

The use of spirometers in general practice

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ABSTRACT

Objective: To describe the current use of spirometers in primary care in the UK.

Design and Subjects: A postal questionnaire was sent to all 548 members of the GPs in Asthma Group (GPIAG), who have a special interest in asthma, and to 2000 randomly selected GPs throughout the UK.

Results: Responses were received from 349 (64%) of the GPIAG members and 582 (29%) of the random group. Spirometers were present in 175 practices (50%) of GPIAG members and 186 (32%) of the random group. A hand-held digital spirometer was used by 61% of all respondents. Only 25% of GPs without a spirometer wished to buy one, while 60% would choose an open access hospital service instead.

Conclusion: Spirometry is under-used in general practice and many GPs would prefer a hospital open access service rather than buy a spirometer themselves. This implies an increased need for training and expansion of hospital spirometry services in the future.

company, from regions around the UK (the random group). Analysable responses were received from 349 (64%) of GPIAG members and 582 (29%) of the random group (see Table 1). An overwhelming majority (93%) of both groups welcomed the guidelines on COPD. Spirometers were available in 175 (50%) of the GPIAG group practices and 186 (32%) of the random group.

A small hand-held electronic digital display spirometer was used by 221 (61%) of respondents with a spirometer, this being one of the cheapest available. Relatively few, 142 (25%) of the GPs without a spirometer, showed any inclination to buy one. Open access spirometry service was only available to 103 (11%) of practices at their local hospital. Yet 335 (60%) of respondents who did not already have a spirometer, if given the choice of buying one or using an open access hospital service, would prefer to send their patients to an open access service.

In primary care, 434 (86%) of the 503 practices who had or were prepared to buy a spirometer, said that the practice nurse would perform the measurements. These nurses require appropriate training, more structured information about the management of COPD and a shift from running pure asthma clinics to airflow obstruction clinics. In total, 453 (90%) of the 503 GPs were willing to send practice nurses on a suitable course.

The survey also investigated the current practice of performing reversibility tests for asthma and COPD (see Table 2). Bronchodilator reversibility tests are more commonly undertaken for patients with asthma than for those with COPD. A metered dose inhaler with a large volume spacer is the preferred route of administering a β_2 -agonist bronchodilator – a seemingly appropriate choice. The majority, 653 (85%) of the 764 respondents, used a β_2 -agonist (400 mcg) for the purpose of reversibility testing.

Reversibility testing with corticosteroids was far less frequently performed by all doctors surveyed, most frequently for suspected COPD. Three hundred and eight of the 931 (33%) respondents routinely carried out oral steroid reversibility testing (see Table 2) of whom 273 (87%) used doses of at least 30 mg prednisolone per day. One hundred and five (67%) of the random group gave a steroid challenge for less than 14 days compared with 57 (38%) of the GPIAG group.

DISCUSSION

This study demonstrates a need for COPD guidelines. However, the data suggest major cost and staff implications for secondary care once BTS recommendations for more widespread use of spirometry are put in place. Currently, spirometry is infrequently used in primary care and it is likely that considerable training would be required for doctors and nurses before this can be increased. In fact, most GPs surveyed would delegate spirometry measurement to their practice nurses, who will clearly need training in the technique and interpretation of spirometry results. However, given a choice, this survey suggests that the majority of GPs (60%) would opt for a

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Asthma in Gen Pract 1997;
5(1): 8-9.

INTRODUCTION

The new British Thoracic Society (BTS) guidelines on chronic obstructive pulmonary disease (COPD)¹ and the recently published European guidelines² both suggest that the most appropriate way of assessing the severity of COPD and the annual change in lung function – a marker of long-term survival – is by measurement of the forced expiratory volume in one second (FEV₁) and forced vital capacity (FVC).^{3,4} COPD has failed to gain the high profile achieved by asthma, perhaps because of a perception in primary care that little can be done for this condition, apart from stopping smoking. However, COPD results in far more days lost from work and far more deaths than asthma.⁵ This survey examines the current usage of spirometry in primary care and examines the implications of cost, workload and training in implementing the BTS COPD guidelines.

METHOD AND RESULTS

A short postal questionnaire was sent to all 548 members of the GPs in Asthma Group (GPIAG), a group of GPs with a special interest in asthma, and 2000 GPs randomly selected, by an independent mailing

Table 1: Spirometry questionnaire results

	GPIAG Members	Random Group	Total
Mailed	548	2000	2548
Responded	349 (64%)	582 (29%)	931 (37%)
Would welcome guidelines	325 (93%)	541 (93%)	866 (93%)
Spirometer owned by practice	175 (50%)	186 (32%)	361 (39%)
Local open access spirometry service available	34 (10%)	69 (12%)	103 (11%)
Do not own a spirometer	171 (49%)	392 (67%)	563 (60%)
Of which:-			
Prepared to buy	41 (24%)	101 (26%)	142 (25%)
Prefer local service	103 (60%)	232 (59%)	335 (60%)
Practices who would own or would buy a spirometer	216 (62%)	287 (49%)	503 (54%)
Of which:-			
Would use practice nurse to perform test	177 (82%)	257 (90%)	434 (86%)
Would want training for practice nurse	186 (86%)	267 (93%)	453 (90%)

local open access spirometry service rather than buy a spirometer. Only 11% of practices surveyed currently have this service available. Thus, there will need to be a major expansion in open access services, which will have corresponding cost implications for secondary care equipment and staffing levels.

Our results indicate that steroid challenge tests are performed infrequently and for an inadequate time period. It is known that patients who respond to inhaled bronchodilators do not necessarily respond to inhaled steroids, and therefore many patients are prescribed these drugs inappropriately.⁶ Patients with moderate to severe COPD warrant a formal trial of corticosteroids, for example prednisolone 30 mg daily for at least two weeks. Patients who respond with an increased FEV₁ of more than 200 ml will benefit from taking inhaled steroids long-term.

We accept the inherent problem of enthusiast bias in the case of postal questionnaires; individuals with a personal interest in respiratory disease are more likely to respond. This might explain the unexpectedly high figure for spirometer use found in this random sample of GPs. However, this survey probably denotes current best practice in spirometry usage within primary care.

Spirometry is the most appropriate investigation in COPD. It may also allow more effective screening of asymptomatic smokers with the major incentive of preventing disease. Over a period of time reduced smoking could result in savings in hospital care and time off work, but may also help to reduce morbidity from cardiovascular disease.

CONCLUSION

Spirometry is under-used in general practice and many GPs would prefer to use a hospital open access service rather than buy a spirometer. This implies an increased

need for training and expansion of hospital spirometry services in the future.

Conflict of interest: None.

Funding: This study was supported by an educational grant from Glaxo Wellcome.■

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Table 2: Reversibility testing

	GPIAG Members n = 349	Random Group n = 582	Total n = 931
Routine use of bronchodilator reversibility for:-	280 (80%)	484 (83%)	764 (82%)
Asthma	270 (96%)	471 (97%)	741 (97%)
COPD	220 (79%)	376 (78%)	596 (78%)
Standard dose of bronchodilator	204 (73%)	449 (93%)	653 (85%)
Routine use of oral steroid reversibility for:-	152 (44%)	156 (27%)	308 (33%)
Asthma	87 (57%)	109 (70%)	196 (64%)
COPD	133 (88%)	123 (79%)	256 (83%)
Dose of prednisolone above 30 mg/day	135 (89%)	138 (88%)	273 (89%)
Test lasts < 14 days	57 (38%)	105 (67%)	162 (53%)

Is childhood pneumonia an unrecognised presentation of asthma?

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ABSTRACT

Background: Personal experience suggests that some children presenting with pneumonia may have undiagnosed asthma.

Objective: To determine the frequency with which asthma is diagnosed following pneumonia.

Method: Retrospective review of the hospital records of 99 children, aged under 17 years, admitted to hospital with pneumonia.

Results: Twenty eight per cent of the children were asthmatic; one third of these (i.e. nine per cent of patients) were newly diagnosed in the six weeks following discharge. Asthmatics were older than the non-asthmatics presenting with pneumonia, and were more likely to have a family history of asthma or personal history of atopy.

Conclusion: Routine follow-up of children admitted with pneumonia can identify new cases of asthma and a high index of suspicion is recommended.

INTRODUCTION

Asthma is a common childhood disorder. Episodic wheeze and cough at night have been documented as markers of asthma.¹ However, 25% of asthmatics do not wheeze prior to diagnosis² and this may lead to delays in diagnosis.³ Asthma has been under-diagnosed in children⁴ and recognition of markers other than wheeze⁵ (see Table 1), may help to remedy this. Our clinical experience has shown that young asthmatic patients are sometimes diagnosed following an episode of pneumonia and we considered that pneumonia itself may be a marker for undiagnosed asthma. Little in the available literature directly addresses this hypothesis, so the following pilot study was undertaken to establish how often asthma is diagnosed shortly after an episode of pneumonia.

METHOD

We retrospectively reviewed the hospital discharge records of all patients aged under 17 years, who had been admitted to the Royal Devon & Exeter District Hospital (serving a population of 250000) with pneumonia between January 1989 and July 1991. Records were examined retrospectively for: age; sex;

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Asthma in Gen Pract 1997;
5(1): 9-11.