**HYPONATRAEMIA ASSESSMENT AND TREATMENT ALGORITHM**

**Na<130mmol/l, Overt Symptoms usually below 120mmol/l**

**Evaluate:**
- Conscious level, drugs, Postural BP, Consider level 2 care if low GCS or seizures

**Assess Volume status and Urine Na**

- **Hypovolaemic**
  - Urine Na <20mmol/L
    - G= vomiting/ diarrhoea
    - Fluid shifts (e.g. pancreatitis)
  - Urine Na >20mmol/L
    - Diuretics (occ Na<20 if recently stopped)
    - Salt wasting nephropathy (analgesics, pyelonephritis)
    - Adrenal insufficiency- If 9am cortisol is < 500nmol/l, proceed with SST.

- **Euvolaemic**
  - Urine Na <20mmol/L
    - Acute H2O overload (usually with preceding dehydration)
  - Urine Na >20mmol/L
    - Chronic H2O overload (urine osmol <100mOsm/kg)
    - Renal failure (CRF)
    - Hypothyroidism
    - Adrenal insufficiency (reduced free water clearance)
    - SIADH^*^*

- **Hypervolaemic**
  - Urine Na <20mmol/L
    - Cirrhosis
    - Congestive Heart Failure
    - Nephrotic syndrome

**Symptomatic**
- Restore volume with fluid challenge (1L saline over 8 hrs)
- Repeat Na and continue fluids if

**Asymptomatic**
- Restore volume with isotonic saline

**Symptomatic**
- Treat underlying Cause.
- Stop offending drugs
- Consider:- Water restriction
- Demedocycline
- 150mg bd-qds
- Tolvaptan (Only by Consultant Endocrinologist for SIADH)
- Hypertonic saline-
  - (Discuss with Consultant Endocrinologist/Intensivist before initiation)

**Asymptomatic**
- Water restriction
- Stop offending drugs

**Symptomatic/asymptomatic**
- Treat underlying disorder
- Water restriction

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**MONITORING**

- Fluid balance, Strict Input and Output chart. Na should not increase by Greater than 10-12mmol in 24 hours.
- Urgent Serum U+E/Sodium should be checked every 12 hours.
- In marked ‘non-acute’ hyponatraemia, aim for cautious Na replacement due to risk of demyelination.
- During active treatment of severe hyponatraemia serum Na should be reassessed hourly. (HDU environment if possible)
- Refer to ICCU/ITU URGENTLY If Na<115 mmol/l or evidence of neurological insult e.g Seizures, declining GCS.

**Think of Pseudohyponatraemia-** e.g. lipaemic, paraprotein OR Intracellular shift (hyperglycaemia) osmolar gap-

- *Drugs* such as diuretics (thiazides, amiloride/ Frumil, spironolactone), carbamazepine, ACE inhibitors and antidepressant SSRIs are notable causes. PPI's have also been implicated.

**Symptoms** depend critically on rapidity of onset and severity of hyponatraemia **Acute hyponatraemia** can cause cerebral oedema and requires urgent treatment. **Chronic hyponatraemia** if corrected too rapidly can cause osmotic demyelination

^SIADH is a diagnosis of exclusion in euvolaemic hyponatraemia with Urine Na>20 and Ur Osm>200. If no response to fluid restriction, consult an Endocrinologist for exploring role of Vasopressin receptor antagonist such as Tolvaptan^*^*

**U/P electrolyte ratio** = Urine Na + Urine K / Plasma Na

**Calculated Osmolality** = [2x (Na + K)] + Urea + Glu

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North East Endocrine Network