Community Clinics in Clinical Pharmacology

A case of intrinsic asthma

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Case history

Mr C D is a 70-year-old retired architect. Apart from a craniotomy in 1969 to extract a subdural haematoma, he has been fit all his life. He does not smoke, and has never had any respiratory tract symptoms until two years ago, when he started to develop a "wheeze." He improved initially with inhaled salbutamol, but his bronchospasm has worsened recently. Indeed, we have been called out twice over the past two weeks to treat episodes of acute status asthmaticus, which responded satisfactorily to intravenous aminophylline and hydrocortisone. Results of a chest x-ray examination 10 days ago were normal, as was a full blood count and the erythrocyte sedimentation rate, but he still has pronounced bronchospasm, and I wonder whether I should consider starting him on steroids.

Advice

I saw Mr D this morning, and there is little to add to Dr Bell's history. The patient has never suffered from eczema or hayfever, and the recent worsening of his symptoms has not been associated with purulent sputum. Moreover, the patient denies "overdosage" with salbutamol, and he was emphatic that Dr Bell had warned him of the dangers of overusage. Examination showed widespread rhonchi, with a peak expiratory flow rate of 80 l/min (increasing to 170 l/min after isoprenaline), but his cardiovascular system was normal with a blood pressure of 160/95 mm Hg and his electrocardiogram was also normal.

This man's symptoms are due to intrinsic asthma. He has no symptoms or signs suggestive of polyarteritis nodosa (which sometimes develops in patients with intrinsic asthma) and his ESR is normal. I would suggest, therefore, that he continues to take salbutamol but that you should add an inhaled steroid (beclomethasone) at a starting dose of 100 µg four times daily and increase the dose in the light of his clinical response.

Inhaled steroids can produce adrenocorticoid suppression but only at daily doses above 800 µg. Some patients may develop candidiasis of the mouth and throat. This is dose-dependent and often asymptomatic but may cause a sore throat and hoarse voice. In addition, acute infections of the bronchial tree may precipitate severe bronchospasm in patients maintained on inhaled steroids—presumably because the drug is unable to penetrate into and through tissues. For this reason patients should be given a supply of oral steroids to cover acute chest infections. I would suggest 30 mg prednisone a day, taping down rapidly, and changing back to inhaled steroid at the same time. I also give patients a supply of an antibiotic, and tetracycline would be appropriate for adults.

Most patients who are on less than 10 mg a day of prednisone may be transferred completely to inhaled steroids. Some patients on higher doses may also be transferred completely, and it is almost always possible to reduce substantially the dose of systemic steroid. The main problem is that of preventing acute glucocorticoid insufficiency, and the reduction in oral steroids should therefore be done slowly, reducing by 1 mg every week, or even every month in some instances. Cromoglycate would not benefit this patient because although it is useful for patients with extrinsic asthma it is of no value for intrinsic asthma.

We don't yet know what the dangers of salbutamol are and whether they are really any less than those of isoprenaline. The reasons for the rise in asthma mortality during the 1960s are still not clear, but there was a close correspondence between the annual sales of isoprenaline inhalers and mortality. Whether these deaths were due to the cardiotoxic effects of isoprenaline overdosage, to the development of "tolerance" by bronchial musculature to β-agonists, or to a decline in steroid usage is still unresolved. Salbutamol certainly has substantially less activity on the heart compared with that on the bronchi, but whether this makes it safer is debatable. The most important point is to educate the patients in the dangers of overdosing themselves with *any* inhaled β-agonist.

Postscript

The patient had an excellent symptomatic response to the administration of 100 µg beclomethasone four times daily. He has had no further attacks of acute bronchospasm, his peak expiratory flow rate is 300 l/min, and he can play 18 holes of golf without discomfort.

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