

THORAX

Editorials

General practitioners and asthma

The decision to allow certain chronic diseases, notably asthma and diabetes, to become eligible for payments for health promotion clinics is one of the more positive ideas contained in the new contract for general practice. In a four doctor practice with 10 000 patients one partner can earn the equivalent of a clinical assistantship by fostering structured asthma care within the practice. Equally important is the fact that good standards of care in asthma may be demanded by the local FHSAs if funding for the clinics is to continue. Many FHSAs have taken the opportunity to bring together general practitioners, paediatricians, and chest physicians so that local guidelines, protocols, and training can be instituted. Undoubtedly, making money available for structured care has already increased interest in asthma in general practice.

Organisation of structured asthma care in general practice is not easy. An average list of 2000 patients will yield about 140 patients with asthma who have active symptoms (60 children and 80 adults), of whom about 80 will benefit from prophylactic drugs and be prepared to inhale them regularly.¹ A small number of asthmatic patients will resist standard treatment and perhaps three or four patients per GP will need specialist supervision. Manual recall is possible but difficult for such large numbers; a computer makes the task easier. A weekly clinic with 10 or more appointments can provide the backbone of structured care for a practice of 5000 patients. The clinic should be run at a time convenient for patients, preferably in the afternoon or evening (or both). Patients should be able to consult a doctor outside clinic times for routine checks if they prefer. Practice nurses have established a useful role in asthma care, particularly in educating patients and monitoring their progress. The widespread use of peak flow monitoring and symptom analysis helps to ensure that drug treatment is effective and adequate.²

Most practices taking an interest in structured asthma care have realised that a concerted effort by all the practice staff is required for the best results. Receptionists need to be briefed on the importance of arranging urgent attention for patients complaining of worsening asthma, breathlessness, or wheezing, and they also require the cooperation of all doctors in the practice so that urgent visits or appointments materialise without fuss. Although a particular doctor and practice nurse may take responsibility for the asthma clinic, it is important that this process does not alienate the remaining nurses and doctors in the practice. This is best illustrated by looking at the problem of diagnosis. Even in committed practices delays in diagnosis seem long,^{3,4} and at times the diagnosis is missed altogether. The asthma clinic will function well only if all the partners in the practice are diagnosing the disease accurately and then promptly referring patients to it. One of the first tasks at the clinic is to make sure that history taking, clinical examination, and peak flow readings over a week confirm the diagnosis. Chest radiography in children under 18 months of age and in adults of 40 years and over should be seriously considered if wrong diagnoses are to be avoided. As more practices have fully computerised consultation records it should become

easier to track down undiagnosed cases by searching for entries under headings such as chest infection and cough. Computer searches for children given frequent prescriptions for antibiotics or antitussives could similarly be used to help in diagnosis. Numbers of consultations for respiratory complaints before diagnosis and the delay from the first respiratory consultation to diagnosis in new cases arriving at the clinic could usefully be fed back to all the doctors in the practice. Diagnosis of asthma in patients who smoke may be particularly difficult as both patient and doctor may attribute symptoms to chronic bronchitis. The practice's asthma clinic can usefully review all patients with chronic chest disease at least once to ensure that a trial of corticosteroids with peak flow monitoring has been conducted at some stage.

The 1990s may prove to be the decade of consensus. As good scientific research replaces expert dogma the messages being received by general practitioners become more consistent. Experts now seem able to agree on treatment for both childhood asthma⁵ and adult disease.^{6,7} In general, family doctors welcome concise guidelines on how to manage common conditions, but thought needs to be given to simple and clear presentation. The publications most often read by general practitioners are the ideal place for guidelines to appear, and this excludes specialist journals. General practitioners are generally well represented on national bodies making recommendations and this helps to ensure that advised strategies are both relevant and practicable.

Although there is no clearcut evidence of adverse effects from regular daily β agonists, their use may decline^{8,9} and they may be recommended to be taken only as required. Sodium cromoglycate still provides useful steroid sparing prophylaxis for many children with asthma, but increasing reliance on inhaled steroids is probable. The usual pattern of new drug prescribing—namely, experimentation, enthusiasm, overuse, and then disillusion—will no doubt occur. A major public swing against inhaled corticosteroids would be a setback as their use more than any other development has revolutionised asthma care. In future the bulk of inhaled steroids will be prescribed by general practitioners. Clear advice on rational prescribing is essential. Side effects of inhaled steroids are increasingly documented and it behoves all of us to minimise side effects.

The distinction between beclomethasone dipropionate and budesonide is not well researched. The temptation is to assume that two drugs of the same group that are equipotent at a given dosage are identical. The evidence from such research as has been carried out suggests that this is not so. Bone resorption studies by Ali *et al* showed reduced serum alkaline phosphatase activity in patients taking beclomethasone dipropionate 2000 μ g a day but no significant reduction with budesonide 1800 μ g daily.¹⁰ Recent case histories from Connert and Lenney suggest that budesonide may have caused behaviour disturbance, which resolved with dose reduction or transfer to beclomethasone dipropionate.¹¹ A further corticosteroid for inhalation waits in the wings and may appear on stage soon. Fluticasone

propionate is claimed to be more potent than beclomethasone dipropionate, with reduced systemic absorption.

Whatever the long term side effects of inhaled corticosteroids prove to be, undoubtedly their benefits far outweigh their disadvantages. This fact does not, however, absolve us from the responsibility of balancing benefits and risks. If asthma in children can be well controlled with sodium cromoglycate then we may reasonably suggest that this should be first line prophylactic treatment for this age group. Similarly, if adult asthma is well controlled with daily doses of up to 400 µg daily of inhaled steroids transfer to nedocromil may be sensible. If alternative strategies fail we need have no hesitation in using inhaled steroids.

General practitioners need to be familiar with safe dosages and should try to prescribe the minimum effective dose—whether this is found by working up or reducing down probably makes little difference. Doses of inhaled steroids of up to 400 µg daily in children under 8, 800 µg in the 8–16 year olds, and 1600 µg in adults are reasonable.¹² The mode of delivery may make a difference to the dosage of inhaled steroids. Rotahalers and Diskhalers are less efficient than metered dose inhalers and the manufacturer recommends doubling the dose of powdered drug to get the therapeutic effect achieved by a metered dose inhaler used with good technique.¹³ A more recent study by Zainudin *et al* has suggested that the Rotahaler delivers 80% of the dose delivered by the metered dose inhaler, so perhaps the efficiency of powder systems has been underestimated.¹⁴ Studies on the Turbohaler by Engel *et al* suggested that it performs as well as metered dose inhalers used with good technique.¹⁵

Spacer devices have an important place in the administration of inhaled corticosteroids. The Nebuhaler has been shown to increase drug deposition in the lungs and substantially reduce oropharyngeal deposition.¹⁶ Both the Volumatic inhaler and the Nebuhaler have been shown to reduce the adrenocortical suppression caused by high doses of inhaled steroids.^{17 18} The major disadvantage of spacers is their bulk, but as inhaled steroids are generally prescribed to be taken twice daily this is not a great problem. Switching from powder inhaled steroids to metered dose inhalers with spacers makes dramatic savings in prescribing costs. The addition of soft masks to spacer devices enables these to be used for infants as well as young children.¹⁹ In view of their effectiveness, safety, reduction in side effects, and low cost there are good arguments for making spacers the devices of choice for inhaling steroids, particularly for patients requiring high doses. If powder devices are used for inhaled steroid administration, mouth rinsing after use seems particularly important.²⁰

The major interaction between general practice and secondary care comes with acute asthma requiring hospital admission. Increasing rates of admission, particularly in childhood, may reflect increasing prevalence or severity of disease, but greater awareness of the dangers of acute asthma by doctors and patients may lead to earlier and more frequent admissions.²¹ Prompt administration of oxygen, nebulised bronchodilator, and oral corticosteroids followed by rapid hospital admission is the best treatment for acute severe asthma. Good standards of acute asthma care are an essential part of the drive to reduce deaths from asthma, and the local asthma committees that are being set up need to examine this important area. Good communication between general practice and the local hospital is crucial, particularly at discharge. An acute asthma attack should prompt a review of prophylactic medication and self management plans either in the outpatient clinic or in the

practice. In the first week or two after an acute attack patients seem particularly receptive to advice.

There is a pressing need for more research and audit on asthma in the community. General practitioners interested in asthma can find fellow enthusiasts within the British Thoracic Society or via the General Practitioners in Asthma Group. The latter group now has 300 members, an annual scientific meeting, and ongoing collaborative research projects.

Asthma care in 1992 stands on the threshold of dramatic improvement. Effective treatment and workable systems of delivering care provide us with an opportunity to improve the lives of asthmatic patients that is unparalleled. Interested general practitioners, chest physicians, and paediatricians need to seize this opportunity to work together to ensure that money invested in structured asthma care results in the improved morbidity and mortality that the public and their politicians will expect.

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- 1 Barritt PW, Staples EB. Measuring success in asthma care: a repeat audit. *Br J Gen Pract* 1991;41:232–6.
- 2 Charlton I, Charlton G, Broomfield J, Mullee MA. Evaluation of peak flow and symptoms only self management plans for control of asthma in general practice. *BMJ* 1990;301:1355–9.
- 3 Charlton I, Jones K, Bain J. Delay in diagnosis of childhood asthma and its influence on respiratory consultation rates. *Arch Dis Child* 1991;66:633–5.
- 4 Jones A, Sykes A. The effect of symptom presentation on delay in asthma diagnosis in children in a general practice. *Respir Med* 1990;84:139–42.
- 5 Warner JO, Gotz M, Landau LI, Levison H, Milner AD, Pedersen S, *et al*. Management of asthma: a consensus statement. *Arch Dis Child* 1989;64:1065–79.
- 6 British Thoracic Society, Research Unit of the Royal College of Physicians of London, King's Fund Centre, National Asthma Campaign. Guidelines for management of asthma in adults: I—Chronic persistent asthma. *BMJ* 1990;301:651–3.
- 7 British Thoracic Society, Research Unit of the Royal College of Physicians of London, King's Fund Centre, National Asthma Campaign. Guidelines for management of asthma in adults: II—Acute severe asthma. *BMJ* 1990;301:797–800.
- 8 Sears MR, Taylor DR, Print CG, Lak DC, Li Q, Flannery EM, Yates DM, *et al*. Regular inhaled beta-agonist treatment in bronchial asthma. *Lancet* 1990;336:1391–6.
- 9 van Schayck CP, Dompeling E, van Herwaarden CLA, Folgering H, Verbeek ALM, van der Hoogen JM, *et al*. Bronchodilator treatment in moderate asthma or chronic bronchitis: continuous or on demand? A randomised controlled study. *BMJ* 1991;303:1426–31.
- 10 Ali NJ, Capewell S, Ward MJ. Bone turnover during high dose inhaled corticosteroid treatment. *Thorax* 1991;46:160–4.
- 11 Connett G, Lenney W. Inhaled budesonide and behavioural disturbances. *Lancet* 1991;338:634–5.
- 12 Huskisson SC, Meades CR, Cuss FMC, Palmer JBD. *Inhaled beclomethasone dipropionate: systemic effects reviewed*. Aberystwyth: Castle Press, 1990.
- 13 Chatterjee SS, Butler AG. Beclomethasone dipropionate in asthma: a comparison of two methods of administration. *Br J Dis Chest* 1980;74:175–9.
- 14 Zainudin BMZ, Biddiscombe M, Tolfree SEJ, Short M, Spiro SG. Comparison of bronchodilator responses and deposition patterns of salbutamol inhaled from a pressurised metered dose inhaler, as a dry powder, and as a nebulised solution. *Thorax* 1990;45:469–73.
- 15 Engel T, Heinig JH, Malling HJ, Scharling B, Nikander K, Madsen F. Clinical comparison of inhaled budesonide delivered either via pressurised metered dose inhaler or Turbohaler. *Allergy* 1989;44:220–5.
- 16 Prahl P, Jensen T. Decreased adrenocortical suppression utilizing the Nebuhaler for inhalation of steroid aerosols. *Clin Allergy* 1987;17:393–8.
- 17 Brown PH, Blundell G, Greening AP, Crompton GK. Do large volume spacer devices reduce the systemic effects of high dose inhaled corticosteroids? *Thorax* 1990;45:736–9.
- 18 Farrer M, Francis AJ, Pearce SJ. Morning serum cortisol concentrations after 2 mg inhaled beclomethasone dipropionate in normal subjects: effects of a 750 ml spacing device. *Thorax* 1990;45:740–2.
- 19 McCarthy TP. Use of nebuhaler and face-mask in young asthmatic children [letter]. *Lancet* 1990;iii:983–4.
- 20 Selroos O, Halme M. Effect of a volumatic spacer and mouth rinsing on systemic absorption of inhaled corticosteroids from a metered dose inhaled and dry powder inhaler. *Thorax* 1991;46:891–4.
- 21 Baldwin DR, Ormerod LP, Mackay AD, Stableforth DE. Changes in hospital management of acute severe asthma by thoracic and general physicians in Birmingham and Manchester during 1978 and 1985. *Thorax* 1990;45:130–4.