Malignant Hypertension in a Woman with Previous Chronic Lithium Nephrotoxicity

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Dear Sir,

Lithium carbonate causes a variety of renal disorders [1–3]. In 1979, we investigated a 31-year-old woman with a 10-year history of a manic-depressive psychosis. For 6 years she had been treated with lithium carbonate which had been stopped 10 weeks before presentation because of renal insufficiency. She had been troubled by polyuria and polydipsia for 4 years. Plasma lithium concentrations had been between 1.0 and 1.75 mmol/l. 1 month prior to presentation, she had suffered her third grand mal epileptic fit and had been commenced on phenytoin. The blood pressure was consistently about 136/86 mm Hg.

Investigations: An MSU contained no cells or casts and was sterile on culture, the plasma creatinine was 0.16 mmol/l, creatinine clearance 0.78 ml/s, 51Cr-EDTA clearance 0.73 ml/s, 24-hour urinary protein excretion less than 0.1 g and maximal urinary concentrating ability (following intranasal desmopressin) 304 mmol/kg. Renal biopsy showed a severe chronic interstitial nephritis with features closely resembling those reported by Hest-bech et al. [2]. 9 months later, the blood pressure was 138/98 mm Hg, the plasma creatinine 0.13 mmol/l, creatinine clearance 0.88 ml/s, 24-hour protein excretion 0.33 g and maximal urinary concentrating ability 301 mmol/kg.

4 years later, she presented with a 3-month deterioration in health including severe frontal headaches, chest pain and dyspnoea. She had been taking phenytoin, but no other medications. The blood pressure was 220/136 mm Hg and the fundi showed hemorrhages, exudates and papilledema. Left ventricular enlargement was present on chest X-ray and an electrocardiogram showed left ventricular hypertrophy and ischemic changes. The plasma creatinine was 0.14 mmol/l, creatinine clearance

0.6 ml/s, 51Cr-EDTA clearance 0.71 ml/s, mean 24-hour urinary protein excretion 0.7 g and maximal urinary concentrating ability 275 mmol/kg. A renal angiogram was normal. Plasma renin activity was 34.7 nmol/l/h (normal 0.15–1.55), plasma aldosterone 3,107 pmol/l (normal 140–550), plasma norepinephrine 946 pg/ml and plasma epinephrine 69 pg/ml (both within normal range). A renal biopsy again showed a chronic interstitial nephritis, but there were also severe hypertensive vascular changes. The patient's blood pressure was controlled with frusemide and captopril.

A variety of renal disorders has been reported in patients taking lithium carbonate [1–3], the most serious of which is a chronic interstitial nephritis [2]. We are unaware of any reports of malignant hypertension developing in a patient with the latter complication.

References

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