An interesting case of hypertension with hypokalaemia

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A 51yr old man presented with a 10 day history of profound weakness and hypotonia and 4 days of diarrhoea. He had a past history of hypertension treated with lisinopril and bisoprolol. He denied alcohol excess. Initial investigations showed a serum potassium of 1.8 mmol/l and a metabolic alkalosis with pH 7.6 and bicarbonate 50.3mmol/l.

Subsequent investigations confirmed urinary potassium loss (30mmol/l for a prevailing serum potassium of 2.9mmol/l). Urinary pH was 8.5. Renin was 0.3ng/ml/hr and aldosterone 98pmol/l (off interfering medications). Gastrointestinal hormone levels showed a raised gastrin consistent with proton pump inhibitor therapy. CT adrenals was normal.

During follow up he remained well with a varying serum potassium level (2.9–3.6mmol/l) off potassium supplementation. He denied use of non-prescription medication or regular consumption of liquorice. On discussion with his general practitioner it materialised that he had an undisclosed history of kaolin morphine abuse. At the time of admission, he was consuming over 600mls daily.

Kaolin morphine can be purchased without prescription. It contains kaolin 20g/100ml, sodium bicarbonate 5g/100ml, morphine hydrochloride 9.2mg/100ml and liquorice extract 4.5g/100ml. Liquorice has a mineralocorticoid effect due to its content of glycyrrhizinic acid. We believe that the combination of liquorice extract and sodium bicarbonate resulted in the profound hypokalaemia and hypertension in this patient. Two similar cases have been reported of severe hypokalaemia associated with kaolin morphine use, one of which was fatal. This case highlights the importance of a careful medication history and the danger of unmonitored use of kaolin and morphine.