RACC Euvolemic Hyponatremia Guideline

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Population
- Na Level < 125 mmol/L
- Pt is believed to be euvolemic, i.e. not hypovolemic and not whole-body volume overloaded (cirrhosis, CHF)

Initial Labs
- Chemistry Q 1 H (for 1st 6 hours)
- Hepatic Panel x 1
- Serum Osmolality q2h (for 1st 6 hours)
- Serum Uric Acid x 1
- TSH x 1
- Cortisol x 1
- UA, Urine Osmolality, Urine Cr, Urine Lytes, Urine Urea, Urine Uric Acid q6 hours

Initial Imaging
- If any doubt as to cause of AMS or Seizures, obtain Head CT

Nursing
- Strict I/Os (hourly urine outputs recorded)
- Foley if indicated
- Notify Provider if hourly urine output is > 200 ml
- If drawing blood from the same line as hypertonic saline; turn off the infusion, flush the line, and wait 5 minutes prior to drawing samples after wasting appropriate blood volume.

Consult
- Physician to Physician: Nephrology when patient identified

Initial Medication
- If the patient is seizing or has AMS, Give 3% NaCl, 100 mL IVPB over 10 min x 1 IVPB, peripherally or centrally. If 3% NaCl is not immediately available, administer 50 mls of 8.4% Sodium Bicarbonate (1 amp of Bicarb).

Or
• In neurologically stable patients, Give 3% NaCl, 100 mL IVPB over 20 min x1 IVPB, peripherally or centrally

And simultaneously

• dDAVP 2 mcg IV Stat and Q6 hrs x 4 doses

Assessment after 1st dose of Hypertonic Saline

• If 1-hour Na level < 3 mmol/L increase, give second dose of 3% NaCl 100 mL over 20 min x1 and continue to check Chem 8 Q1H for up to 6 hours;
• If 1-hour Na level ≥3 mmol/L increase, → DO NOT GIVE Additional 3% NaCl
• Send repeat chemistry

Assessment after 2nd dose of Hypertonic Saline, if Given

• If repeat Na level < 3 mmol/L from initial sodium, give third dose of 3% NaCl 100 mL over 20 min x1
• If repeat Na level ≥3 mmol/L from initial sodium, DO NOT GIVE 3% NaCl

Goal is to achieve 3-6 mmol/L increase in Na in the 1st 6 hours
Goal is to increase sodium by no more than 6 mmol/L in the 1st 24 hours

Continued Management

• Plan is to keep patient in the RACC for the first 4-6 hours. Based on patient response and labs, decide on site of admission
• Beware of simultaneous repletion of potassium as this will increase the serum sodium
• Expect urine outputs of <30-40 ml/hr while on dDAVP protocol

Overshoot

If increase more than 6 mmol/L over 1st 24 hours:

• DDAVP 2 mcg IV X1 and then q 6hrs (only if not already administered)
• Administer D5W over 15 minutes. Amount required is calculated based on total body water needed to decrease Na back to ≤ 6 mmol/L from baseline

\[ \text{Mls of D5W} = 600 \times \left[ \text{weight kg} \times \left( \frac{\text{Current Na}}{\text{Desired Na}} - 1 \right) \right] \]

Be aware, potassium supplementation will increase sodium levels
Admission:
- MICU – If symptomatic and/or Na sig. < 125. Place central line and foley catheter
- Medical Floor-If asymptomatic with Na near to 125, admit to Medical floor

Formulas/Calculators:

**Predicted Sodium Calculator-Adroguemadias Formula**

| Change SNa in mmol/L by 100 ml of 3% NaCl | = (51.3 mmol + K mmol) / TBW + 100 |

**TBW Calculator Watson formula**

<table>
<thead>
<tr>
<th>Male: 2.447 - (0.09516 \times \text{age [years]}) + (0.1074 \times \text{height [cm]}) + (0.3362 \times \text{weight [kg]})</th>
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<td>Female: -2.097 + (0.1069 \times \text{height [cm]}) + (0.2466 \times \text{weight [kg]})</td>
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Continued Orders

- MICU – If symptomatic and/or an increase more than 6 mmol/L in 6 hrs, Chem 8 q 2hr, serum osmolality every 4 hr, urine lytes and osmolality every 4 hr X first 24 hrs
- MEDICAL FLOOR – Chem 8 q 4hr, serum osmolality every 6 hr, urine lytes and osmolality every 6 hr X first 24 hrs. Goal: increase no more than 6 mmol/L in 24 hrs; no further rise if already achieved in 6 hrs. Water intake to minimum, Regular diet with no salt restriction