Sheffield Teaching Hospitals NHS
NHS Foundation Trust

NEW HYPONATRAEMIA IN ADULTS

Laboratory Medicine procedure LMGPR0018
Version 2
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- Na <125 mmol/L (all new Na <125 will be phoned) **or**
- Symptomatic[$] **or**
- Hypovolaemia

→ Immediate admission to hospital recommended.

Na 130-132 mmol/L
- Repeat Na within 48 hours to check not rapidly decreasing (>5mmol/L).
- Consider requesting osmolality & glucose on repeat bloods.

Na 125-129 mmol/L
Asymptomatic: Consider discussing with endocrinologist need for admission/referral.

Measure serum osmolality & plasma glucose (if not already done)

Box 1. Some causes of hypo-osmolar hyponatraemia
- Drugs (see Box 2)
- GI loss
- Skin loss (e.g. burns)
- Renal failure (chronic)
- Nephrotic syndrome
- CCF
- Cirrhosis
- Adrenal insufficiency
- SIAD (see Box 3)
- Hypothyrodism (rare)

Osmolality high >295
→ Exclude hyperglycaemia, raised urea or recent alcohol xs

Osmolality normal 275-295
- Possible pseudo hyponatraemia: Check serum protein & trigycerides.
- Exclude hyperglycaemia, raised urea or recent alcohol xs

Osmolality low <275
→ True Hyponatraemia

[$]Symptoms
- Nausea
- Vomiting
- Headache
- Confusion
- Drowsiness

- Look for cause (Box 1).
- Consider UE, LFT, TSH & 9am cortisol
- Stop any drugs which may be contributing, if safe to do so (Box 2).

Box 2. Drug causes (list not exhaustive)
- Diuretics
- ACE inhibitors
- PPIs
- Sulphonylureas
- Tricyclics
- SSRIs
- Antipsychotics
- NSAIDs
- Opiates
- Amiodarone
- Carbamazepine
- Theophylline

***Pseudohyponatraemia:** Artefact which occurs in hyperproteinaemia and hypertriglyceridaemia. All sodiums <125 & all samples with total protein >90 or lipaemia will be checked for pseudohyponatraemia by the lab.

If the cause is still not clear request urine osmolality & sodium and a repeat serum sodium (all to be collected on the same day).

Urine osmolality >100 mOsmol/Kg

Urine Na >30 mmol/L

Possible causes:
- Drugs (see box 2)
- Kidney disease
- Vomiting
- Uncontrolled hypothyroidism
- SIAD (see box 3)
- Adrenal insufficiency

Urine Na ≤30 mmol/L

Possible causes:
- D & V
- Heart failure
- Liver cirrhosis
- Nephrotic syndrome

Urine osmolality ≤100 mOsmol/Kg

Possible causes:
- Primary polydipsia
- Low solute intake (eg. alcoholic or "tea & toast" diet)

Box 3. Some causes of SIAD
Malignancy - mainly small cell lung cancer, also some GI & genitourinary. Arrange 2WW referral if malignancy suspected.
Respiratory - pneumonia, PE, abscess, TB & CF.
Cerebral - CVA, trauma, tumour & infection.
Miscellaneous – pain, nausea, acute intermittent porphyria.

Refer to the appropriate specialist depending on cause.
If SIAD, other endocrine condition or cause still not clear refer to Endocrinology.

References:
1. cks.nice.org.uk/hyponatraemia (accessed 23/05/2017).
2. Clinical practice guidelines on diagnosis and treatment of hyponatraemia. European Journal of Endocrinology 2014

For guidance only. If you want to discuss at any stage, the duty biochemist can be contacted via STH switchboard 243 4343.