The contribution primary care (general practice) has made to asthma care in the past twenty years

I Charlton

There have been three major changes that have occurred in the management of asthma in the past 20 years.

- i) The development and implementation of guidelines that have laid down the most appropriate methods by which asthma should be treated.
- ii) The recognition that the patient requires an educational package which teaches them the knowledge and skills to manage asthma themselves.
- iii) The use of allied health professionals to help co-ordinate the delivery of these initiatives to the patient.

As might be expected these changes have had the greatest impact on general practice where up to 90% of asthma patients are managed.^{1,2} GPs have played a large part in bringing about these changes and contributing to the body of information that we now take for granted.

Much of the early work was performed by Gregg who, through documenting patients in his own surgery, determined the predicted values for peak expiratory flow (PEF) and tested the use of beclomethasone.^{3,4} Harding and Modell^{5,6} found a high degree of inappropriate assessment and management amongst patients in a London practice. It was noticed that half the patients did not take their asthma medications as prescribed and a quarter had tried non-medical treatments. It was not until the studies by Speight^{7,8} documenting the underdiagnosis and undertreatment of childhood asthma, that general practitioners, with somewhat dented pride, began to look more closely at the problem of asthma. Levy documented that it was taking up to 20 'respiratory' consultations to make the diagnosis of asthma in children.⁹ Spelman highlighted the role of cough in the diagnosis of childhood asthma.¹⁰ Barritt,¹¹ in an audit of his own practice, recognised that 68% of parents of children with asthma and 78% of adult asthma patients, had inadequate understanding of their asthma and that 32% were inadequately managed.

In the middle of the 1980s, some of the first work to improve the primary care management of asthma was undertaken by Hilton,¹² Sibbald¹³ and White¹⁴ at London's St George's Hospital Medical School. This group of primary care researchers highlighted what could be achieved by a dedicated research team which included GPs, research fellows and psychologists. Hilton's paper¹² and the subsequent repeat by Jenkinson,¹⁵ demonstrated that randomised controlled studies could be undertaken in primary care and that simply presenting patients with information did little to change their behaviour relating to their asthma. White¹⁴ elaborated a similar principle when educating GPs, i.e. that giving GPs knowledge about asthma did not change their behaviour in ways that affected their patient's morbidity. These were crucial studies because they focused the future management of asthma on strategies that would modify behaviour, rather than simply giving information to patients.

During this period there was a movement to incorporate practice nurses into the management of asthma. Following on from work by Singh,¹⁶ who demonstrated

that GP mini-clinics for diabetes could match the care of hospital specialists, Pearson¹⁷ and Barnes¹⁸, described a similar model for the care of asthma patients in general practice. Usherwood¹⁹ was the first to report the impact of a clinic on the systematic management of children with asthma. Children attending the clinic had missed significantly fewer days of school, and had less home visits and out of hours calls.

A second group of GP researchers at Southampton began to produce evidence of the impact of clinics on the care of general practice asthma patients,^{20,21} the role of self-management plans^{22,23} and the targeting of care²⁴ with a morbidity index.²⁵ Other GP researchers contributed to the debate and helped to define the components that were likely to be most effective in the asthma clinics,²⁶⁻²⁹ namely, a systematic approach that incorporates teaching patients, who require regular therapy, the techniques of self-management plans based on both PEF and symptoms.

In 1987, the management of asthma in primary care made its 'giant leap' with the establishment of the General Practitioner's In Asthma Group (GPIAG) by Peter Barritt, and five other GPs. For the first time GPs had a mechanism whereby they could contribute, and submissions were made, most noticeably to the Health of the Nation and the British Thoracic Society guidelines.³⁰

Another significant contribution from general practice in the mid-1980s was the use of a large spacer device and face mask by McCarthy to treat infants and small children.³¹ For young children these simple devices not only provided more effective treatment but allowed the diagnosis of asthma to be undertaken with greater certainty. A response to therapy, a major component in making a diagnosis of asthma, was much more attainable.

With the formation of the GPIAG Research Unit, came the third group of asthma researchers, headed by the Director, Ron Neville at Dundee in 1991. One of their early papers was the National Asthma Audit of 1991-2.³² For the first time GPs had an appreciation of how they were performing as a profession and whether they were achieving the goals of the BTS guidelines.

The North of England Asthma Guideline Development Group,³³ principally headed by GPs, broke new ground by examining the evidence for asthma guidelines and how they might apply to general practice. Whilst much of the direction for asthma management had come from the respiratory physicians, there was now considerable input from GPs and nurses. This led to a questioning of the BTS guidelines² and their application to general practice.

GPs, working in their own practices, are able to contribute greatly to our understanding of asthma. Typical examples are Livingston's report that demonstrated no link existed between traffic pollution, asthma and place of residence,³⁴ Jackson's³⁵ work examining the optimal use of inhaled therapy delivery systems and Jones' studies using exercise tests as a screening tool for childhood asthma.^{36,37}

Ian Charlton
General Practitioner

7 Tilba Street
Kincumber, 2251
Australia.

email:
whizz@ozemail.com.au

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With improvement in GP networks and information technology, multicentre studies involving many GPs have been able to answer important clinical questions. For example, Levy's study which showed no difference between the use of high dose fluticasone and oral steroids has ramifications for the structure of management plans.³⁸

New strategies using facilitators^{39,40} and GP feedback information sheets,⁴¹ whilst not able to demonstrate sustained improvements in clinical care, are important in shaping the direction of general practice asthma care.

To date the most successful approach to the management of asthma has been the advent of nurse-run asthma clinics and while there has been relatively little data to testify to their effectiveness^{19-21,26} their widespread use would suggest they fill a hiatus in the system, namely a systematic way of training patients in self-management skills. An important insight into why they might be effective was highlighted by Neville who found that clinics run according to the Family Health Services Authority structure were not associated with favourable clinical outcomes, unlike practices whose asthma clinics had undergone audit.²

Price⁴² confirmed the value of the audit process and demonstrated that whilst good asthma care costs more in terms of asthma drugs, the overall costs of prescribing and hospital costs are reduced.

Important insights into the process of asthma care have begun to emerge from a new 'asthma cell' working from Primary Medical Care, St Bartholomew's and London Medical Schools. Feder,⁴³ Naish⁴⁴ and Griffiths⁴⁵ have collectively examined prescribing costs, hospital admissions and the impact of guideline implementation. Guidelines do promote an increase in prophylactic prescribing which is likely to be more expensive, however, practice size is the strongest influence inner city hospital admissions for asthma.

General practitioners can feel encouraged that, through both individual efforts and teamwork, the management of asthma, which was in danger of becoming a specialist disease by default, has improved considerably. The last 20 years has seen GPs resume their role as primary care specialists with respiratory physicians acting as consultants in the true sense of the word. Our consultant colleagues are to be commended, providing much of the early impetus to the establishment of the BTS guidelines and collaborative work as demonstrated by the GRASSIC studies.⁴⁶⁻⁴⁸

Further progress by GPs will continue particularly in the area of allergen avoidance. As we come to understand that asthma, like many diseases, influences our lifestyle, it will no doubt fall to GPs to develop strategies which help patients make the necessary adjustments to their lives in order to minimise the impact of the disease.

In recognition of the importance of groups of GPs working together the GPIAG has launched an initiative to fund a Professorial Chair of General Practice Respiratory Medicine. If successful, it will be a first for general practice and the beginning of one of the most productive periods for general practice as a discipline which can contribute considerably to the understanding of asthma.

Finally, I would hope this article encourages a vigorous flow of letters by readers who feel certain GPs working in the field have been ignored. I apologise for any oversights and would be delighted to hear, through letters to the editor, of any colleagues who deserve a mention.■

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The differential diagnosis of COPD and asthma

P Buttery and T Higenbottam

Chronic obstructive pulmonary disease (COPD) is a disorder characterised by irreversible airflow obstruction, whereas in asthma the airway obstruction is reversible, either spontaneously or with treatment.¹ COPD patients have reduced maximum expiratory flow and slow forced emptying of the lungs; features which do not change markedly over several months. In most patients the airflow limitation is slowly progressive and irreversible.²

From the clinician's point of view, perhaps the biggest problem with these two respiratory disorders is that the clinical findings often overlap and making diagnosis difficult.

Differential diagnosis

It is important to realise that COPD embraces a variety of clinical pictures which range from non-smokers with severe steroid-dependant asthma to heavy smokers with bronchitis and advanced emphysema. Whilst there is an overlap between asthma and COPD related to smoking, they are different diseases with different aetiologies, pathologies, natural histories, and responses to treatment.³

Diagnostic confusion or failure to respond to treatment are indications for referral to a specialist. In all patients presenting with wheezing, breathlessness, or airway obstruction, the health professional should consider:

1. Whether the airways obstruction is localised (e.g. due to cancer, a foreign body, post-tracheostomy stenosis, vocal chord dysfunction with wheeze), or generalised.
2. If the airways obstruction is generalised, whether it could be due to asthma (in which case it is predominantly reversible) or to COPD (when the obstruction is largely irreversible), or to a combination of the two. Alternatively, one of the more unusual causes such as bronchiectasis,

Table 1: Clinical features distinguishing COPD and asthma

COPD	Asthma
Little variation in PEF Poor/no reversibility to oral steroids Poor/no reversibility to inhaled steroids Poor/no reversibility with bronchodilators Chronic hypoxaemia Decreased diffusing capacity Emphysema on x-ray History of smoking	PEF variability Good reversibility to oral steroids Good reversibility to inhaled steroids Reversibility with bronchodilators Atopy

obliterative bronchiolitis, or cystic fibrosis should be considered.³ The presence of bronchiectasis can be detected by high-resolution computed tomography (HRCT).

The most common distinguishing features of COPD are the chronicity of the condition and the limited response to conventional asthma treatment. However, there may be some clinical features which suggest one disorder rather than the other (Table 1).

The use of spirometry in differential diagnosis

Spirometry is useful to assess the severity of COPD, to predict the prognosis and to assess the response to therapy. The presence of airflow limitation in COPD is recognised by a reduction in the ratio of the forced expiratory volume in one second (FEV₁) to the vital capacity (VC).² Most modern spirometers are capable of producing an expiratory flow volume curve or loop. The flow volume curve is another way of showing forced ventilatory action and is obtained by plotting inspiratory and expiratory flow rates against lung volume.

The expiratory flow loop shows the peak expiratory flow (PEF) rate as expiration begins, with the flow rate gradually decreasing as the lungs empty, reaching zero

Patricia Buttery
Clinical Nurse Specialist
in Asthma

Tim Higenbottam
Professor of Respiratory
Medicine

Respiratory Medicine,
Division of Clinical
Sciences, Floor F, The
Medical School, University
of Sheffield, Beech Hill
Road, Sheffield S10 2RX.

Correspondence to:
Patricia Buttery

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