Treating asthma

Clinical efficacy and safety of generic inhalers is well established

EDITOR,—Mike Pearson and colleagues advance the thesis that generic inhalers are therapeutically inequivalent and that this may not be “safe or desirable for patients.”¹ In support of their case they cite one *in vitro* study,² and they claim that five studies have shown biological inequivalence, though they cite only two of these. The first, from Finland, relates to a product made and sold in Finland but not in Britain³; the differences in lung function were significant but not clinically important, and the authors concluded that “both preparations proved to be effective.” The second paper, from Australia, showed small differences under laboratory conditions, but its authors concluded that “no clinical significant difference occurs between the bronchodilator effects of salbutamol and those of salbutamol sulphate which is administered as 200 µg of salbutamol equivalent, with different propellant mixtures, dispersal agents and inhaler systems.”⁴ These papers in no way provide evidence to challenge the clinical efficacy of generic inhalers, whose use is now well established.

Pearson and colleagues then refer to oral modified release preparations of theophylline and calcium antagonists, for which it is widely acknowledged that variations in bioequivalence may be clinically important. The issues here, however, are safety and a narrow therapeutic margin. These factors are not in question with inhaled steroids and bronchodilators; drawing comparisons with the biopharmaceutics of oral forms is irrelevant and serve only to confuse the issue.

In the north of England many practices have increased their rates of generic prescribing of inhaled salbutamol and some have converted completely. There have been no clinical problems, few problems concerning patients' satisfaction (provided proper explanation of the change is given), and considerable financial savings that release NHS funds to be used in other areas.⁵ Extending the use of generic inhalers is an important element in most regional and local prescribing strategies. It achieves substantial savings at no detriment to patient care, and the letter by Pearson and colleagues (most of whom declare a relationship with companies that have a vested interest) may be a measure of the success of this strategy.

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Advice to authors

We prefer short letters that relate to a recently published article and we are unlikely to publish letters longer than 400 words and containing over five references. Letters may be shortened. Your letters should be typed with double spacing and include a word count. All authors need to sign the letter and provide one current appointment and address. We encourage you to declare any conflict of interest. Please enclose a stamped addressed envelope if you require an acknowledgment.

Prescription pricing authority aims to promote high quality prescribing

EDITOR,—Dermot Ryan and Mark Levy, in their letter about the reports sent by the Prescription Pricing Authority, make three main comments about the centre page report on asthma sent to all general practitioners in England in August 1994.²

The Prescribing Research Unit and the General Practitioners in Asthma Group, of which Ryan and Levy are members, jointly undertook the research on which the comment from the Prescribing Research Unit was based. It would not have been appropriate to cite the level of statistical detail required by Ryan and Levy, but the points being made would have been more easily understood with a little more explanation. The words “should be” in relation to all three pointers on cost were intended in the sense of “are likely to be” rather than “have to be,” and we had hoped that these pointers would be of interest to practitioners.

The figure of £80-90 was not the cost of drugs for a year for a patient with asthma but the practice's total costs for respiratory drugs divided by its number of patients diagnosed as having asthma. For study practices with low diagnostic rates this cost could be up to £500; those whose diagnostic rate was at or above the generally accepted national rate of 7% had a figure of around £80 (at 1991 prices).

Ryan and Levy dispute our claim that “recent research indicates that all metered dose salbutamol inhalers now have similar performance.” All generic salbutamol inhalers have a product licence from the Medicines Control Agency, which is issued only after equivalent bioavailability has been demonstrated. Recent research by the Mersey quality control service has shown that all licensed products currently available in Britain comply with the *British Pharmacopoeia*'s monograph for salbutamol pressurised inhalers and that there are probably no clinically significant differences between the various generic brands.³ Currently the Mersey quality control service is reviewing the performance of all beclomethasone inhalers.

We reject Ryan and Levy's allegations that “the Prescription Pricing Authority is being used to apply downward pressure on general practitioners' prescribing for patients with asthma.” Our aim is to promote high quality prescribing even if this involves extra costs. The topical commentary in the newly styled report giving prescribing analysis and cost (PACT) data is designed to encourage self

analysis and audit of individual and practice prescribing behaviour, an approach supported by the General Medical Services Committee.

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Oxygen is the first drug to use in acute asthma

EDITOR,—Simon A Evans and colleagues' survey of general practitioners' equipment for managing acute severe asthma highlights a common omission in management.¹ The British Thoracic Society's guidelines referred to in the paper suggest that the first drug to be used in acute severe asthma is oxygen.^{2,3} Unfortunately, the authors did not ask whether the general practitioners surveyed carried oxygen.

Hypoxia is universal in acute severe asthma and may be transiently exacerbated by bronchodilator treatment if compressed air rather than compressed oxygen is used to drive the nebuliser. Some studies suggest that as many as three quarters of deaths from asthma take place before the patient reaches hospital and that progression in these cases is rapid.⁴

Refillable portable oxygen cylinders are available and would be useful in many emergencies, including acute severe asthma. A question about oxygen would have made the survey complete and might have encouraged general practitioners to consider carrying a potentially lifesaving drug.

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β agonists are widely used

EDITOR,—In addressing the controversy over the use of β agonists in asthma neither A E Tattersfield nor R W Fuller has really fuelled the debate.¹ Their arguments revolve around whether β agonists cause deaths from asthma and whether they cause increased bronchial hyperreactivity if used regularly. The first question is now largely historical and well aired. If we accept the mounting evidence that β agonists can cause worsening asthma the real issue is then the extent of their use (or misuse). To answer this we need to look at what happens in general practice, where 97% of asthmatic patients are treated² and where patients who are prescribed β agonists either alone or in combination with inhaled prophylactic agents can be identified.

In addressing the problems of potential barriers to prophylaxis against asthma in primary care my colleagues and I have identified six groups of patients in our practice. They range from those taking β agonists alone through those taking both drugs to relieve asthma and drugs to prevent it in varying ratios (unpublished data). In the six partner computerised practice of 10 682 patients (with high awareness of asthma) and an asthma clinic run by a nurse we have 980 patients (prevalence of asthma 9.2%) who during a 12 month study in 1993-4 were prescribed (and requested further prescriptions of) inhaled β agonists or prophylactic drugs. Of these patients, 469 were taking β agonists alone, of whom 103 had used six or more canisters of metered dose inhaler a year. This equates to four doses a day if used properly but to roughly three doses a day if test firing, non-compliance, and wastage are taken into account. In other words, 103 of 980 asthmatic patients were taking three or more puffs of β agonist every day without inhaled prophylaxis and 147 were taking a β agonist twice or more. Many of these patients had previously been prescribed prophylactic treatment but had been non-compliant. Our asthma clinic is now targeting this problem.

Further evidence of the widespread use of β agonists is shown by the fact that, for all eight family health services authorities areas in Wales, prescribing analysis and cost (PACT) data show that Ventolin (salbutamol, Allen and Hanburys) is among the top three drugs prescribed, sharing the top spots with such common drugs as paracetamol and co-proxamol.³ Non-specific cough rather than asthma may be being treated extensively with β agonists.⁴ If other data support the fact that 10-15% of the asthmatic population is being prescribed regular β agonists alone then the extent

of the problem is potentially considerable and can hardly be described as much ado about nothing.

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Scoring system developed for drug related morbidity

EDITOR,—Nick Steen and colleagues describe the development of a symptom based outcome measure for asthma.¹ The Midlands Thoracic Society's research group is developing a simple scoring system for morbidity related to drugs used for asthma. This will be used in asthma clinics to monitor individual patients and audit the clinic. The morbidity measures include scales for the highest peak expiratory flow in the clinic as a percentage of the predicted flow (10 items); the variability in peak expiratory flow in the week before the clinic visit (five items); the use of a bronchodilator—in addition to the doses prescribed regularly—in the 24 hours before the clinic visit (four items); nocturnal symptoms in the week before the clinic visit (seven items); symptoms affecting lifestyle since the last clinic visit (six items); and the extra drugs required to maintain treatment since the last clinic visit or in the two months before the first visit (five items). Drug use is monitored by scales based on the stepwise approach given in the British Thoracic Society's guidelines.²

The questionnaires answered by patients have been shown to be reproducible (Cohen's κ=0.89; n=532).³ The validity and responsiveness to change have been tested in an urban general practice in Stoke on Trent. Fifty patients with a peak flow of <75% of the predicted value attended an asthma clinic three times three months apart. The expected improvement in control of asthma was mirrored by the scores for lifestyle, nocturnal symptoms, use of bronchodilators as required, use of additional drugs, and highest peak flow (table). Scores of variability in peak flow showed an increasing trend. Morbidity scores correlated with those for drug use, with considerably more preventive (anti-inflammatory) treatment being prescribed for each patient at the end of the study than at the beginning.

The system has been integrated into the routine of one general practice and two hospital asthma clinics in the west midlands in paper format and is being integrated into the computer system in one hospital during its evaluation phase.

The morbidity scales reflect the fact that many variables can be used to assess control of asthma,

including symptoms (use of extra drugs) and physiological measurements. Steen and colleagues' "bother" scale supplies only one aspect. Any morbidity scales will probably have to contain absolute measurements since the inappropriately high morbidity that many asthmatic patients experience indicates an adaptive response to symptoms affecting daily living.^{4,5} This may lead patients to underestimate the bother that their asthma causes.

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Simple aspiration for spontaneous pneumothorax

Authors reinvent the wheel

EDITOR,—Simple aspiration of air from a pneumothorax, as recommended by John Harvey and Robert J Prescott, may be likened to the reinvention of the wheel.¹ When I was first appointed a consultant 14 years ago I was impressed by my registrar, O G Raja, who successfully used simple aspiration to treat pneumothorax. It is such an obvious thing to do that I wondered why I and, seemingly, others had not thought of doing it. When Raja published this work with a colleague² it prompted a flurry of similar publications, but the original work is rarely referred to.

Excited by the method, I presented a case managed in this way at a local meeting of chest physicians, expecting a similar response to this "new" technique. I was somewhat deflated by one of the older chest physicians, J Spencer Jones, who pointed out that he had been using the method for several decades. Having lived through the era of artificial pneumothoraces, he—and, I suspect, many others—found it natural to pump air out of the pleural cavity instead of into it. Spencer Jones subsequently published his extensive experience with the technique.³

Pleural aspiration for pneumothoraces has now been standard practice at the William Harvey Hospital for 14 years. I can attest to its effectiveness but do not recommend it for large and tension pneumothoraces, which are often still open. Use of the method renders insertion of an intercostal tube unnecessary in many cases, thereby reducing

Lung function variables and scores at each clinic visit (a reduction in scores denotes an improvement)

	Visit			Difference between visit 1 and visit 3	95% confidence interval of difference between visit 1 and visit 3
	1	2	3		
Highest peak expiratory flow (l/min)	342.5	387	429	86.5	72.3 to 101
Variability in peak expiratory flow (%)	8.40	7.60	8.80	0.39	-1.08 to 1.86
Scoring system:					
Score for highest peak expiratory flow	2.48	1.60	0.94	-1.54	-1.22 to -1.86
Score for variability in peak expiratory flow	0.30	0.22	0.48	0.18	-0.40 to 0.04
Use of bronchodilator	1.56	1.06	0.58	-0.98	-0.70 to -1.26
Nocturnal symptoms	2.08	1.28	0.58	-1.50	-1.19 to -1.81
Lifestyle	1.76	1.04	0.56	-1.20	-0.83 to -1.57
Additional drugs	1.78	1.04	0.30	-1.48	-1.10 to -1.86
Total score	9.96	6.24	3.44	-6.52	-5.37 to -7.67