OCCUPATIONALMEDICINE

Occupational asthma

NEW SERIES

Our new series on occupational medicine kicks off with advice from respiratory specialists **Professor Paul Cullinan** and **Dr Joanna Szram**

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Asthma is 'occupational' when it has been caused directly by an agent encountered at work – usually an airborne allergen. Repeated inhalation causes a respiratory hypersensitivity in some people, which is similar to ordinary allergic asthma in response to house dust mites or cats.

Occupational asthma needs to be distinguished from work-exacerbated asthma, which is pre-existing or coincidental adult-onset asthma that is provoked, rather than caused, by a workplace agent. This is commonly an irritant dust or fume, cold air or exertion, or even simply an early morning shift pattern. This distinction is important because the implications for patients and employers are very different.[1]

Prevalence

Research suggests that 15% of all new or relapsed asthma in adulthood is the consequence of an exposure at work, though only a proportion will be true occupational asthma. The disease is very common in some workforces – such as bakers or those who work with animals.

Having said this, few clinicians will recognise a figure of 15% among their adult patients with asthma. This may be because many people with occupational asthma – particularly young men – do not consult their doctor, perhaps because they don't connect symptoms and work, because they feel it's just part of the job or because they are anxious about the implications.

It may also be because some clinicians fail to ask the right questions – it is difficult to remember all the possible associations.[2]

Risky jobs

Around 400 workplace agents have been reported to cause occupational asthma. Fortunately, most of these are rarely encountered and about three-quarters of all the cases in the UK are attributable to only a handful of exposures (see box, below).

Identifying occupational asthma

Ask every asthma patient of working age what they do for a living, with details. 'I work for a supermarket' isn't adequate. It is also worth asking whether their symptoms are better when they are not at work and whether there is anything at work that sets symptoms off. Be especially alert to patients whose asthma has begun – or relapsed – shortly after starting a new job. Also, remember that occupational asthma is often accompanied by occupational rhinitis. Patients may attribute this to hayfever or a cold. See the box, right, for a case history.

Diagnosing occupational asthma

Be wary of making a diagnosis on history alone, since a false positive diagnosis can be disastrous. Tests are generally necessary and are best done by specialists. Many, but not all, asthma consultants will be able to arrange these – the Group of Occupational Respiratory Disease Specialists is a UK network of consultants with a specialist interest. Tests may include immunological testing for specific sensitisation and functional testing for detecting a work-asthma relationship.

Many workplace agents that cause occupational asthma do so through the production of specific IgE antibodies that can be detected in serum or skin-prick tests. Functional testing is usually done by serial measurement of peak flow, at least four times a day (preferably more) for at least a month. Values on days at work can be compared with those when away. Occasionally, patients are admitted to hospital for specific provocation testing under controlled conditions.

I would advise a patient to continue working while the diagnosis is under consideration – except if the asthma is very severe – because staying off work can interfere with the diagnostic process.

There can be some confusion about the role of occupational health physicians here. Most occupational health physicians and nurses prefer to leave investigation of a potential case to a respiratory specialist, but then manage the case themselves. Unfortunately, only about 15% of the UK workforce has any occupational health coverage.

Employers whose workers are exposed to a potential asthmagen are required to arrange routine health surveillance for them. While this does happen in large firms, it is far patchier in small businesses.

Implications of a diagnosis

For the patient

It is usually recommended that patients with occupational asthma avoid further exposure to the causative agent. Even very small exposures will provoke continuing symptoms, and so it is often difficult for patients to avoid the asthmagen while remaining in the job.

For example, wearing a face mask is seldom sufficient even if it is tolerable. Large, well-run firms will attempt to find the employee alternative work in the organisation. Where this is impossible, as is often the case with smaller companies, your patient is likely to lose their job.

Of course, some patients may prefer to carry on working and put up with symptoms. Employers and their lawyers are rarely prepared to support this course of action, but it often happens among the self-employed. You'll need to make sure these patients understand the prognostic implications of this decision. Patients who do carry on working should try to keep further exposure to a minimum, and you should ensure they use sufficient asthma treatment. Antihistamines and inhaled steroids may help control some symptoms.

Those who do succeed in avoiding any further exposure usually find their asthma improves and there is a strong possibility of complete 'cure' – a rare outcome in asthma of any other sort.

Coming to terms with a diagnosis of occupational asthma and its implications is difficult for most patients, and they should to be allowed sufficient time. A few weeks or even months of further exposure is unlikely to have any lasting adverse impact.

Patients who have developed occupational asthma are eligible, unless self-employed, to claim for Industrial Injuries Disablement Benefit – a no-fault, statutory compensation.

If the diagnosis is accepted and they are judged sufficiently disabled – usually if they require regular prophylactic treatment – the benefit will be awarded with a minimum weekly payment of about £30. Patients do not need to have left their job to be awarded this.

Some patients with occupational asthma make a personal injury claim against their employer and they need to do this within three years of diagnosis. If your patient is a member of a trade union they will be able to access legal advice through this route.

For the employer

Employers are required by law to report cases of occupational asthma in their workforce to the Health and Safety Executive. This usually results in a formal, external inspection that can be expensive for a business. And the patient will lose any anonymity they might have had, potentially making it an uncomfortable experience. For all of these reasons, it is easy to see why a false positive diagnosis of occupational asthma is potentially disastrous.

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The Faculty of Occupational Medicine sets standards for specialists and supports GPs who are working part-time in occupational medicine or have an interest in work and health as it affects their patients. The diploma in occupational medicine, taken by many GPs, covers the effects of work on health, assessment of fitness for work, health surveillance, rehabilitation, workplace visits, ethics and the law. For further details on the diploma, other training and careers, and for more information on occupational medicine for GPs, visit www.facoccmed.ac.uk.

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OCCUPATIONS AND ASSOCIATED AGENTS

Job	Relevant exposure
Baking	Flour, 'improver' (amylase)
Work with animals	Animal proteins (research, veterinary)
Motor vehicle repair	Spray paints (diisocyanate)
Electronic assembly	'Multicore' solder fume (colophony)
Hairdressing	Bleaching powder (persulphate salts)
Detergent manufacture	Biological washing powders (enzymes)
Food processing	Seafood proteins, flour, enzymes
Woodwork	'Tropical' wood dusts (for example obeche, iroko, sapele)
Industrial foam manufacture	Diisocyanate
Other chemical processing	Glues, metals, amines
Welding	Stainless steel fume (chrome)

OCCUPATIONAL ASTHMA CASE HISTORY

John is a baker in the local branch of a large supermarket chain.

He was previously fit, but has noticed a constantly running nose and sneezing when he is at work.

His symptoms started about six months after he began the job – he had originally attributed this to a cold.

More recently he has found himself getting breathless during games of football, which he blames on his smoking.

He felt much better on a recent holiday in Crete.

Notes

- **At-risk occupation**
- **Short latent period ('about six months') between first employment and onset of symptoms**
- **Upper and lower respiratory symptoms, the former starting first**
- **Attribution to non-occupational causes (a cold and smoking)**

References

1 British Occupational Health Research Foundation. *Guidelines for the recognition, diagnosis and management of occupational asthma*. 2010
2 de Bono J and Hudsmith L. Occupational asthma: a community-based study. *Occup Med* 1999;49:217-19

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