Occupational asthma

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Early cessation of exposure is important

Occupational asthma is the most common form of occupational lung disease in many Western countries, having overtaken the pneumoconioses in these countries owing to improved control of exposure to silica, asbestos, and coal dust. The reported incidence ranges from 13 per million workers in South Africa to 174 per million workers in Finland. It has been estimated that occupational factors may be responsible for 15% of all cases of adult onset asthma. The financial costs of occupational asthma in the US alone were estimated at between $1.1 and $2.1 billion in 1996.

Although occupational causes are relatively uncommon, they are important because unlike most other forms of asthma, occupational asthma is eminently preventable. However, one of the challenges in prevention is the fact that there are several hundred known causes arising from many occupations in most major industries. This is one of the reasons why prevention strategies are often unsuccessful. To be successful, clinicians and occupational health practitioners need to be actively involved with the primary, secondary and tertiary prevention of occupational asthma.

Primary prevention is about the maintenance of safe working conditions and avoiding exposure to known sensitizers and irritants. A good example with which many readers would be familiar comes from the healthcare industry. A recent systematic review found evidence that substituting powdered latex gloves with low protein powder free gloves or latex free gloves greatly reduced latex allergy, sensitisation, and asthma in healthcare workers. This evidence was rated as SIGN level 2+, indicating that it is based on well conducted observational studies with a low risk of bias and confounding and a moderate degree of precision that the relationship was causal.

Secondary prevention of occupational asthma involves screening of workforces at risk. Workers known to be exposed to asthmogenic agents should undergo regular health surveillance. Cases of occupational asthma need to be identified early because continuing exposure results in worse symptoms, a faster decline in lung function, and a poorer prognosis. Clinicians usually only become involved with diagnosis, management and rehabilitation—that is, tertiary prevention of occupational asthma. Respiratory symptoms from unrecognised or undertreated asthma cause work related respiratory disability among young adults in many countries. While a key principle of management, removal from exposure often entails loss of job with the consequent socioeconomic disadvantages.

In this issue of Thorax Anees and colleagues report a study of the decline in forced expiratory volume in 1 second (FEV1) in a series of patients with occupational asthma in Birmingham. The authors found that FEV1 was declining by 101 ml/year before removal from occupational exposure. Following removal from exposure, FEV1 actually improved by 12.3 ml and subsequently declined by only 27 ml/year, a rate similar to what would be expected in a working age population. The authors admitted the likelihood of selection bias and the fact that they could not always be certain precisely when removal from exposure had occurred. The lack of an effect of current smoking on decline in FEV1 was surprising and might be due to a “healthier smoker” effect.
Theophylline for COPD

Theophylline for COPD

P J Barnes

Reinstatement in the light of new evidence?

Theophylline has been used as a bronchodilator in the treatment of COPD for over 70 years, but has lost popularity as better tolerated and more effective bronchodilators have been introduced. However, new insights into the molecular action of theophylline have raised the possibility that this old drug may come back into favour as an anti-inflammatory treatment and may even reverse steroid resistance in COPD.1 A paper by Hirano et al in this issue of Thorax provides further support for the anti-inflammatory effects of theophylline in patients with COPD.2

REFERENCES


2 Elder D, Abramson M, Fish D et al. Surveillance of Australian workplace based respiratory events (SABRE) notifications for the first 3.5 years and validation of occupational asthma cases. Occup Med 2004;54:395–9


8 Leigh JP, Ramana PS, Schenker MB et al. Costs of occupational COPD and asthma. Chest 2002;121:264–72

9 Sim MR. The continuing challenge to reduce the burden of occupational asthma. What is the best approach? Occup Environ Med 2003;60:713–4


12 Anees W, Moore VC, Burge PS. FEV1 decline in occupational asthma. Thorax 2006;61:15–5


Theophylline for COPD

CURRENT USE OF THEOPHYLLINE IN COPD

In the major guidelines for the treatment of COPD, theophylline is relegated to a third line bronchodilator after inhaler anticholinergics and β2 agonists. Nevertheless, it is recognised that theophylline is a useful treatment in patients with severe COPD as its withdrawal leads to significant clinical worsening of the disease.1 Many older clinicians have been convinced by its clinical value in severe disease.

THEOPHYLLINE AS A BRONCHODILATOR

Traditionally, theophylline was used as a bronchodilator in the treatment of airway disease but, to achieve significant bronchodilatation comparable with