DISEASE

HYPERNATREMIA

PATHOPHYSIOLOGY

- Develops when serum Na+ concentrations climb about 145 or when loss of H2O
- Hyperosmolality is a common result
- Water is pulled out of the cell into ECF...cell shrinks!

ECF decreased ——— ICF increases

RISK FACTORS

Relative Sodium Excess due to Decreased Fluid Volume

- Water deprivation
- Hypertonic enteral feedings
- Diabetes Insipidus
- Heatstroke
- Hyperventilation
- Watery stool (diarrhea)
- Burns
- Excessive sweating

Actual Sodium Excess

- Kidney failure
- Chronic renal failure
- Cushing's Syndrome
- Aldosteronism
- Some medications (such as glucocorticosteroids)
- Increased Na+ intake
- Excessive sodium bicarb use

CLINICAL MANIFESTATIONS

- Thirst
- Vitals: hyperthermia, tachycardia, orthostatic hypotension
- Neuromusculoskeletal: restlessness, irritability, muscle twitching to the point of muscle weakness, including respiratory compromise, decreased or absent DTRs, seizures, coma, irregular muscle contractions
- GI: dry mucous membranes, nausea, vomiting, anorexia, occasional diarrhea
- Altered cerebral function
- Renal: decreased urinary output
- Integumentary: dry and sticky tongue, dry and flushed skin

DIAGNOSTICS

LABORATORY TESTS

- Blood (serum) sodium: increased to greater than 145 mEq/L
- Blood (serum) osmolality: increased to greater than 300 mOsm/L
- Urine specific gravity: increased

MEDICATIONS

- Administer diuretics (loop diuretics) for clients who have poor kidney excretion
- DDAVP therapy

NURSING INTERVENTIONS & PATIENT TEACHING

NURSING CARE

- Monitor LOC and ensure safety
- Monitor vitals and heart rhythm
- Auscultation lung sounds
- Provide oral hygiene and other comfort measures to decrease thirst
- Monitor I&O and alert the physician of inadequate urinary output
- Encourage water intake
- Hypotonic or non-saline isotonic IV fluid

PATIENT EDUCATION

- Weigh daily and notify the provider if a 1- or 2-lb gain in 24-hrs or 3-lb gain in 1 week
- Consume a low-sodium diet, read food labels for sodium content, and keep a record of daily sodium intake
- Adhere to fluid intake as prescribed
- Over-the-counter medications that contain sodium bicarbonate can increase sodium levels
- Use salt substitutes

POSSIBLE COMPLICATIONS

SEVERE HYPERNATREMIA

- Seizures, convulsion, and death can result from acute hypernatremia if not treated immediately
- Nursing actions:
  - Maintain open airway, and monitor vital signs
  - Implement seizure precautions, and take appropriate action if seizures occur
  - Monitor LOC