

Clinical practice guidelines on
diagnosis & treatment of
hyponatraemia

European Journal of
Endocrinology

2014 170 G1-G47

What's new in these guidelines?

- Approach based on symptom severity
- Less reliance on information / prior knowledge, that may not be available
- Less reliance on clinical assessment of volume status, that may be inaccurate
- 'Equations' to guide use of hypertonic saline abandoned in favour of pragmatic approach
- Recommend *against* use of demeclocycline and vasopressin receptor antagonists

Classification of hyponatraemia

Symptoms	Mild Moderately severe Severe
Acute vs chronic	< 48 hours (brain adaptation) (information not always available)
Biochemical severity	Mild 130-135 mmol/L Moderate 125-129 mmol/L Severe <125 mmol/L

Hyponatraemia symptoms

Mild	Gait disturbances, falls, concentration and cognitive deficits
Moderately severe	Nausea, confusion, headache
Severe	Vomiting, somnolence, seizures, cardio respiratory distress, ↓GCS, coma

Start with symptoms

- Severe (or moderately severe) symptoms
- Consider immediate treatment

- No severe / moderately severe symptoms
- Start with diagnostics

- Must consider symptoms and biochemistry in context, and consider other conditions

Check for obvious errors

-sample taken from 'drip' arm.....

Stop obvious precipitants

-stop IVI 5% dextrose
-stop thiazide diuretics

Exclude non-hypotonic hyponatraemia

- CHECK: serum osmolality, glucose
- Most patients with hyponatraemia will have a consistently low measured serum osmolality
- If the measured serum osmolality is not low, consider:
 - Pseudohyponatraemia (rare) lab artefact due to very high concentrations lipids/proteins
 - Hyperglycaemia-induced hyponatraemia
 - Surgical irrigation fluids (TURP)

No acute/severe symptoms

- CHECK urine osmolality and urine sodium concentration
- Urine osmolality ≤ 100 mOsm/kg
 - Suggests relative excess water intake
 - Primary polydipsia ('Evian potomania')
 - Low solute intake (anorexia nervosa, 'tea & toast')
 - Beer potomania

If urine osmolality > 100 mOsm/kg
and urine sodium ≤ 30 mmol/L

- Low effective arterial blood volume
 - If ECF expanded, consider
 - Heart failure
 - Liver cirrhosis
 - Nephrotic syndrome
 - If ECF reduced, consider
 - Diarrhoea & vomiting
 - Prior use of diuretics
 - ‘Third spacing’
 - sepsis, pancreatitis, trauma, bowel obstruction

If urine osmolality > 100 mOsm/kg
and urine sodium > 30 mmol/L

- Consider diuretics / kidney disease
- If no diuretics / kidney disease –
 - Consider SIADH
 - Exclude adrenal insufficiency
(adrenal/pituitary/steroid suppression)
 - Exclude profound hypothyroidism
 - Multiple causes SIADH
 - Lung cancer/other lung disease, CNS, drugs etc.

Management of hyponatraemia with severe symptoms

- ITU level care
- Prompt IVI 150 ml 3% hypertonic saline / 20 minutes
- Check serum sodium whilst repeating
- Aim 5 mmol/L increase in serum sodium in 1st hour
- Pursue diagnostic-approach / specific treatment
- Limit serum sodium increase to 10 mmol/L during 1st 24 hours and 18 mmol/L 1st 48 hours
- Aim serum sodium 130 mmol/L

Management of hyponatraemia with moderately severe symptoms

- Diagnostic assessment and specific treatment
- Consider management with hypertonic saline (as for 'severe')

Osmotic demyelination syndrome

- Associated underlying risk factors
 - Alcohol abuse
 - Liver disease

Management of hyponatraemia with mild symptoms

- Check for obvious errors and stop obvious precipitants
- Diagnostic assessment and cause-specific treatment

Management of patients with SIADH

- Fluid restriction 1st line
- 6-hourly serum sodium till stabilised
- Recommend against
 - Demeclocycline
 - Risks>benefits
 - Lithium
 - Vasopressin receptor antagonists
 - Risks>benefits
 - No proven benefit aside from ↑Na
 - Safety concerns

Clinical practice guidelines on diagnosis & treatment of hyponatraemia

European Journal of
Endocrinology

2014 170 G1-G47

AVAILABLE FREE TO DOWNLOAD FROM EUROPEAN J ENDO WEBSITE!