ABC of Asthma

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CLINICAL COURSE

Growing out of asthma

Parents of asthmatic children usually ask whether their child will "grow out of" his asthma. Most wheezy children improve during their teens, but the outlook depends to some extent on the severity of their early disease.

More than half of the children with infrequent wheezing will be free of symptoms by the time they are 21. In contrast, of those with frequent, troublesome wheezing only 20% are symptom free at 21, although 20% are substantially better. In 15% asthma becomes more troublesome in early adult years than it ever was in childhood. Even if there is a prolonged remission lasting several years symptoms may return later. After a year free of symptoms airway reactivity remains abnormally high, and a third of these children who have a year's remission will get further symptoms years later.

Asthma is less likely to remit in those with a strong family history of atopy or a personal history of other atopic conditions. More boys than girls are affected by asthma but the girls do less well during adolescence and by adulthood the sex ratio is equal. Chest deformities are uncommon and only occur when there is prolonged severe intractable asthma. Children with asthma usually show normal growth unless they have received long term treatment with systemic corticosteroids, though puberty may be delayed when asthma is severe. There is, as yet, no definite evidence that the quality of asthmatic control affects the long term prognosis and the development of chronic airflow obstruction.

Prognosis in adults

When asthma develops in adults it often shows less spontaneous variation than it does in children. Wheezing is more persistent and there is less association with obvious precipitating factors other than infections. The chances of a sustained remission are also lower than in children. When there are known precipitating factors avoidance of contact with them does decrease bronchial reactivity.

Cigarette smokers with increased bronchial reactivity may be particularly at risk of developing chronic irreversible airflow obstruction. This makes it particularly important that asthmatic patients are told not to smoke.

Educating patients in the management of their own asthma and the use of treatment is an integral part of treatment. Patients forget much of what they are told at consultations, and information should be backed up by written instructions. It is often helpful to produce these by hand with the patient. Patients are often confused about the differences between regular prophylactic treatment, such as inhaled corticosteroids or sodium cromoglicate, and quickly effective inhaled bronchodilators used for acute attacks. Regular home use of a mini peak flow meter allows the patient to participate much more effectively in the understanding and treatment of his disease.
Genetic factors

A familial element is well recognised in asthma. But inheritance is not straightforward, and the development of asthma depends on environmental factors acting with the genetic predisposition. Asthma and atopy are commoner in the families of those with extrinsic asthma than in those with intrinsic asthma. Atopy seems to have its own separate inheritance, and the likelihood of asthma is increased when the two genetic predispositions occur together. The movement of racial groups with a low prevalence of asthma from an isolated rural environment to an urban environment increases the prevalence, probably because of their increased exposure to allergens such as house dust mites and fungal spores or to infectious agents.

The chance of an individual developing asthma by the age of 50 years is increased 20 times if he or she has a first degree relative with asthma. The risk is greater the more severe the asthma in the relative. It has been suggested that breast feeding may reduce the risk of a child developing atopic conditions such as asthma because it restricts the exposure to ingested foreign protein in the first few months of life.

Deaths from asthma

Since the increase in mortality from asthma seen in some countries in the early 1960s there has been concern about the role of treatment in such deaths. Originally the deaths in the 'sixties were attributed to cardiac stimulation caused by overuse of inhaled isoprenaline. Many workers have since doubted whether isoprenaline was directly responsible; instead, too great a reliance on its usual efficacy may have delayed appropriate treatment when symptoms worsened. Isoprenaline as a bronchodilator has now been superseded by safer specific β stimulants, and there is nothing to suggest that these inhaled drugs are associated with deaths in asthmatic patients.

The recent increase in mortality from asthma in New Zealand has again aroused controversy. Again the reasons are uncertain; the combination of methylxanthines and β stimulants and the use of home nebulisers have both been blamed.

In contrast to suggestions that excessive treatment is implicated in such deaths, the recent British Thoracic Association study showed that treatment in most fatal attacks had been inadequate. Both patients and doctors underestimated the severity of the attacks, and, in particular, doctors appeared reluctant to prescribe corticosteroids for severe asthmatic episodes. Nevertheless, about a quarter of the deaths occurred less than an hour after the start of an exacerbation, and patients showing such rapid deterioration are particularly vulnerable. If patients have shown a swift deterioration in the past they should have suitable treatment available at home and be sure of how to obtain immediate further help.

Several centres have adopted the policy recommended in Edinburgh of maintaining a self admission service for selected asthmatic patients. This avoids delay in admitting patients to hospital and is a logical development to involving patients in the management of their own disease.

Some studies have shown that patients are particularly at risk after they have been discharged from intensive care units to ordinary wards and after discharge from hospital. Problems often occur in the early hours of the morning, at the nadir of the diurnal cycle, and may be related to premature tailing off of the initial intensive therapy on the basis of satisfactory measurements during the day. Adequate supervision and treatment must be maintained through these periods.

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