

Management of asthma in children

Introduction

Asthma is the commonest chronic disease in children, affecting at least 15% of all children at some stage in their childhood. This opinion sheet constitutes a short summary of the latest guideline evidence on the management of paediatric asthma, with particular emphasis on the main areas of concern for parents - the diagnosis itself, the need for regular treatment including inhaled steroids, inhaler devices, lifestyle issues, and avoidance of trigger factors.

Diagnosis

Diagnosing asthma correctly is important in order to ensure that the right treatment is prescribed and that unnecessary medications are avoided. The diagnosis of asthma is largely clinical. The likelihood of asthma being the correct diagnosis in a patient presenting with persistent symptoms of cough, wheeze and shortness of breath, particularly at night and after exercise, in the context of a family or personal history of atopy, varies with the age of the patient¹. A four-week trial of treatment with an inhaled corticosteroid and bronchodilator can help to differentiate between the different 'wheezing phenotypes' in children under six years of age: if symptoms cease during the trial period and then return soon after treatment is stopped, asthma is the likely diagnosis². In children over the age of six, peak expiratory flow (PEF) monitoring can be used to provide supporting objective evidence of the diagnosis. PEF variability of >15% is strongly suggestive of asthma. A failure to respond to anti-asthma treatment should lead to a review of the differential diagnosis; in particular, the younger the child the more likely it is that other diagnoses might be the cause of the presenting symptoms³, and referral to a respiratory paediatrician should be considered.

Asthma in children

Long-term management of chronic asthma raises many issues for parents and children. These relate to both pre-school and school age children; however, some issues are more specific to particular age groups.

Acceptance of the diagnosis

There may be initial shock at the diagnostic label of asthma, but for some parents the diagnosis is a relief and a confirmation of parental suspicions, especially if there is a family history of asthma.

Parents may have concerns that relate to:

- previous experience of asthma
- the need for regular treatment
- use of steroids and the side effects of asthma medications
- the effects on normal lifestyle e.g. limitation of physical activity, school, holidays, travel, work prospects
- avoidance of asthma triggers.

Previous experience of asthma

Previous parental experience or knowledge of asthma can reassure or cause concern. It is important to discuss any concerns, and to discuss the expectations of treatment in order to ensure treatment success and resulting asthma control.

Need for regular treatment

Treatment should follow established guideline recommendations such as the BTS/SIGN British Guideline on the Management of Asthma⁴, or the International Primary Care Respiratory Group (IPCRG) Guideline on the Management of Asthma⁵. A stepped approach to treatment provides a framework for increasing treatment when needed and for decreasing treatment once asthma control is achieved. It is essential to titrate the initial treatment to the degree of asthma symptoms and severity. Reducing treatment levels too soon can result in poor symptom control.

Asthma treatment - Steroids and side effects of asthma medications

Asthma medications are generally safe and effective but parents often worry about the need for regular treatment and the possible long-term side effects; many of the concerns relate to the use of corticosteroids. The media often portray steroids as harmful and addictive because

the word steroid is incorrectly used interchangeably between anabolic steroids and glucocorticosteroids. Careful explanation to parents is essential to pre-empt and address potential concerns.

Corticosteroid treatment should follow national guideline recommendations and upper dose limits should be adhered to. Failure to respond to treatment should prompt a review of;

- adherence to treatment
- drug delivery method
- dosage
- need for additional medication
- the diagnosis - if necessary.

Leukotriene receptor antagonists may be useful in children from 6 months of age as an alternative to inhaled corticosteroids, particularly if there are difficulties in delivering inhaled medication or if treatment is ineffective. They may be useful for the non-atopic viral wheezer and if there is concomitant allergic rhinitis in children age 12 years and over. Children who have difficult asthma and fail to respond to doses of 800 mcg day beclometasone or equivalent must be referred to a paediatrician for management advice. If regular oral steroids are required this should only be instigated by the respiratory paediatrician. These are often given on alternate days to avoid systemic side effects.

If there is concomitant use of topical steroids for rhinitis and eczema, the total steroid dose needs to be taken into account and reviewed. Growth should be monitored in all children with asthma to:

- monitor any effects of corticosteroids on growth
- identify any effects of poorly controlled asthma on growth.

Long term potential side effects of corticosteroids need to be minimised including the need to reduce the likelihood of osteoporosis in adult life. Local side effects of oral candidiasis and dysphonia are reduced or avoided with the use of a spacer device and rinsing out the mouth with water after use.

The lowest dose of corticosteroids should always be used to minimise the potential for side effects and with the aim of

- minimising/abolishing symptoms
- minimal need for reliever medication
- no exacerbations
- no limitations of physical activity
- maintaining normal lung function.

All children should be provided with an individualised asthma action plan and treatment reviewed at regular intervals. Asthma can be managed effectively in children using symptom management⁶.

Inhaler devices

Lack of effective drug delivery is an important reason for treatment failure in pre-school children. Parents need to be taught how to use spacer devices (plus or minus a facemask). The use of the device should be made fun, conflict avoided, and a pattern of behaviour established to enable device acceptance without an ensuing 'battle' between child and parent. If device acceptance is poor it should be put away and tried again a few hours later. Symptoms may persist until regular treatment is established and there is acceptance of the device by both the parent and child. A persistent and consistent approach is needed to establish treatment.

Face masks should fit closely around the nose and mouth and single doses of medication administered at a time. The face should be washed and wiped dry after using a face mask to avoid unnecessary topical exposure to corticosteroids. Plastic spacer devices need to be washed appropriately to reduce static effects and to prevent a reduction in available actuated medication.

School age children want devices that are both effective and socially acceptable to them. Spacer devices are frequently used for twice daily corticosteroid medications but may not be acceptable when away from home. Combination inhalers are useful to reduce the need for multiple inhalers. It is important to listen to what is acceptable to the child and their parents and to work with them to find a device that delivers the right medication, one they can use and which takes account of their likes and dislikes⁷. Inhaler devices for bronchodilators need to be small, portable, discreet and acceptable.

Lifestyle issues

Issues relating to asthma at nursery or school often cause concern. Schools should have a written asthma policy document for children with special medication needs.

The school needs to be aware of the asthma diagnosis and the need for medication. A reliever inhaler device should be accessible at all times. The school need to know:

- what to do if there is worsening of asthma symptoms
- what, and how much treatment to give
- what to do if there is no improvement
- a parental contact number.

Asthma UK provides school asthma cards which can be used to provide a written record of this information for the school or nursery.

It is important to encourage all children to participate in school activities, including exercise. Exercise is an important part of a healthy lifestyle because it enables an adequate level of fitness to be achieved, leads to a sense of well being, and helps to keep a normal weight. Pre-exertional treatment with a bronchodilator may be needed to prevent exertional asthma symptoms.

Pre-school children who are at nursery or are cared for by child minders need similar information but they need to know how to administer the inhalers correctly. Sometimes young children will take inhaler medication from their carers but not their parents which may relieve the parents of the stress of giving medication to their child.

Asthma triggers

Viruses are the most common trigger of asthma in children and are difficult to avoid.

Passive smoking is known to exacerbate asthma symptoms and to increase viral exacerbations in the preschool child. Parents and carers need encouragement to stop smoking or at least avoid smoking in front of the child. They may find it helpful to be referred to local smoking cessation support services if they want to stop smoking. Smoking cessation should be discussed at every opportunity when appropriate. In older children smoking should be actively discussed because smoking is an airway irritant and reduces the efficacy of asthma treatment.

Stress is an increasing problem and may occur when undertaking national performance tests and public examinations at school. The peak pollen season coincides with these important examinations and unfortunately can also exacerbate asthma and rhinitis symptoms. There is evidence that hayfever can contribute to a lower examination grade at GCSE⁸.

Summary

There are many facets to the management of childhood asthma. Achieving a sound diagnosis is essential. Discussion between the health professional, the parents and the child is required to address any issues of concern. Current asthma guidelines provide the accepted treatment framework for the appropriate management of asthma.

Resources

Asthma UK: www.asthma.org.uk
For information on school asthma cards, action plans, pre-school guidelines and help to develop an asthma policy for school. Kick Holidays - adventure holidays for children.
Education for Health: For information on asthma courses for health professionals. www.enquiries@educationforhealth.org.uk

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Date of Preparation: March 2006

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This series of opinion sheets has been generously supported by educational grants from Merck Sharp & Dohme and Novartis Pharmaceuticals.

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