Life-threatening hypokalaemia from abuse of Nurofen Plus

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J R Soc Med 2005;98:21

Non-steroidal anti-inflammatory drugs are widely available as over-the-counter preparations. Adverse effects of these drugs include nephrotoxicity.¹

CASE HISTORY

A woman aged 45 came to hospital in a drowsy state, with headache. For three months her mood had been low and she had been prescribed fluoxetine 20 mg/day. She was thin (body mass index 17 kg/m²) and normotensive. Investigations revealed a serum potassium of 2.6 mmol/L (reference range 3.5–5.0) and a serum creatinine of 56 µmol/L (60–120). She recovered spontaneously, but at discharge 48 hours later her potassium concentration had fallen to 2.8 mmol/L. Six months before, serum potassium had been 4.5 mmol/L. She had two further admissions in the next six weeks with drowsiness and general weakness, on each occasion with profound hypokalaemia (potassium 2.0 and 1.7 mmol/L, respectively). On the third admission, further investigation revealed an arterial pH of 7.4 (7.35–7.45) with pCO₂ 4.0 kPa (4.5–6.1), serum bicarbonate 19 mmol/L (24–32) and chloride 110 mmol/L (96–105) (anion gap 18 mmol/L). She had a normal serum magnesium, 0.9 mmol/L (0.7–1.0). Urine pH was 7.0 and 24 h urine potassium excretion was 120 mmol, giving a transtubular potassium gradient of 7.3 mmol/L. Renal tubular acidosis with renal potassium wasting was diagnosed and she was treated with oral sodium bicarbonate 6 g/day and oral potassium 2.8 g (72 mmol) per day. Potassium rose to 4.3 mmol/L and bicarbonate to 29 mmol/L.

A urine drug screen was positive for ibuprofen, paracetamol, opioids and benzodiazepines, and she was subsequently readmitted after self-poisoning with Nurofen Plus (ibuprofen 600 mg, codeine phosphate 12.8 mg; Crookes Healthcare Ltd, Nottingham, UK). From another source we learned that her flat was littered with empty Nurofen Plus packets, and she later described regularly consuming 28 g/day of ibuprofen.

COMMENT

Acute renal failure and interstitial nephritis are well documented adverse effects of non-steroidal anti-inflammatory drugs. However, we have found only two reports of effects of these drugs on renal tubular acidification. In both, overdose of ibuprofen was reported as causing type 2 proximal renal tubular acidosis.^{2,3} We believe this is an important issue to raise, because in the present case and that of Chetty *et al.*³ the ibuprofen was an over-the-counter preparation. Abuse of such agents can easily escape notice.

Acknowledgment We thank Dr RE Ferner (West Midlands Centre for Adverse Drug Reporting, City Hospital, Birmingham B18 7QH, UK) for his help in the preparation of this report.

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Myocardial infarction after aspirin treatment

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J R Soc Med 2005;98:21–23

Aspirin has been reported to cause coronary spasm as well as bronchospasm, but never acute myocardial infarction.

CASE HISTORY

A woman of 55 attended the emergency department after six hours of left-sided chest pain. She was a smoker. Previously she had been fit and well apart from mild asthma. There was no history of illicit drug use. She did report an 'allergy' to aspirin but was vague about how this showed itself. On examination she was haemodynamically stable and the only finding of note was mild expiratory

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