

Opinion

The management of occupational lung disorders in Primary Care

Introduction

The primary aim of this opinion sheet is to provide evidence-based advice concerning early identification of patients with occupational airways disease, and it is predominantly based on recent British Occupational Health Research Foundation (BOHRF) guidance for occupational asthma.¹ Other commonly reported occupational lung disorders will also be dealt with briefly.

Work-related lung disorders pose a significant burden to the UK economy. Failure to identify “at risk” workers early (not easy since as much as 20% of the UK population wheeze, for example) will expose them further, and this is associated with a worse outcome. Even considering just those with occupational asthma caused by work, the Health and Safety Executive (HSE) estimate that between 1,500 and 3,000 new cases develop each year.

Occupational asthma

Identifying in primary care those at risk of occupational asthma

Defined simply, and for this article, occupational asthma will be considered as asthma caused by or made worse by exposures to asthmagens at work.

All adults of working age presenting with symptoms, especially if for the first time, should be asked about their work and any workplace exposures in some detail. Work relatedness of respiratory symptoms is key to making a diagnosis of occupational asthma, and wheeze, chest tightness and nasal irritation are the best symptoms to ask about. The best questions to ask to confirm work relatedness are shown in Box 1. When asking about work, bear in mind the common occupations reported as causing occupational asthma. These are listed in Box 2.

Current data from the UK suggest that there is a significant delay between developing work related symptoms and seeing a physician with an interest in this condition.² Better prognosis is associated with earlier removal from exposure to offending asthmagens; referral and assessment

Box 1: Key questions to ask all workers with symptoms of airways disease

1. “Is your wheezing the same, better or worse on rest days / holidays?”
(Positive response when better is reported)
2. “Is your chest tightness the same, better or worse on rest days / holidays?”
(Positive response when better is reported)
3. “Is your nasal itching the same better or worse on rest days /holidays?”
(Positive response when better is reported)
4. “Is your wheeze (chest tightness/nasal itching) worse at any particular time of the day or night?” **(Positive response when work time is nominated)**

ANY positive response is “work relatedness” of symptoms, and requires further assessment, or an opinion that further assessment is not appropriate

Box 2: Common occupations associated with occupational asthma

The workers most commonly reported to surveillance schemes of occupational asthma include:

- Paint sprayers
- Bakers & pastry makers
- Chemical workers
- Welders
- Metal working fluid exposed workers / grinders
- Laboratory workers (working with animals/insects)
- Nurses
- Animal handlers
- Food processors
- Wood and timber workers

Box 3: Serial PEF measures in suspected Occupational Asthma Key Points; based on BOHRF guidance

1. Acceptable peak expiratory flow (PEF) series can be obtained in around two-thirds of those in whom a diagnosis of occupational asthma is being considered
2. The diagnostic performance of serial peak flow measurements falls when fewer than four readings a day are made
3. FOUR high quality readings of PEF a day are needed, for at least 3 continuous weeks in the first instance
4. The sensitivity and specificity of serial peak flow measurements are high in the diagnosis of occupational asthma
5. Computed analysis of peak flow records has good diagnostic performance; use accepted software to analyse these (e.g. OASYS 2). Most specialist centres will have access to such software – the raw data can be sent with a referral for further assessment

delays must therefore be minimised. Primary care is ideally placed to identify such workers early, potentially by using the occupational history of asthma patients to identify those at higher risk in asthma clinics.

Consequently, patients suspected of having occupational asthma should be referred to a respiratory physician with an interest in this condition.³ During the period between referral and consultation, serial measures of peak expiratory flow (PEF), following BOHRF guidance, should be started (see Box 3). This is to maximise the chance that serial PEF

measurements are taken whilst at work and will help to confirm the diagnosis. The longer workers remain exposed with symptoms, the more likely it is for them to be removed from the workplace, making interpretation of investigations and diagnosis much more difficult. A normal CXR is also useful when assessing a wheezy worker, and may be requested prior to specialist referral.

The pharmacological management of occupational asthma is similar to asthma due to non-occupational causes, and should be based on the recently-upgraded BTS/SIGN asthma guidance and the

UK based Standard of Care for Occupational Asthma.

Occupational chronic obstructive pulmonary disease (COPD)

Whilst COPD for many is a smoking-related condition, recent evidence supports the historical notion that inhaled occupational exposures may also contribute to its development. Whilst the data for specific exposures is stronger in certain areas (coal dust, cadmium fume), general exposure to vapours, dusts, gases and fumes may also have a causative effect. There are no easy clinical rules to follow currently when deciding about the predominant cause in an individual patient.

However, all workers exposed significantly to high dust levels should be given simple advice about trying to reduce their dust exposure at work. Primary care physicians, especially if they have good knowledge of local workplaces, should not underestimate their ability to influence health and safety issues within them.

Occupational alveolitis

Perhaps the best example of extrinsic allergic alveolitis (EAA) is Farmers lung, due to mouldy hay spores. Here in the UK we have recently seen a (largely unexplained) increase in cases of EAA attributed to metal working fluids. These are used widely in metal working and grinding processes, providing lubrication and cooling. It is likely that these fluids become contaminated with various microbiological agents, and develop the ability to cause EAA. These agents may also cause occupational asthma.

The typical history of EAA is that of episodic or progressive shortness of breath and flu-like symptoms. Chronic weight loss may be a feature. These symptoms are normally work related, although workers may not initially associate their symptoms with work. Occasionally, non-respiratory features may predominate.

Referral to a specialist respiratory department is essential. Early chest x-ray (CXR) is often normal, and high resolution CT scanning may be required to identify early or established changes of alveolitis.

Other occupational lung disorders

Other common occupational lung disorders are those seen as a legacy to historic asbestos exposure including mesothelioma. Less commonly, inhalation accidents, infections, lung cancer and pneumoconioses are reported.

Asbestos-exposed workers

Current asbestos exposure in the workplace is tightly controlled, and is very unlikely to cause significant respiratory problems, although previous asbestos exposure is associated with the risk of developing mesothelioma, benign pleural disease and asbestosis. Each of these may develop after significant delay between last exposure; mesothelioma classically presents up to 40 years following asbestos exposure.

Chest pain and shortness of breath in a patient who has worked with asbestos should never be ignored. Access to modern imaging modalities and pulmonary physiology is important both in terms of making the correct diagnosis and giving the appropriate compensation advice. Referral to a specialist centre for occupational lung disease, or to the local lung MDT is essential.

Medical certification and reporting of cases

Medical certification for absence from work is no different for those patients with and without illness possibly caused or aggravated by the work environment. However, if a work connection is made in the written Fit Note, there is then a legal requirement for the employer to act, including reporting the case to HSE (see below). Consultation with patients suspected of (and indeed confirmed as having) occupational lung disease therefore affords an opportunity to communicate with the relevant workplace. The longer patients remain off work with a work-related illness, the less likely it is that they will return to work.

As part of a national reporting scheme, cases of occupational lung disease in England and Wales may be reported either voluntarily by the occupational physician responsible for a worksite (OPRA scheme), or by the patient's secondary care-based respiratory physician (SWORD scheme⁴). The scheme is now extending to primary care in certain areas. More information is available on the relevant website.

Dealing with employers and changing the work environment

Employers have an obligation under health and safety law to report certain cases of work-related ill health such as occupational lung disorders to the HSE provided there is a written diagnosis from a medical practitioner.⁵ Primary care physicians can also report such cases to the HSE though it is

advisable to gain patient consent before divulging such information to a third party. Written diagnosis of this kind places a duty on the employer to take remedial action and, if reported, an HSE inspection could follow.

Compensation issues

Compensation for occupational lung diseases is a complex area, and patients with a potential claim need sensible, realistic advice. The law changes relatively often in relation to these issues, although good advice can be obtained from the Department for Work and Pensions website (<http://www.dwp.gov.uk/>), from previous Trades Unions, from personal injury lawyers with a specific interest in respiratory problems, and from respiratory physicians with an interest in this area.

Further reading and education

BMJ e-learning currently offer a web-based occupational asthma e-learning package specifically designed for primary care, which is based around recent BOHRF guidance and the recent Standard of Care. This can be found at; <http://learning.bmj.com/learning/search-result.html?moduleId=6051298> (last accessed 20.01.11).

Useful sources of advice

1. Health and Safety Executive (HSE) Homepage; <http://www.hse.gov.uk/> HSE infoline; 0845 345 0055
2. British Occupational Health Research Foundation <http://www.bohrf.org.uk/>
3. British Thoracic Society web site for asthma guidance http://www.brit-thoracic.org.uk/Guidelinessince%201997_asthma.html

References

1. Nicholson PJ, Cullinan P, Newman Taylor AJ, *et al.* Evidence based guidelines for the prevention, identification, and management of occupational asthma. *Occup Environ Med* 2005;**62**:290-9.
2. Fishwick D, Bradshaw L, Davies J, *et al.* Are we failing workers with symptoms suggestive of occupational asthma? *Prim Care Resp J* 2007;**16**(5):304-10. doi:10.3132/pcrj.2007.00064.
3. Fishwick D, Barber CM, Bradshaw LM, *et al.* British Thoracic Society Standards of Care Subcommittee Guidelines on Occupational Asthma. Standards of care for occupational asthma. *Thorax* 2008;**63**(3):240-50 doi:10.1136/thx.2007.083444
4. THOR website; <http://www.medicine.manchester.ac.uk/coeh/thor/> (last accessed 22.10.07).
5. RIDDOR website, HSE. <http://www.hse.gov.uk/riddor/> (last accessed 26.10.07)