**MHS HBS Hyponatremia Acute & Chronic IP - Created 2019-11**

**----------------------BEGINNING OF THE ORDERSET----------------------**

[HTML]

1. **Exclude pseudohyponatremia**
	1. Uterine or bladder surgery, administration of IVIG, lipemia, jaundice, myeloma
2. Determine **Timing** of hyponatremia:
	1. **Acute**: <48 hours duration (usually self-induced water intoxication or excessive post-operative ADH secretion associated with IVF administration)
	2. **Chronic**: >/=48 hours duration
3. Determine **severity of hyponatremia**:
	1. **Mild**: 130-134mEq/L
	2. **Moderate**: 120-129mEq/L
	3. **Severe**: <120mEq/L
4. Determine **severity** **of symptoms**:
	1. **Asymptomatic**
	2. **Mid to moderate** (headache, fatigue, lethargy, nausea, vomiting, dizziness, gait disturbance, confusion, muscle cramps)
	3. **Severe** (seizures, coma, obtundation, respiratory arrest)
5. **Goals** of therapy**:**
	1. Prevent further decline in serum Na
	2. Prevent brain herniation due to hyponatremia
	3. Relieve symptoms of hyponatremia
	4. Prevent overly rapid correction of Na, risk of pontine myelinolysis
6. **General Measures**
	1. Identify and treat the **underlying cause** of hyponatremia
	2. Identify **drugs** taken by the patient that could contribute to hyponatremia. Discontinue those drugs unless there is no reasonable substitute and stopping the medication would cause serious harm
	3. **Reduce intake** of electrolyte-free water (impose fluid restriction, eliminate IV hypotonic fluids, increase dietary salt)

[SECTION] **INITIAL EVALUATION**

[ ] ADD-ON TSH, LFT, Uric Acid, Serum Osmolality; if QNS - DRAW STAT

[ ] Urine Osmolality

[ ] Urine Sodium

[ ] Urine Creatinine

[ ] Urine Urea

[ ] Urinalysis, reflect micro

[ ] Cortisol, AM

[ ] Diet, regular

[SECTION] **ACUTE HYPONATREMIA (<48 hours)**

[HTML] Usually self-induced water intoxication or excessive post-operative ADH secretion associated with IVF administration

**/\* BEGIN SINGLE SELECT NESTED PANEL Acute Hyponatremia \*/**

( ) Symptomatic, Acute Na <130mEq/L; Goal to resolve symptoms AND increase Na by 4-6 mEq/L

[X] 3% NaCl - 100ml IV Bolus ONCE **Admin instructions:** Administer over 20 minutes. Pharmacy to prepare exact dose.

[X] Sodium, Serum STAT **ONCE OFFSET +1 HOUR** “Recheck Na after 3% NaCl bolus; If Na fails to rise by 4mEq/L, repeat 3% NaCl 100ml bolus x1”

[X] 3% NaCl - 100ml IV Bolus ONCE **PRN** **Comment:** If Na fails to rise by 4mEq/L after the first bolus” **Admin instructions:** Repeat 100ml bolus if Na fails to rise by 4mEq/L after the first bolus. Administer over 20 minutes. Pharmacy to prepare exact dose.

 [X] Sodium, Serum q4h STAT x6

[X] Neuro checks q2 hours x24 hours;

( ) Asymptomatic, Acute Na <130mEq/L; Goal to increase Na by 4-6 mEq/L

[X] 3% NaCl - 50ml IV Bolus ONCE **Admin instructions:** Administer over 20 minutes. Pharmacy to prepare exact dose.

[X] Sodium, Serum STAT **ONCE OFFSET +1 HOUR Comment:** “Recheck Na after 3% NaCl bolus; If Na fails to rise by 4mEq/L, repeat 3% NaCl 50ml bolus x1”

[X] 3% NaCl - 50ml IV Bolus ONCE **PRN** **Comment:** If Na fails to rise by 4mEq/L after the first bolus. **Admin instructions:** Repeat 50ml bolus if Na fails to rise by 4mEq/L after the first bolus. Administer over 20 minutes. Pharmacy to prepare exact dose.

[X] Sodium, Serum q6h x4

[X] Neuro checks q4 hours x24 hours;

**/\* END SINGLE SELECT NESTED PANEL Acute Hyponatremia\*/**

[SECTION] **CHRONIC HYPONATREMIA (>/=48 hours)**

[HTML] **CONTRAINDICATIONS** to hypertonic saline protocol include: CHF, liver failure, severe volume overload, chronic SIADH, or psychogenic polydipsia. Consult Nephrology for the above diagnoses.

**/\* BEGIN SINGLE SELECT NESTED PANEL Chronic Hyponatremia\*/**

**( )** Severe symptoms, Chronic Na <120mEq/L

 [ ] Transfer to ICU

[ ] Critical Care consult “Severe hyponatremia”

 [ ] Nephrology consult “Severe hyponatremia”

[X] Fluid restriction 1000ml/day

[X] Neuro checks q2 hours x48 hours;

[X] 3% NaCl - 100ml IV Bolus ONCE. **Admin instructions:** Administer over 20 minutes. Pharmacy to prepare exact dose.

[X] Sodium, Serum STAT ONCE **OFFSET +1 HOUR** “Recheck Na after 3% NaCl bolus; If Na fails to rise by 4mEq/L, repeat 3% NaCl 100ml bolus x1”

[X] 3% NaCl - 100ml IV Bolus ONCE **PRN** **Comment:** If Na fails to rise by 4mEq/L after the first bolus” **Admin instructions:** Repeat 100ml bolus if Na fails to rise by 4mEq/L after the first bolus. Administer over 20 minutes. Pharmacy to prepare exact dose.

[X] 3% NaCl - Continuous infusion **0.2ml/kg/hr** x48 hours; **COMMENT:** Max starting dose **30ml/hr.** DC when Na >125mEq/L

[X] DDVAP **1mcg** IV q8hours x48 hours; COMMENT: “If urine output >30ml/hr x 2 consequtive hours, increase dose to **2mcg**; Discontinue DDVAP when Na >125mEq/l”

[X] Sodium, Serum q2h x4 STAT; “NOTIFY MD if Na increases by >6mEq/L in 24 hours”

[X] Sodium, Serum q4h x10 *(OFFSET +8 HOURS)*; “NOTIFY MD if Na increases by >6mEq/L in 24 hours”

**( )** Mild-moderate symptoms, Chronic Na <120mEq/L

 [X] Fluid restriction 1000ml/day

[X] Sodium, Serum q4h x12; COMMENT “NOTIFY MD if Na increases by >6mEq/L in 24 hours, or >4mEq/L in 12 hours”

[X] Neuro checks q4 hours x 48 hours

[X] 3% NaCl - Continuous infusion **0.2ml/kg/hr**/hr x48 hours; **COMMENT:** Max starting dose **30ml/hr.** DC when Na >125mEq/L

**( )** Asymptomatic,Chronic Na <120mEq/L

 [X] Fluid restriction 1000ml/day

[X] Sodium, Serum q6h x8; COMMENT “NOTIFY MD if Na increases by >6mEq/L in 24 hours”

 [X] Neuro checks q6 hours x 24 hours

 [ ] NaCl Salt Tabs 1gm PO QID

**( )** Asymptomatic,Chronic Na 120-129mEq/L

 [X] Fluid restriction 1500ml/day

 [X] Sodium, Serum q12h x4

**/\* END SINGLE SELECT NESTED PANEL Chronic Hyponatremia\*/**

[ ] KCL 20mEq PO TID INCLUDE NOW; COMMENT “FOR K<3.5”

[ ] KCL 20mEq IV ONCE; COMMENT “FOR K<3”

[ ] Nephrology consult COMMENT: “\*\*\*”

**----------------------END OF THE ORDERSET----------------------**

**Approvals**

**[X] Dept of Medicine 10/31/2019**

**[X] P&T/Pharmacy 11/15/2019**

**[X] ICU 10/31/2019**

**[X] CPC/Nursing 10/31/2019**

