Sodium Imbalances – quick guide

Urine output 0.5 – 1 ml/kg/hr	High - >1000 ml/ 3hours	High	Low
Urine S.G. 1.010- 1.035	Low - <1.005	Normal	High
Urine Na+ ~20mmol/l (If doing a 24 hour urine collection 40- 220 mmol/24 hrs)	Low	High	High (concentrated)
Serum Na+ 135- 145 mmol/l	High and Rising	Low	Low (dilutional)
Total body water	Falling rapidly	Low	High (retention)
Likely Diagnosis	**Diabetes Insipidus (DI)**	**Cerebral Salt Wasting (CSW)**	**SIADH**
Treatment	DDAVP Replace output	Replace volume and sodium Fludrocortisone	Fluid restrict

ENSURE HOURLY FLUID BALANCE IS COMPLETED

Definitions

CSW – Over excretion of Sodium and water

DI – Over excretion of water

SIADH – Retention of water

Management of Cerebral Salt Wasting (CSW)

- All spontaneous SAH patients MUST have urine electrolytes and NT-proBNP sent with daily morning bloods
- 4-6 hourly ABGs for sodium and potassium levels. Do NOT correct sodium >10mmol/l in 24hrs
- Sodium supplements – if on NG feeding, can use IV preparation diluted in sterile water (3g in 10ml vials)
- Check MgSO4 and PO4 at least daily: give IV/enteral supplements as required to keep > 1mmol/l
- Patients with severe cerebral salt wasting may require BD serum and urine U&Es sending – ask consultant on ward round
- Can send urine/serum osmolality with daily bloods but must be sent together – on consultant/senior registrar instruction
- If able to drink – discourage patients from drinking pure water and offer squash/juice instead. Check on ward round what fluid balance we are aiming for and whether for IV replacement (0.9 or 1.8% sodium chloride)

Management of Diabetes Insipidus (DI)

- Common in post-op transphenoidal surgery patients, TBI patients and in brain-stem death
- Caused by impaired production/release of ADH so kidneys no longer conserve water – urine becomes very dilute and serum sodium increases rapidly
- If suspected DI – send serum + urine osmolality and check urine Specific Gravity (SG) (inform doctors if < 1.005)
- If patient able to E&D – encourage patient to drink, if patient ventilated then adjust IV volume replacement to urine output and add enteral water boluses
- If severe cases of DI, can give dose of DDAVP – 0.1-0.5mcg IV but MUST be discussed with NICU and/or NS consultant first
- 4-6 hourly ABGs

Management of syndrome of inappropriate antidiuretic Hormone (SIADH)

- Must rule out cerebral salt wasting diagnosis first
- If mild hyponatraemia (133-135mmol/l) can try fluid restricting 1-1.5L per 24hrs
- If severe hyponatraemia (< 120mmol/l) then consider 1.8% sodium chloride infusion – start at 50ml/hr but discuss with consultants
- 4-6 hourly ABGs, BD serum U&Es