Cranial Diabetes Insipidus

A pituitary patient was admitted for an elective cholecystectomy and had his drug chart written-up. He did not receive desmopressin for 48 hours and became profoundly hypernatraemic as a result. The patient became very ill, and subsequently died.

-A reported incident from the National Reporting and Learning System (NRLS)

Cranial diabetes insipidus is a rare disorder of the pituitary gland characterised by an inability to produce antidiuretic hormone (ADH). This results in the production of large volumes of dilute urine. Cranial diabetes insipidus is the most common type of diabetes insipidus. It can be caused by damage to the hypothalamus or pituitary gland, for example, after an infection, operation, brain tumour or head injury. Left untreated, patients with cranial diabetes insipidus will develop life-threatening dehydration and hypernatraemia. Desmopressin is a synthetic form of ADH used to treat cranial diabetes insipidus and is considered a life sustaining medication in this situation. In the treatment of cranial diabetes insipidus, desmopressin is most commonly administered as an intranasal spray or oral tablets, but may also be given as an injection, which is useful in the treatment of acutely unwell or fasting patients. It is also available in sub-lingual tablet and oral liquid formulations.

Addisonian Crisis

Risk of severe harm or death when hydrocortisone, prednisolone or fludrocortisone is omitted or delayed in patients with Addison’s disease or who have no adrenal glands.

A 40 year old male with known autoimmune Addison’s disease presented to the hospital with diarrhoea, vomiting and signs of cardiovascular failure. Two days prior to his admission, the patient had increased his own oral dose of hydrocortisone, but his health continued to deteriorate. The patient subsequently died.

-A reported incident from Allolio et al

An Addisonian crisis can occur in patients with adrenal insufficiency or failure. It can be exacerbated by trauma, surgery and severe infections, such as Noro virus in the patient above. Patients tend to present with severe hypotension, nausea, vomiting and electrolyte imbalances. Early diagnosis and treatment is vital. Treatment involves an immediate bolus of 100mg hydrocortisone, followed by 200mg continuous intravenous hydrocortisone per day. Fludrocortisone (100mcg) should accompany this. Furthermore, the patient should be given a litre of normal (0.9%) saline within the first hour to replace fluids lost and correct any electrolyte abnormalities.