Hypernatremia

serum sodium >145 mEq/L

Symptomatic

Asymptomatic

Onset

Follow up by monitoring sodium level daily

Acute (2)

Hypernatremia occurring in a documented period less than 24 hrs & should

Chronic (2)

Hypernatremia occurring in a documented period more than 24 hrs &

If Persist

Patient Volume Status (3)

Hypovolemic (3)

- Urine Osm > 800mOsm/kg
- (ADH present) (3)

Urine Volume?

Euvolemic (3)

- Urine Osm < 800mOsm/kg
- (ADH absent or ineffective)(3)

Response to arginine vasopressin ?

Hypervolemic (3)

- Hypertonic sodium load Hyperaldosteronism
- Cushings Syndrome

❖ Treatment: Stop saline infusion

❖ Add diuretics to prevent volume overload

❖ consider free water*

<800 ml/day

- Decreased water
- increased insensible losses
- use of diuretics
- GI Loss
- Heat injury. (1)(3)

❖ Treatment: Replace free water* (3)

>1000ml/day

- Osmotic Diuresis
- Mannitol use
- Hyperosmolar non ketotic coma
- Enteral feeding. (1)(3)

❖ Treatment: Address underlying cause
❖ Correct glucose level
❖ Reduce rate of enteral feeds
❖ Replace free water (3)

NO

- Nephrogenic Diabetes Insipidus
- Renal tubular disease
- Chronic loop diuretics
- Electrolyte abnormalities
- Lithium toxicity
- Low sodium diet with thiazide diuretics
- Low protein diet
- NSAIDs. (3)

❖ Treatment: Address underlying cause if possible

YES

- Central Diabetes Insipidus

❖ Treatment: Dose arginine vasopressin at 10-40 µg intranasal TID in divided doses
OR 1-2µg SC /IV BID (3)

❖ After Correction of all underlying causes *

1) Total H_2O deficit (L)= total body water × 1 - $\left[\frac{desired\ Na}{serum\ Na}\right]$

2) Adrogue Formula: Change in serum Na $= \frac{(Infusate\ Na + Infusate\ K) - Serum\ Na}{Total\ body\ water + 1}$

3) The rate of correction should not exceed changes of 0.5 mEq/L/hr in plasma Na over 12-24 hrs. (4) (5)

❖ References:

(1) AAFP
(2) Medscape
(3) The Washington Manual of Critical Care
(4) Applied Therapeutics (The Clincal Use of Drugs)
(5) Medcalc.com
(6) Globalrph.com