Review of the new asthma guidelines

Guidelines for the management of asthma have been in existence since the 1990s (British Thoracic Society et al, 1997; British Thoracic Society and Research Unit of the Royal College of Physicians of London, 1990). However, developments in drug therapies, new inhaler devices and concerns about the effects of using high doses of inhaled corticosteroids have led to an update of existing advice in new evidence-based guidelines (BTS and Scottish Intercollegiate Guidelines Network, 2003).

Evidence supporting the guidelines  BTS and SIGN have used an established methodology for reviewing evidence for the new guidelines (Harbour and Miller, 2001). Over 15,000 clinical papers were reviewed and the level of evidence graded from 1 ++ which included high quality meta-analyses and systematic reviews of randomised controlled trials through to 4 (expert opinion). Recommendations were then graded from A to D according to the level of evidence. Where there was limited or no evidence for recommendations, good practice points were identified based on the clinical experience of the evidence review group.

There were 10 multidisciplinary evidence review groups looking at different aspects of asthma for both adults and children (Box 1).

The age ranges in the new guidelines have been refined to 0 to five years, five to 12 years and 12 years and over. Management of acute asthma in hospitalised infants under two years has also been included.

Key messages

Diagnosis  The guidelines remind us that asthma is a clinical diagnosis which can be supported by objective measures such as lung function testing. The diagnosis and method used to confirm it must be recorded in patients’ records. If tests and presenting history are inconclusive, alternative diagnoses should be excluded.

There are some amendments to both the recommended diagnostic tests for asthma and the interpretation of the results but they remain broadly similar to previous guidelines (BTS et al, 1997; 1990). Spirometry is now the preferred means of performing lung function tests. In primary care this raises issues of having access to spirometry, as well as training implications if practices purchase spirometers.

Diagnosis in young children  In young children where lung function testing is not possible or can be unreliable, a wheeze rather than a cough is important in confirming the diagnosis of asthma and ideally should be heard on auscultation by a health professional. In children diagnosis is based on clinical history, signs and an assessment of response to a trial of treatment. Excluding alternative diagnoses such as cystic fibrosis is essential and where the diagnosis is in doubt referral must be made to a respiratory paediatrician.

Non-pharmacological management  The guidelines point to a lack of evidence supporting complementary therapies. It is unknown whether allergen avoidance is of benefit in the management of asthma although breastfeeding should be encouraged as it protects against wheezing in infants. Immunotherapy has been shown to be effective but further studies are required.

Smoking cessation  The guidelines highlight the direct causal relationship between parental smoking and lower respiratory tract illness in children up to three years of age. In addition, risks to the foetus of maternal smoking are well known and smoking may generally contribute to the severity of asthma. The guidelines emphasise the role of health professionals in encouraging and supporting patients who wish to stop smoking.

Pharmacological management  The new guidelines have maintained the clinical management steps of previous guidelines but there are some major changes.

Inhaled corticosteroids are now the preventer therapy of choice for five-year-olds and above. Sodium cromoglicate is no longer an alternative first-line recommendation. In children under five years, inhaled corticosteroids are the first line preventer therapy but leukotriene receptor antagonists (LTRAs) are an alternative if inhaled corticosteroids cannot be used. Long-acting beta2-agonists are first-line additional therapy once patients are taking either 800μg (adults) or 400μg (children) per day of beclometasone or its equivalent and asthma remains poorly controlled. Paediatric referral is essential if children are not responding to treatment or are on doses higher than

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**References**

800µg of inhaled steroid (beclometasone or equivalent). Children’s height should be monitored regularly and documented to record any effects of treatment or poorly controlled asthma.

In primary care, patients taking high dose inhaled steroids should be reviewed to ensure they are receiving optimum asthma therapy. Referral to a respiratory expert is necessary if regular oral steroids are required for maintenance therapy.

Inhaler devices The National Institute for Clinical Excellence (NICE, 2002; 2000) has published inhaler guidelines for children aged five years and under, and from five to 12 years. The new guidelines advocate that:

■ Patients should be taught to use an inhaler;
■ A combination of a spacer, metered dose inhaler and facemask (if required) is the preferred method for inhaled corticosteroids;
■ Patients’ preferences should be considered;
■ Patients must be able to use their inhaler.

Management of acute asthma The guidelines state that large volume spacers are equally as effective as nebulisers in administering high doses (10 to 20 puffs/actuations) of short-acting bronchodilator in an acute asthma attack. In life-threatening episodes, continuous nebulisation of beta₂-agonists via an oxygen-driven nebuliser is preferred. However, a high-flow regulator must be fitted if an oxygen cylinder is used in primary care. In severe asthma, ipratropium bromide should be added to beta₂-agonists. A new addition to the guidelines is the recommendation of a single dose of intravenous magnesium sulphate for adults with life-threatening asthma who are in hospital.

Objective assessment using peak expiratory flow and oxygen saturation levels during an acute asthmatic attack is essential. Oxygen saturation readings may not be performed in primary care because of a lack of appropriate equipment, and the introduction of pulse oximeters has both financial and training implications.

Oral steroids must be used for an acute asthma attack and be introduced early. Doses have been simplified:

■ Up to two years old: 10mg of prednisolone per day for up to three days;
■ Age two to five: 20mg of prednisolone per day for up to three days;
■ Age five to 12 years: 30–40mg of prednisolone per day for up to three days, but tailored if necessary until recovery occurs;
■ Adults: 40–50mg of prednisolone per day for at least five days or until recovery. Patients should be reviewed after an acute attack.

Asthma in pregnancy Risks to the foetus are greater if maternal asthma is not controlled and an acute attack occurs. Therefore, all asthma therapies including oral steroids are considered safe in pregnancy, but asthma should be monitored closely so treatment can be titrated appropriately. LTRAs should not be started in pregnancy but can be continued if they have made a significant benefit to asthma control prior to pregnancy.

Occupational asthma Ten per cent of adult onset asthma may be caused by work conditions. The guidelines stress the need to suspect an occupational cause if symptoms are better when away from work.

Organisation and delivery of care Some asthma patients are at greater risk of fatal or near fatal asthma and an enquiry into asthma deaths indicated that adverse psychosocial issues are significant factors (Mohan et al, 1996). The guidelines recommend that at-risk registers in both primary and secondary care should be developed to help prevent asthma deaths.

The guidelines support the role of an asthma nurse trained in asthma management and a structured patient review system. Patients could be targeted for review and more active asthma care using questionnaires about their symptoms. Examples of questionnaires can be found in the guidelines or on the British Thoracic Society website.

Education, self-management and compliance All patients should have a written asthma action plan so that they achieve and maintain asthma control. This plan should be developed as part of a structured educational discussion. Listening to the patient’s concerns and goals, and providing practical advice are important aspects of care. Nurses trained in asthma management have an opportunity to help patients recognise the limitations that asthma may have on their lives and ensure that information and advice about asthma is both current and consistent.

Audit Audit is essential to clinical management and the guidelines recommend that meaningful audit topics need to be decided as part of a team approach to care.

Summary Asthma specialists will welcome the new guidelines, but they need to be disseminated to all those who care for people with asthma. Clinic protocols will need revision, new equipment may need to be purchased and there are likely to be training needs identified, with inevitable resource implications.