Statement concerning the second revision of the British guidelines on asthma management

P Stephenson, on behalf of the Steering Committee of the General Practitioners in Asthma Group

Introduction

The second revision of the British (also known as the BTS) guidelines on asthma management[1] represent a consensus statement developed by an expert multidisciplinary panel, whose judgements were supported by eight background review papers.[2-9] The rationale behind these and previous guidelines[10-12] has been summarised by Harrison.[13] The GPIAG has been at the forefront of changes in primary care management of asthma over the past 10 years and the group has participated in the production of all three sets of BTS guidelines. During this second revision the GPIAG was represented by six members of the group.

This statement highlights the most important changes in the new guidelines, particularly those most relevant to primary care where most asthma management takes place.

Diagnostic issues

The diagnosis of asthma in the under-fives can be difficult because there are a number of patterns of asthma which may require different therapeutic approaches.[14-16] More studies are needed to confirm clinical benefit from early diagnosis and effective anti-inflammatory treatment.[17]

It is important to involve parents in the diagnostic process and to share their expectations and anxieties at an early stage, otherwise their administration of treatment is likely to be half-hearted. Anxieties about the prognosis can be countered by evidence (in schoolchildren) for improved outcome with effective treatment,[17] and that studies suggest that up to two-thirds of children with parent-reported asthma grow out of their symptoms by their 30s.[18]

To differentiate between asthma and chronic obstructive pulmonary disease (COPD) in middle-aged and elderly patients, a trial of high-dose oral steroid with regular peak expiratory flow (PEF) monitoring should be given for a minimum of two weeks. Residual doubt about the diagnosis warrants specialist referral.

Therapeutic issues - new to this revision

i) The use of short-acting ß2-agonists

The 1995/96 guidelines reiterate the need to use minimum doses of ß2-agonists on an 'as required' basis and suggest the addition of inhaled steroids when patients need to use a short-acting ß2-agonist inhaler more than once a day,[1] though Barnes suggests three times a week.[2]

ii) The role of long-acting inhaled ß2-agonists

The position of long-acting ß2-agonists within the treatment guidelines is now a clear step 3 alternative to the use of higher dose inhaled steroids. Long-acting ß2-agonist treatment should only be continued if there is evidence of benefit.

iii) Anti-inflammatory treatment – inhaled steroids

– Fluticasone

A new inhaled glucocorticoid, fluticasone propionate (FP) is as effective as half the dose of beclomethasone dipropionate (BDP) and budesonide (BUD), when given by equivalent delivery systems.[19,20] Low-dose FP is effective and superior to sodium cromoglycate in young children with mild to moderate asthma.[21]

– Budesonide (BUD) via a Turbohaler™

Therapeutic doses should be halved when changing the delivery of BUD from pressurised metered dose inhaler (pMDI) to a turbulent flow inhaler.[17]

– Side-effects of inhaled steroids

The side-effect profile for those patients on low to moderate doses of inhaled steroids is extremely good. There is evidence that all inhaled steroids are absorbed to some extent from the lung,[22] and there is increasing evidence that the delivery system used is an important determinant of the degree of systemic effect.[23] Systemic effects are reduced by the use of a large volume spacer with pMDI or by mouth-washing if using a dry powder inhaler.

– The under-fives

At step 2 for the under-fives, there is now a straight choice between treatment with sodium cromoglycate or low-dose inhaled corticosteroids. Both these options are safe and effective. Sodium cromoglycate is rarely effective for infants under the age of one.[24] Barnes recommends that, because BUD and FP produce less systemic effects than BDP, these steroids are preferable in children.[2, 22]

– pMDI and spacer

For those patients using a spacer device with pMDI, inhalation from the device should take place as soon as possible after actuation. Single dose, rather than multiple dose, actuation is recommended and the patient should be told to tidal breathe for four breaths or to take a single deep inhalation. The device should be washed, rinsed and dried by air, once a week, but not wiped dry, in order to prevent increased electrostatic charging.

– High doses to gain control - then step down

Another change from the 1993 guidelines[12] is the emphasis upon gaining control of asthma with moderate to high doses of inhaled steroids. The new guidelines suggest starting with moderately high-dose inhaled steroids (even steroid tablets) in order to gain control. The dose is then decreased in a stepwise manner by 25% every three months, according to the patient's clinical condition, while monitoring symptoms, use of relievers and PEF.

iv) Theophylline

Theophylline has a narrow therapeutic range, is hazardous in the toxic range and many physicians remain wary of using it. There is now an option to use theophylline at step 3. Further work is needed before the use of low-dose theophylline, for its anti-inflammatory action, can be recommended for the treatment of mild asthma.

(v) CFC-free propellants

The new guidelines stress the importance of preparing patients for the changeover to new CFC-free inhalers.

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CFC-free inhalers have been shown to be safe and effective and no dosage adjustment is necessary for CFC-free salbutamol formulations.

Guided self-management plans

There is now definite evidence of benefit from patient education and the issuing of written self-management plans.[3] PEF monitoring is recommended for those patients who are poor perceivers of symptoms,[25] those with brittle or life-threatening asthma, those who are undergoing changes in their treatment and those who have recently been in hospital.

Allergy and environmental issues

Smoking (including parental smoking) should be strongly discouraged. There is clear evidence that passive smoking exacerbates childhood asthma and that maternal smoking is associated with an increased prevalence of wheezing illness in the young.[26] An allergy history should be taken,[6] and interpreted together with limited skin prick tests. Patients with sensitivity to house dust mite should be given advice on barrier methods to reduce allergen load.

Occupational asthma (OA) accounts for about 2% of adult asthmatics. Asthma, with symptoms that improve on days away from work, suggests a diagnosis of OA requiring specialist referral.

Psychosocial factors affecting asthma management

One of the strengths of primary care medicine in this country is that we are trained to manage asthma on a physical, psychological and social level. Nevertheless, potentially avoidable deaths and severe morbidity continue and there is now increasing evidence that psychosocial factors may be important.[8]

Management of acute severe asthma

Assessment

When deciding whether or not to admit a patient, features of severity, such as PEF, the ability to speak sentences, respiratory and pulse rates, past history (previous admissions), A&E attendances, compliance and current treatment should be borne in mind. As an outcome and severity measure, PEF as a percentage of best provides a realistic gold standard for the patient (always assuming that absolute best function has been achieved with good treatment).[7]

Nebulised treatment

There has been a shift from the use of nebulisers to pMDIs with a large volume spacer in many situations.[23] Nebulised ipratropium bromide may be added (by GPs or ambulance crews) to other standard therapy for patients with life-threatening asthma or for those whose asthma fails to improve on standard therapy.[27]

Oral steroid dosage

In adults, a dose of 30-40 mg/day of prednisolone should be started immediately and should be continued until the patient's acute severe asthma is completely resolved (i.e. no nocturnal disturbance and PEFs greater than 80% of best). In adults doses of 30-40 mg/day are safe for up to three weeks. In children, a dose of 1-2 mg/kg/day should be given with a maximum dose of 40 mg for up to three days.

Audit of asthma in general practice

The usefulness of the guidelines depends upon practitioners changing their management appropriately. A national survey of 206 GPs[28] showed that 95% of GPs surveyed were aware of the 1993 BTS guidelines and 70% had changed how they managed asthma as a result of the guidelines. Tools necessary for audit in primary care include an asthma register, prescribing information, information on patient referral rates and hospital admissions, information on consultation rates and protocols for dealing with exacerbations and severe attacks of asthma.[7]

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Additional references are available from MMI, Bath Brewery, Toll Bridge Road, Bath BA1 7DE and on the Internet.

Who is admitted to hospital with asthma?

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Abstract

Background: Asthma is an important cause of acute hospital admission. Previous studies have been largely hospital-based, focused on a single centre and have considered either adults or children. This nationwide study was based in primary care and covered all age groups.

Objective: To describe the characteristics of patients admitted to hospital with asthma compared to those asthmatics not admitted to hospital.

Method: 361 practitioners recorded data from 11249 patients. Data included age, sex, British Thoracic Society (BTS) treatment step, admission to hospital and number of in-patient days in the previous 12 months.

Results: Children under five were the most commonly admitted age group (20.8% of all admissions), but admissions were seen in all age groups (57.8% of patients admitted were over 16). Patients on BTS treatment step 4 accounted for less than half of all admissions (45.6%). Older patients had longer in-patient stays (age <5: mean 1.9 in-patient days; age >75: mean 7.7 in-patient days).

Conclusion: Admission to hospital with asthma is seen in all ages and at all levels of treatment. Acute severe asthma can occur in all age groups and in patients with minimal symptoms and on minimal treatment. There is, therefore, a need for surveillance of all asthmatics, not just those on higher levels of treatment.

Introduction

Admission to hospital has a significant impact on patients' quality of life, causes absence from school and work[1] and has implications for use of scarce health service resources.[2] Rates of admission for acute asthma appear to be rising[3] and asthma represents a major proportion of acute medical admissions.[4,5] Previous studies have originated from secondary care, and were often single centre-based and focused on either adult or paediatric populations.[6,7] There is, therefore, a need for a study based in primary care, where the majority of asthma sufferers receive most of their care,[8] covering the whole of the UK and encompassing all age groups. The National Asthma Management Studies 1994 and 1995 gave just such an opportunity. These were two large nationwide studies examining the management of asthma in primary care.[9]

The aim of this paper is to describe the characteristics of patients admitted to hospital with asthma in the UK compared to those patients with asthma who are not admitted.

Method

For the National Asthma Management Study 1994 a mailing invitation was sent to a random sample of 5000 of the 33000 general practitioners in the UK with the aim of recruiting 200 general practitioners and 5000 patients. Two hundred and twenty five practitioners responded providing data on a total of 6732 patients. The study was repeated in 1995 when a further 136 practitioners responded, providing data on an additional 4517 patients, giving a total of 11249 patients.

Data were collected on GP and nurse consultations, asthma attacks, emergency treatment, hospital attendance and symptom control over a 12 month period, together with demographic details for each patient. Response was voluntary and there was no financial incentive, but responders were offered the opportunity to enrol in a distance-learning package accredited for postgraduate education allowance. The practitioners involved were not a special interest group, but by participating they did demonstrate an enthusiasm to look at their asthma care.

Analysis of the responders showed them to be spread throughout the UK with good concordance with UK population distribution. Partnership size was typical of the UK as a whole. Instructions were given to participants on how to select a representative sample of patients and a

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