

Adrenal crisis due to long-term steroid withdrawal.

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Introduction:

Longterm use of corticosteroids for anti-inflammatory properties may lead to adrenocortical atrophy and failure of endogenous cortisol production. Abrupt steroid withdrawal or intercurrent illness can precipitate acute adrenal crisis. We report two cases of adrenal crisis which resulted from withdrawal of immunosuppressive steroid therapy.

Case 1:

A 74 year old gentleman was admitted with hypotension (BP 80/40), severe hyponatremia (pNa:118mmol/L) and acute renal failure (Creat 470 mmol/L). Despite IV fluids, hypotension worsened (70/46) and renal failure (Creat 610) deteriorated; dialysis was recommended.

Endocrinology consultation, for hyponatremia (pNa:120mmol/L), elicited a drug history of prednisolone 5mg daily for rheumatoid arthritis. Stress dose of steroid was not given.

Further history revealed that prednisolone had been withheld during 48hrs of bowel preparation for colonoscopy. After the colonoscopy, the patient vomited and was unable to keep oral prednisolone down.

The patient was treated with intravenous hydrocortisone 100mg IV qds, with rapid recovery of BP (134/80), plasma sodium (137mmol/L) and creatinine (87mmol/L).

Case 2:

A 76 year old lady was admitted for knee arthroscopy. Post operatively her plasma sodium dropped from 142 to 119mmol/L over 24hours. BP fell from 140/80mmHg to 102/58mmHg.

An endocrinology consult for hyponatraemia documented that she was on prednisolone 5 mg daily for rheumatoid arthritis, but had run out of tablets three days prior to her admission. She had no IV hydrocortisone cover for anaesthesia. In the postoperative phase, random cortisol was < 30nmol/l while hypotensive.

She rapidly responded to IV hydrocortisone - plasma sodium rose to 130mmol/L and BP came up to 132/78 over 36 hours of treatment.

Days	1	3	6	8
Events	IV fluids	IV fluids	Hydrocortisone	Prednisolone
Na	118	120	138	138
Urea	9.6	12.7	9.9	7.5
Creatinine	120	248	109	87
K	3.8	4	4.2	3.8
BP Sys	80	100	132	135
BP Dias	40	60	80	82



Diagnosis:

A diagnosis of adrenal crisis due to steroid withdrawal was made.

Reflection:

Neither patients were aware of "sick day rules" or had medical alert bracelets. Correct procedures for acute illness or surgery were not followed. Serious hypotension and hyponatremia resulted from steroid deficiencies.

Conclusion:

The case studies illustrate the vulnerability to adrenal crisis in patients on long-term immunosuppressive steroid. Patients on immunosuppressive steroids should be as aware of sick day rules as endocrine patients on adrenal replacement therapy. We recommend that intercurrent illness and surgery should be covered with stress steroid doses and that patients carry medical alert identifiers and steroid treatment cards

