Are general practitioners equipped to manage acute severe asthma?

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The British Thoracic Society issued guidelines on the management of asthma in response to "unacceptably high" morbidity and mortality associated with asthma.^{1,2} Information on treatment of acute asthma in the community is sparse. A recent study provided information from selected general practitioners, 47% of whom were members of the General Practitioners in Asthma Group; only 6% of non-members responded.³ Nebulised bronchodilators and systemic steroids were found to be underused. To gain a more representative picture we have used equipment and drugs carried by general practitioners as a surrogate measure of assessment and treatment of asthma in the community.

Methods and results

In 1992-3, after agreement with local medical committees, we sent a questionnaire about drugs and equipment taken on home visits to all general practitioners on the medical lists of two urban, non-adjacent family health services authorities (areas A and B) in the North West Regional Health Authority. Anonymity was assured. The two areas were compared statistically with the χ^2 test.

The overall response rate was 68% (178/262) (67% in area A, 69% in area B). The table shows the equipment and drugs that the general practitioners carried. Peak expiratory flow meters were carried by 54% of the respondents; 34% (61/178) carried neither a nebuliser nor a large volume spacer (for use with metered dose inhalers). The respondents who did not carry a nebuliser but said that one was available at their surgery were analysed as carrying a nebuliser. Overall, 63% (74/117) of the respondents who carried a nebuliser or a spacing device carried intravenous bronchodilators, compared with 62% (38/61) of those who carried neither. Although 78% (138/178) of the respondents carried adrenaline, 51% (91/178) would

never consider using it for acute asthma. General practitioners in area B were more likely to carry nebulisers, nebuliser solutions, and intravenous steroids than those in area A (table). If results are analysed on the assumption that non-respondents do not carry a peak expiratory flow meter, nebuliser, or spacing device then of all 262 general practitioners who were sent a questionnaire, 37% (96) carried a peak expiratory flow meter and 45% (117) carried a nebuliser or spacing device.

Comment

Although the British Thoracic Society's guidelines suggest that peak expiratory flow is a useful criterion for assessing and treating asthma, only 54% of respondents carried a peak expiratory flow meter. While the ability to talk in sentences, pulse rate, and respiratory rate are useful indicators of the severity of asthma, potential pitfalls exist—anxiety may influence pulse and respiratory rates, and life threatening asthma may result in bradycardia and a falling respiratory rate. The severity of symptoms is also unreliable as many people with asthma underestimate changes in lung function,⁴ which makes an objective assessment necessary.

Not all people with asthma have a peak expiratory flow meter so it would seem wise for general practitioners to carry one. Nebulisers and large volume spacing devices are equally effective in treating acute severe asthma,⁵ and are essential for administering high dose inhaled bronchodilators. It is worrying that a third of respondents carried neither device, of whom two thirds carried parenteral bronchodilators. This may reflect excessive reliance on these potentially hazardous agents, which should be reserved for life threatening attacks. In contrast, antimuscarinic agents, a safe and useful adjunct to β agonists, seem to be underused. The high proportion (93%) of respondents carrying steroids, however, is encouraging. The individual and geographical variations in equipment and drugs carried for treating asthma may relate to postgraduate education, but we had not collected data on this.

It seems therefore that assessment and treatment of acute asthma by general practitioners are often suboptimal, which suggests that the training and continuing education of general practitioners give insufficient emphasis to the drugs and equipment necessary for home visits. The wider use of measurements of expiratory flow and high dose bronchodilators inhaled through nebulisers or metered dose inhalers with large volume spacers would improve the quality of care offered to patients with acute severe asthma.

Equipment and drugs for treating asthma carried by 178 general practitioners in two urban family health services authorities. Values are numbers (percentages) of general practitioners

Items carried	Total (n=178)	Area A (n=68)	Area B (n=110)
Equipment:			
Peak expiratory flow meter	96 (54)	36 (53)	60 (55)
Nebuliser	79 (44)	15 (22)*	64 (58)*
Spacing device	76 (43)	24 (35)	52 (47)
Nebuliser or spacing device	117 (66)	32 (47)*	85 (77)*
Airway	112 (63)	39 (57)	73 (66)
Drugs:			
β agonists†:			
Through metered dose inhaler	150 (84)	55 (81)	95 (86)
Nebulised	74 (42)	13 (19)*	61 (55)*
Intravenous	90 (51)	38 (56)	52 (47)
Antimuscarinic agents†:			
Through metered dose inhaler	29 (16)	16 (24)*	13 (12)*
Nebulised	24 (13)	3 (4)*	21 (19)*
Theophylline†:			
Oral	38 (21)	19 (28)	19 (17)
Intravenous	62 (35)	26 (38)	36 (33)
Steroids:			
Oral	138 (78)	49 (72)	89 (81)
Intravenous	138 (78)	44 (65)*	94 (85)*
Oral or intravenous	165 (93)	60 (88)*	105 (95)*
Adrenaline	138 (78)	49 (72)	89 (81)

*P < 0.05.

†Bronchodilators.

1 Guidelines for the management of asthma in adults: II—acute severe asthma. *BMJ* 1990;30:797-800.

2 Guidelines on the management of asthma. *BMJ* 1993;306:776-82.

3 Neville RG, Clark RC, Hoskins G, Smith B for General Practitioners in Asthma Group. National asthma attack audit 1991-2. *BMJ* 1993;306:559-62.

4 Kendrick AH, Higgs CMB, Whitfield MJ, Laszlo G. Accuracy of perception of severity of asthma: patients treated in general practice. *BMJ* 1993;307:422-4.

5 Morgan MDL, Singh BV, Frame MH, Williams SJ. Terbutaline aerosol given through pear spacer in acute severe asthma. *BMJ* 1982;285:849-50.

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