Occupational asthma: a community based study

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The incidence and prevalence of occupational asthma has been extensively studied in industry settings and specialist clinics. However, it has been much less studied in the community. This study looked at the general practice notes of asthmatics in an attempt to assess the overall load of occupational asthma in the community. Eighty-six per cent of the patients with adult onset asthma in the practice population studied had at least one occupation recorded in their notes. Nearly a third of these (32%) were in jobs known to be significant causes of occupational asthma, yet a potential link between their occupation and symptoms had only been recorded in 18% of patients in these jobs. Overall 4% of the patients with adult onset asthma had been given a diagnosis of occupational asthma although in nearly half these cases the diagnosis had been made by a general practitioner and not a specialist.

Key words: Community; general practice; occupational asthma.

INTRODUCTION

Occupational asthma has been extensively studied in industrial settings and there are a number of surveillance schemes to detect cases of occupational asthma that present to specialists such as the SWORD and SHIELD schemes. However, less is known about the prevalence and aetiology of occupational asthma in the community at large.

Early estimates suggested that the proportion of asthma attributable to occupational causes was around 15%; however, these have been regarded as over-estimates, depending for example on subjective assessments of aetiology, self-reported symptoms and analysis of a Social Security disability survey. More recent estimates place the prevalence of occupational asthma amongst asthmatics at 2–6%.

The aim of this study was to examine the prevalence, aetiology and mode of diagnosis of occupational asthma in a general practice setting, by assessing the records of all the asthma patients in the practice for evidence of a diagnosis of occupational asthma or a potential occupational aetiology for their asthma.

PATIENTS AND METHODS

The practice chosen for the study was a four-partner practice based in a large village in South Oxfordshire, where the authors carried out a general practice attachment. The majority of the patients worked in the practice area or neighbouring Oxford, the major employers being the car industry, the hospital, the universities and the agricultural industry.

The target population consisted of all patients between the ages of 16 and 65 years with a diagnosis of asthma on the computerized records of the practice. These patients were identified, their notes retrieved and individually assessed by the authors. The following information was recorded for each set of notes: the date of birth, when the diagnosis of asthma was first made; any occupations recorded in the notes and where they were recorded and if the general practitioner had made any comment concerning the presence or absence of any link between the asthmatic symptoms and occupation. Finally, the notes were examined to see if any formal diagnosis of occupational asthma had been made and by whom.

RESULTS

The total practice population was 8,900, with 6,077 patients between 16 and 65 years of age. Three hundred and forty-six (6%) of these patients had a diagnosis of asthma recorded. Out of these, 344 sets of notes were recovered (99%).

One hundred and eighty-two (53%) of the asthmatic patients were classed as having adult onset asthma (diagnosed from their sixteenth birthday onwards). These formed the study population. The mean age of the
patients was 45.4 years (± 12.0 years), while the mean age at which their asthma was first diagnosed was 33.9 years (± 12.8 years).

One hundred and fifty-seven out of the 182 adult onset asthmatics (86%) had at least one occupation recorded in their notes. Only one (0.5%) had his occupation recorded at the time of diagnosis; 13 (7%) had their occupation referred to in communications contained within the notes and 143 (79%) had their occupation recorded on the front card of the notes. In 25 (14%) there was no record of occupation in the notes.

Of the 157 patients with adult onset asthma, 50 (32%) were or had been in occupations involving potential exposure to known causes of occupational asthma as defined in annexes 1 and 2 of the HSE publication Preventing Asthma at Work. The broad occupational groups of these patients are listed in Table 1. Twenty (13%) were in occupations involving exposure to agents recognized as the most common causes of occupational asthma: isocyanates (eight), flour and hay (five), soldering flux (one), wood dusts (two) and glues and resins (four). In a significant proportion of the remaining cases for whom an occupation was recorded (32 out of 157; 20%) the details were insufficient to assess whether their occupation was putting them at increased risk of occupational asthma.

In nine cases out of the 182 patients with adult onset asthma (5%) a possible link between occupation and the symptoms was recorded in the notes. In two of these cases a diagnosis of occupational asthma was excluded, in one case by the general practitioner and in the second case by a chest physician.

Overall a firm diagnosis of occupational asthma was made in seven out of 182 adult onset asthmatics (4%). This diagnosis was made by the general practitioner alone in three cases, by a chest physician in three cases and in one case by both a chest physician and an occupational physician (Table 2).

DISCUSSION

In this South Oxfordshire population a diagnosis of occupational asthma had been made in 4% of the adult onset asthmatics. This figure is within the range of 2–6% estimated by Meredith and Nordman.5

These results also suggest that up to a third of the patients receiving a diagnosis of asthma as adults are in occupations that have a significant chance of being the cause of, or contributing to, their asthma. Yet in only a small proportion of these cases (18%, nine out of 50) was there any record that a diagnosis of occupational asthma had been sought or actively excluded, suggesting that there may be a significant number of patients in this group in whom the diagnosis of occupational asthma is being missed or not even being considered. In addition there was a considerable number of patients with insufficient or no occupational history in their notes, who may or may not be at risk of occupational asthma. Perhaps more hidden cases of occupational asthma could be detected by better education of general practitioners about occupational asthma and by making specialist services more readily available. Thus it is clear that our estimate of the proportion of adult onset asthma attributable to an occupational aetiology is likely to be an underestimate. To detect the true figure would require a prospective study formally assessing all new presentations of asthma for an occupational aetiology.

A limitation of the study is that it was based in a single practice population in a particular part of the country with its own individual pattern of employment. The prevalence of occupational asthma is likely to be heavily dependent on the predominant types of work in a particular area. It may be inappropriate to extrapolate these results to other populations in areas where different occupations may predominate. On the other hand the very diversity of employment in our study area makes it difficult for the general practitioner to remember every possible association.

Finally, in this study the diagnosis in almost half the cases of suspected occupational asthma was made by the general practitioner alone. In only four out seven cases was the diagnosis made or confirmed by a chest physician or occupational physician. This has two important implications. Firstly, those patients who are not seen by a specialist are unlikely to be included in surveillance schemes such as SWORD or SHIELD. Indeed the figures from this study suggest that these schemes underestimate the incidence of patients being diagnosed with occupational asthma by as much as half. Secondly, given the significant social, legal and medical consequences of making a diagnosis of occupational asthma, it is important to question whether general practitioners should...
be making this diagnosis on their own or whether they should be encouraged to refer patients to chest or occupational physicians for a definitive diagnosis and advice on future employment.

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REFERENCES


