

# International consensus report on diagnosis and management of asthma

Consensus on various topics of medical science have become commonplace at the end of the 20th century, especially in areas where controversies exist or in which improvements are required to decrease the prevalence and/or severity of a disease. It is therefore evident that an agreement has to be reached to reduce the prevalence, morbidity and mortality of asthma, a common and potentially severe disease. Within the past 5 years, several national consensus have been published on the management of asthma. Although, overall, they identified similar problems and proposed guidelines based on the importance of anti-inflammatory treatment and the education of patients, they were usually "regionalized". Thus, to present a general approach to asthma diagnosis and management, an International Consensus was prepared under the auspices of the National Heart, Lung and Blood Institute (NHLBI, Bethesda, USA) by 18 specialists from different countries and reviewed by 12 consultants.

The international "war" against asthma has started with the publication of the International Consensus, but a team effort on the part of doctors, medical staff and patients will be required to decrease the severity of asthma and increase the quality-of-life of those afflicted.

## Why do we need a consensus on the management of asthma?

### *Epidemiological and socio-economic reasons*

Asthma represents one of the most common chronic pathological conditions throughout the world. It is estimated that 4–6% of the population suffers from asthma both in developed and developing countries. Moreover, although good epidemiological evidence is difficult to obtain, it appears that the prevalence of asthma has actually increased during the past two or three decades (1). This may be related to changes in the allergenic environment and interactions between allergens and pollutants. It has been shown that passive smoking in infancy and diesel exhausts increase the prevalence of atopic diseases and that vehicle pollution may increase the allergenic content of pollens.

The severity of asthma has only recently become clearly understood. Asthma morbidity has also increased in recent years as shown by hospital admissions for asthma (2). This trend was observed in all age groups but was particularly marked in children. Asthma mortality is again causing worldwide concern and, particularly in the younger age groups, death rates have increased since 1970 (3). Studies from most countries have suggested that over 70% of these deaths are preventable.

Asthma also seriously affects the social life of patients and is a major cause of absenteeism both from school and work, even though it is believed that the great majority of asthma sufferers should be able to lead normal or near normal lives if properly treated.

Finally, direct and indirect costs for asthma have sharply risen within the past 10 years: over 4 billion dollars in the US (4) and 800 million pounds in the UK. With adequate management these costs could be reduced since almost half are related to lost productivity and sickness benefits.

Thus, as stated by Doctor Buist during the 1990 annual meeting of the American Thoracic Society: "all statistics concerning asthma (incidence, morbidity, mortality) seem to go in the wrong direction despite increased treatment. Is this due to a change in the severity of the disease or, alternatively, is treatment causing harm?"

### *Poor understanding of asthma by doctors*

The reasons underlying these unsatisfactory trends are not completely understood but at least two major problems have been identified. Airways obstruction in asthma involves more than a spasm of the bronchial smooth muscle. Bronchoalveolar lavage and bronchial biopsies have demonstrated that bronchial inflammation plays an important role in the pathogenesis of asthma (5). Inflammation is often followed by repair processes and leads to a remodeling of the airways (6). Although the reversibility of the airways obstruction is complete at the beginning of the disease, an irreversible component appears, sometimes rapidly, in many if not most of the patients. Thus, treatment should involve more than bronchodila-

tors, and, the suppression or prevention of the inflammatory reaction is an essential part of asthma therapy. However, the majority of patients are treated only with bronchodilators and worldwide sales of anti-inflammatory drugs are far below those of bronchodilators.

#### *Poor understanding of asthma by patients*

A second major cause of concern is the poor understanding of asthma and its treatment by patients. Failure in the management of asthma is often observed among young patients who died from their disease. Strategies for the management of high-risk patients have been suggested and, at least in countries with a high death rate such as New Zealand, they have led to a decrease in mortality.

These considerations indicate that the management of asthma could be improved by using anti-inflammatory drugs early in the course of the disease as well as by education programmes (4).

### **Why do we need an international consensus on the management of asthma?**

Within the past 5 years several attempts have been made to establish various consensuses on the management of asthma. The first, the Paediatric consensus (7), was followed by four dealing mainly with adults: Australasian, Canadian, British and American (8–10).

Although all these consensuses pointed out the importance of early introduction of anti-inflammatory treatments and education of asthmatic patients, they were, with the exception of the Canadian, inclined to be regional. In particular, the extensive US consensus proposed low-dose inhaled corticosteroids but did not include drugs that are not available in the US, such as nedocromil sodium. In the British consensus there was no place for specific immunotherapy.

Many other countries were preparing their own national consensus and it was decided in the spring of 1991 that an international consensus should be formed with experts from all parts of the world with different expertise, such as clinicians including paediatricians, allergists, pulmonologists, as well as doctors and scientists with expertise in socio-economic medicine.

The first meeting took place in March 1991 in San Francisco, during the annual meeting of the American Academy of Allergy and Immunology, and the delegates discussed the importance of international guidelines. Further, they agreed that the management of asthma was very similar in all countries, making it possible to reach an overall agreement within a year. The goals of the international panel of

experts was to revise the existing material and to propose guidelines that could be accepted worldwide. Doctor Albert Sheffer (Boston) was the chairman of the International Consensus that was held under the auspices of the National Heart, Lung and Blood Institute (NHLBI, Bethesda) which provided all the facilities necessary to compile the document. Dr Claude Lenfant, Dr Suzane Hurd, Mr Robin Fulwood and Mrs Ginny Taggart were particularly helpful.

A year after the initial meeting in San Francisco, the final document was released in the US during the annual meeting of the American Academy of Allergy and Immunology and in Europe during the annual congress of the European Academy of Allergology and Clinical Immunology.

### **The goals**

The goals in the management of asthma are to control the symptoms, to maintain normal activity including exercise and social life, to maintain pulmonary function as near as possible to normal values, to prevent asthma exacerbations and the development of an irreversible bronchial obstruction, and to avoid side effects from drugs. In summary, to ensure the best possible quality-of-life for asthmatic patients, particularly children.

### **Overview of the International Consensus**

The consensus is a 72 page document reviewing the existing knowledge on asthma definition, diagnosis, classification and management. It also includes special considerations in the management of asthma in relation to pregnancy, surgery, physical activity, rhinitis, sinusitis and nasal polyps, occupational asthma, respiratory infections, gastro-esophageal reflux, aspirin-induced asthma, complicated asthma, and psychological factors. Finally, it lists areas for research and resources.

The definition of asthma was proposed in 1958 and revised in 1962. It was mainly based on clinical grounds and overlapped with chronic bronchitis. The operational definition by the International Consensus is now based on the recent studies of the pathophysiology of asthma and includes concepts of chronic bronchial inflammation, variable airflow obstruction, which is in some cases irreversible, and increase in airway hyperresponsiveness.

The panel of experts devised a six-part management programme for effective management of asthma which forms the basis of the consensus:

1. *Educate patients to develop a partnership.* Education of asthmatic patients is essential, so that they can modify their treatment themselves without per-

manent need of their physician. Education also leads to an improved control of asthma as well as a reduction in the number of attacks, particularly those that are life-threatening. This may be achieved by a permanent and co-ordinated relationship between specialists (pneumologists, allergologists, physical medicine, etc.), general practitioners, medical co-workers (nurses, physiotherapists, health education teachers, psychologists) and the asthmatic patient.

2. *Assess and monitor severity with objective measures of lung function.* The panel stressed the importance of spirometry for the initial and scheduled periodic assessment, as well as the regular use of home peak flow monitoring for patients who use medications daily.

3. *Avoid and control asthma triggers.* Environmental control measures are an important prevention strategy that should always be attempted even though they are rarely completely effective. Immunotherapy may be used in carefully selected patients with mild to moderately severe asthma using high quality extracts.

4. *Establish plans for chronic management.* This chapter is the most extensive of the consensus. It highlights the importance of inhalation therapy and the early use of anti-inflammatory drugs. Because asthma is a dynamic as well as a chronic condition, planned medication needs to take into consideration the variability of the airflow obstruction, and a "step up" and "step down" approach is proposed in which the number and frequency of medications are increased or decreased according to symptoms. A colour-coded asthma zone management system has been developed to help patients better understand and monitor the variable nature of this chronic disease and take appropriate action for its control. Written plans for each zone are essential for improving patient adherence.

5. *Establish management plans for exacerbations.* Exacerbations usually reflect either a failure of chronic management or exposure to a noxious agent. Therapy for exacerbations emphasises the early introduction of corticosteroids as well as frequent administration of inhaled  $\beta_2$  agonists. Recommendations for rapid recognition of severe attacks and for reaching medical care are clearly described.

6. *Provide regular follow-up care.* Patients need regular supervision and support by a clinician who is experienced in asthma. Continual monitoring is essential to assure the therapeutic goals.

## Unclear or unresolved issues

In 1992, the management of asthma is far from adequate and the panel of experts attempted to identify and resolve many problems, but there are many issues to be addressed and about which our current knowledge is still limited. Among them are the long-term use of  $\beta_2$ -agonists and immunotherapy. Moreover, new drugs such as long-acting  $\beta_2$ -agonists are being produced and their place in the management of asthma needs further assessment to be fully appreciated. These considerations mean that the International Consensus will need updating within the next few years to incorporate new information. Although the recommendations of the panel appear to be applicable to developed countries, efforts should be made to apply them to some of the developing countries. Such an initiative is currently being investigated through WHO.

## Hopes raised

As stated by Dr Lenfant, "the document is intended for use by asthma specialists to provide insight on recognized modalities for asthma management and assist these specialists in their dissemination of the best possible care for asthma patients." This means that the guidelines should be adapted to each individual nation according to the asthma care provided and medications available. Dissemination of the information should be extended to all doctors treating asthmatics, medical and non-medical staff and, more importantly, to patients. Thus, concerted effort and cooperation are required to make this consensus a working document at the patient's level and to improve morbidity and mortality rates as well as the social and professional life of patients. With such a document it is hoped that asthma will not remain the one if not only preventable chronic disease for which statistics "are going in the wrong direction".

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