door to adaptation of these to include updating of inhaled steroids during exacerbations.

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McKeever T, Mortimer K Wilson A. Quadrupling inhaled glucocorticoid dose to abort asthma exacerbations. *N Engl J Med* 2018;378:902-10