Hyponatremia Treatment Guidelines 11/03

Overview
  - Most patients are stable and require no acute Rx
  - Most common cause is diuretic use, low NaCl diet, in a CHF pt.
  - Severe hyponatremia <110 or symptomatic <120 requires Rx
  - Brain injury
    - Edema induced – increased ICP
    - Rx induced (correcting too fast) – demyelinization (? etiology)

History
  - What are the Sx?
  - What was the time course for the Na drop?
  - What is the absolute Na value

Categories
  - **Pseudohyponatremia**
    - Hyperglycemia – Na drops ~2 per Gluc rise of 100
    - Hyperlipidemia
    - Lab error (drawn above an IV)
  - **Hyponatremia with dehydration**
    - Body loss – vomiting, diarrhea, 3rd space
    - Renal loss – diuretics, adrenal insuff, RTA
    - Get a urinary Cl if < 10-20 = dehydration, if > 20 = renal wasting or adrenal – not dehydration
    - Hypo Na + Hyper K + adrenal insuff
    - Treat NSS – 500-1000cc until BP OK then ~200/hr, check Na Q 2hr
  - **Hyponatremia with increased total body water**
    - SIADH - ADH is the antidiuretic hormone
    - Inc ADH = incr H2O = incr Na (usually no edema, ascites, chf)
      - Causes – lung->pneumonia, Ca TB, Abscess, CNS, Drugs-thiazides, oral hypoglycemics, narcotics, Cancer meds, others
    - Psychogenic polydipsia
    - Hypothyroidism
    - Diuretics w/ mild CHF
    - Treatment
      - Asymptomatic-> water restriction for increased TBW, NSS for dehydration
      - If severe Sx – ALOC, Sz, hypertonic saline + lasix (salt in, water out)
      - Remember to replace K
      - Use hypertonic saline 3% @ max rate 100cc/hr (1cc/kg/hr) for 2 hours only
        - Only if new AMS, Sz
        - Lasix 20mg – blocks ADH
        - Correct @ rate of 0.5 meq / hr (unless using hypertonic saline), max of 10-12meq/day
          - Recheck lytes Q 2hours
          - DO NOT CORRECT BACK TO NORMAL IN THE ED
  - **Hyponatremia with increased total Na and total body water**
    - CRF, CHF, Hepatic Failure
    - Treat underlying problem
    - Avoid NS of Hypertonic saline

Complications
  - **Central Pontine Myelinosis (CPM)**
    - Paralysis, dysarthria, dysphagia, hypotension
    - Cause by rapid correction of Na

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Hypernatremia

Overview
- In adults it is due to total body water deficit
- Cellular dehydration cause ALOC
- Fix hypotension

Categories
- Hypernatremia w/ dehydration and low total body Na
  - Heat stroke, diarrhea, osmotic diuresis – glucose, mannitol, enteral feedings
  - Treatment- NS until hemodynamically stable then 1/2NS @100cc/hr
  - Lower Na by 0.5meq/hr once volume is restored
- Hypernatremia w/ low total body water and normal total Na
  - Diabetes insipidus, elderly w/ reset osmostat, hypothalamic dysfunction
  - Treatment- 1/2NS or PO fluids
  - DDAVP for DI
- Hypernatremia w/ normal total body water and increased total Na
  - Salt tablets, NSS infusion, IV NaBicarb, Feeding error, Cushings
  - Treatment –po water, D5W or 1/2NS, Dialysis if CRF

3% Na saline = 513mmol/l