CASE REPORT

Alcohol-induced bronchospasm

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SUMMARY

A case of alcoholic beverage sensitivity is described which presented as acute bronchospasm. Such reactions in asthmatics are not uncommon, though their severity may be underestimated in the presence of intoxication. Indeed, such patients may be dismissed as suffering only from the effects of intoxication with obvious consequences.

INTRODUCTION

Alcohol is known to be responsible for many problems both in society and in the health of individuals. However, allergic reactions to substances contained in alcoholic drinks are not well recognised, though they are sufficiently common to merit consideration in the assessment of the intoxicated (Morrow-Brown, 1987). In some cases the response may be sufficiently severe to threaten life.

CASE REPORT

A severely breathless and wheezy 51-year-old lady, a known asthmatic, was brought to the A&E department of the Leeds General Infirmary early in the morning of the 12th June 1987, the morning after the last General Election. Her breathing had suddenly deteriorated prior to presentation. On arrival she was breathing spontaneously, smelt of alcohol and on auscultation of her chest she was found to have a 'silent chest'. She had a tachycardia of 140 beats per minute and had a paradox of 40 mm of mercury. The peak expiratory flow rate was unrecordable and on estimation of her arterial blood gases, the pH was 6.93, the pCO₂ was 15.9 KPa, the pO₂ was 13.5 KPa and the bicarbonate was 15.5 mmol/litre. She had been given 100% oxygen in transit.

Questioning of the patient's husband revealed that she had consumed in excess of six

measures of vodka, mixed with other drinks, during the night and early hours of the morning. He stated that she had been 'drowning her sorrows' as the results of the election became known. Her average alcohol intake was half a bottle of whisky and two bottles of sherry per week. The patient's normal medication included a salbutamol inhaler, aminophylline and nifedipine retard (for hypertension). She was a non-smoker.

The acute asthmatic episode was controlled successfully with transcrisoid intratracheal, and intravenous salbutamol, nebulised salbutamol, intravenous hydrocortisone and a slow aminophylline infusion. The improvement was monitored by the improved arterial blood gases, which 20 minutes later were pH 7.08, pCO₂ 9.7 KPa, pO₂ 12.25 KPa and bicarbonate 16.4 mmol/litre. At this stage the patient was becoming alert, was less distressed and she was able to record a peak expiratory flow rate of 150 litres/min. She remained in the Leeds General Infirmary as an inpatient for several days, and subsequently made an uneventful recovery.

COMMENT

Allergic responses to either yeast products or other substances such as natural flavourings and colourings in alcoholic drinks are known to occur (Morrow-Brown, 1987). Sometimes the preservatives such as sulphites may be responsible, though it is unlikely that ethanol itself is responsible (Breslin *et al.*, 1973). Patients may be particularly sensitive to certain alcoholic drinks, some may react to red rather than to white wine and the specific intolerance may relate to one vintage and not another. One study has shown that up to 10% of outpatients with bronchial asthma complain of asthmatic exacerbations in association with red wine consumption (Dahl *et al.*, 1986). This study also showed that the content of sulphur dioxide is the most important factor in the provocation of bronchospasm and recommended that wine labels provide information on the sulphur dioxide content of the wine.

Allergen-induced late asthmatic responses are associated with inflammation, mucosal oedema and secretion, with smooth muscle constriction. Additionally, there is an increased bronchial responsiveness to histamine, and histamine is a potent bronchoconstrictor (Cartier *et al.*, 1982). Studies involving pretreatment with sodium chromoglycate have demonstrated suppression of the allergic reaction (Breslin *et al.*, 1973). However, a non-IgE based reaction can also operate in red wine asthma, as non-atopic patients may also respond with bronchospasm (Dahl *et al.*, 1986). It is also possible that alcoholic beverage sensitivity may be transient and associated with an increased bronchial reactivity induced by exposure to other allergens, irritants or stress (Dahl *et al.*, 1986).

This case demonstrates that the staff working in A&E departments should be aware of alcoholic beverages as a possible contributory factor in acute asthmatic attacks, and that patients who are intoxicated should not be dismissed lightly if they show signs of bronchospasm.

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