Lesson of the Week

Diuretics are dangerous with lithium

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The combined use of lithium salts and diuretics has been said to be contraindicated.^{1 2} Diuretics, such as the thiazides, that decrease sodium reabsorption in the proximal tubules of the kidney indirectly increase lithium reabsorption. The use of a diuretic by a patient already taking lithium may result in a reduced urine output, a paradoxical retention of fluid, and a rise in the serum lithium concentration.^{3 4} On the rare occasions when it is necessary to give diuretics to patients with manic-depressive illness who are already receiving long-term treatment with lithium, close laboratory control of their serum lithium concentrations is essential, which may require admission to hospital.⁵

We report on two patients whose cases illustrate the dangers of uncontrolled prescribing of diuretics to patients already receiving lithium.

Case reports

Case 1—A woman, now aged 45 years, had had 12 admissions to hospital for a manic-depressive disorder in the 12 years between the onset of her illness at the age of 26 in 1962 and the start of treatment with lithium at the age of 39 in 1974. She remained well, taking lithium carbonate (Priadel) 400 mg four times a day, with serum lithium concentrations varying between 0.9 and 1.2 mmol/(mEq)/l. On 2 August 1979 a serum lithium concentration of 2.4 mmol(mEq)/l was reported. She was contacted, advised to stop taking lithium carbonate, and asked to return urgently to the clinic. One week later she was admitted to hospital having relapsed into mania. Renal function, assessed by serum urea and electrolyte analysis, was normal both before and after this episode. Later we discovered that her general practitioner had recently prescribed bendrofluazide 5 mg daily for mild ankle oedema. This was her first episode of illness for six years.

Case 2—A woman, now aged 63 years, suffered 22 separate episodes of manic-depressive illness in the 27 years between the onset of her disorder at the age of 23 in 1939 and the start of treatment with lithium at the age of 50 in 1967. She remained well, taking lithium carbonate 250 mg four times a day, with serum lithium concentrations varying between 0.8 and 1.1 mmol(mEq)/l until June 1979 when a serum lithium concentration of 1.6 mmol(mEq)/l was recorded. She was contacted and advised to reduce her daily dose of lithium carbonate to 250 mg three times a day and asked to return urgently to the clinic. Inquiries showed that she had been prescribed bumetanide-K

Diuretics may produce toxic concentrations of lithium in patients taking long-term lithium treatment for manic-depressive illness.

(bumetanide 0.5 mg and 7.7 mmol slow-release potassium chloride) one tablet a day for mild ankle oedema. After reducing her lithium intake her serum lithium concentration fell to 0.6 mmol(mEq)/l, when she relapsed into mania and was admitted to hospital. Renal function, assessed by serum urea and electrolyte analysis, was normal both before and after this episode. This was her first episode of illness for 13 years.

Comment

Diuretics may occasionally be combined appropriately with lithium, but they should only be given for positive medical indications. The serum lithium concentration should initially be estimated daily, and close biochemical and clinical supervision is essential during the first month of treatment. These case reports show the dangers of prescribing diuretics for patients who are taking prophylactic lithium without close laboratory and clinical control. In both cases toxic serum lithium concentrations occurred, which led to lithium being stopped. Both patients relapsed into mania and had to be admitted to hospital.

References

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Is there a health hazard in using asbestos material for plugging holes in masonry?

There should be no danger of interstitial pulmonary asbestosis or of an increased likelihood of bronchial carcinoma from short, transitory, and infrequent exposures to minimal amounts of airborne asbestos dust. Mesothelioma can be caused by relatively slight exposures to the crocidolite ("blue") form of asbestos, but the likelihood of crocidolite being incorporated in any filling material manufactured in Britain since about 1970 is remote, and the use of these materials as a wet mix would further reduce liberation of airborne dust.