

Chronic cough and the use of indoor 'plug-ins'

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Date accepted for publication 20 February 2007

Abstract

The British Thoracic Society has issued recommendations on the management of cough in adults (September 2006). They confirm that chronic cough is common, and affects up to 16% of the population with a female predominance. Common causes are discussed and include smoking, asthma, rhinitis, and reflux with obesity and side effects of drugs. Their management/treatments are reviewed. Exposure to pollutants and environmental irritants are stated as aggravating factors, with outdoor pollution from traffic and allergens mentioned in outline. This report includes four cases of cough which ceased after indoor 'plug ins' were switched off; these devices release aerosols of perfumed fragrances into the environment for a persistent pleasant odour of flowers.

Keywords

Chronic cough; plug-ins.

Case report 1

A 66-year-old man was referred for a second opinion due to a 1-year history of intractable cough. Prior investigation at another hospital revealed a normal chest X-ray and CT scan, lung function, methacholine test and barium meal without evidence of reflux. Skin prick tests were negative. Despite the absence of a causal agent, steroid nasal sprays, asthma treatments, antihistamines and acid block were trialled without benefit. Upon consultation with myself, there had been a sudden cessation of cough, which coincided with his wife leaving to visit Australia. Upon her return he relapsed. On questioning about events in the household, she revealed the use of plug-ins in every room and hair spray and perfume in the bathroom. The use of these agents was then suspended, along with a rapid cessation of his cough. He was seen 1 year later for an unrelated condition and reported no further coughing.

Case report 2

A 28-year-old girl with intractable cough and chronic iron deficiency (from likely arteriole-venous malformations) was referred for assessment. She was a housewife and non-smoker with no previous respiratory history and a normal chest X-ray. The cough was dry with intractable spasms that could cause retching. The effects were worse by day. She had no pets, but on skin testing was

positive to tree, grass, flowers, weed and shrub. Lung function was normal. She denied rhinitis and reflux symptoms and had a normal BMI. On questioning she admitted to the use of plug-ins in virtually every room including the hallway and landing. Much to her dismay she was asked to turn them off and return in 2 weeks. At review few symptoms remained and peak flow records did not suggest asthma. From her long term haematology follow-up clinics, she confirmed no further problems in over 1 year.

Case report 3

A 57-year-old lady was referred with a dry cough and severe spasms of coughing when she lost her breath. This had been increasing for 2 years and was present on a daily basis. Skin tests were positive to mould spores, feathers, weed and shrub, house dust mite. Lung function was normal and her chest X-ray was clear. Extensive use of plug-ins, hair sprays and air fresheners were confirmed on questioning. Review at 2 weeks, with all use prohibited led to a dramatic improvement. Peak flow charts showed 15% variation suggestive of mild asthma. The six feather pillows were then removed from the bed in view of her skin tests and house dust mite covers purchased. Her symptoms continued to decline until they became unnoticeable over the next 2 months. The patient did report that attempts to use unperfumed hair sprays still produced coughing which previously she had failed to notice.

Case report 4

A 72-year-old lady with intractable dry cough was referred. The cough was especially troublesome by day resulting in urine incontinence, failure to catch her breathe and avoidance of social events as a result. It had been increasing for 1-2 years and was present on a daily basis. She had a normal chest X-ray and lung function. She was an ex-smoker for 30 years (25 pack years). Although her BMI was 30, she denied reflux or rhinitis and had no medication known to cause cough. She was non-atopic on skin testing. She admitted to the use of plug-ins in the hall, bathroom, kitchen and sitting room. She was asked to switch them off and return with peak flow charts 2 weeks later. At review her symptoms were 60% better and no asthma was demonstrated. A further review 6 weeks later led to her discharge/SOS allowing her to return within the first year if she relapsed. She did not re-attend.

Discussion

The British Thoracic Society has issued recommendations on the management of cough in adults (September 2006)^[1]. They confirm that chronic cough is common, and affects up to 16% of the population with a female predominance.

This initial observation of coughing induced by plug-ins was intriguing and suggested an airway irritant resulting from use of the product. The number of cases currently seen (>12) with plug-ins as the apparent cause is growing, now that the question has been raised. The key is making the enquiry, as no association is made by the patient so far, and improvement is greeted with amazement when the cough abates. The level of cough is intractable and gets better on holidays away from the home. The extent of product use and the time spent within the home environment must also contribute. On history taking, the patients do not identify any precipitant related to the onset of their cough. In particular, there were no post viral events or seasonal factors. They also denied irritants from work, exposure to pets or various hobbies as likely causes. Their referral was due to the persisting, intractable nature of the cough from which they had no respite. These coughs were aggravated by colds and other viruses without suggestion that they were post infectious in origin. There may be a predominance of atopic phenotype, but more cases need to be collected. Since these plug-ins are commonly used and commonly advertised household products, their possible role in intractable cough needs to be recognised by GPs and chest physicians. From the cases described, it would appear that long and extensive tests with trials of unnecessary medication have also been avoided, making such a diagnosis cost effective. If similar cases such as these are recognised by GPs and chest physicians, it would be important to discuss these issues with the manufacturers. This would help establish if their products are recognised as potential airway irritants, in which case, they should be labelled accordingly.

Teaching point

All newly referred cases of chronic idiopathic cough with a normal chest X-ray must be questioned with regard to such agents. Where the answer is “YES”, immediate cessation should be requested with a review at 2 weeks.

Reference

1. Morice AH, McGarvey L, Pavord I' on behalf of the British Thoracic Society Cough Guideline Group. Recommendations for the management of cough. *Thorax* 2006; 61(suppl 1): i1-i24.