Syndrome of inappropriate antidiuretic hormone secretion treatment

- Mumps Vaccine-Associated Aseptic Meningitis Complicated by Syndrome of Inappropriate Antidiuretic Hormone Secretion
- Miller Fisher Syndrome With Syndrome of Inappropriate Antidiuretic Hormone Secretion: A Case Report
- Effects of psychological and physiological factors in perioperative thirst discomfort trajectories in endonasal transsphenoidal surgery: a prospective cohort study
- Cisplatin-induced Severe Renal Salt-wasting Syndrome Complicated with Hypovolemic Shock and Various Electrolyte Abnormalities in a Patient with Thymoma: A Case Report
- From Brew to Bronchoscopy: A Case of Hyponatremia That Was Anything but Basic
- Severe hyponatremia due to trimethoprim-sulfamethoxazole: a case report
- Drug-induced hyponatremia in clinical care
- Severe hyponatremia in a mild COVID-19 patient: diagnostic challenges of SIADH and adrenal insufficiency

Management

Management is based on the severity and duration of hyponatremia, and the presence of symptoms.

Two caveats:

1. be sure that hyponatremia is not due to CSW before restricting fluids.

2. avoid too rapid correction and avoid correcting to normal or supranormal (overcorrection) sodium to reduce the risk of osmotic demyelination syndrome.

The only definitive treatment is treatment of the underlying cause

● if caused by anemia: usually responds to transfusion.

● if caused by malignancy, may respond to antineoplastic therapy.

● most drug-related cases respond rapidly to discontinuation of the offending drug.

Aggressive treatment protocol.

Indications

1. severe hyponatremia (serum [Na+]<125 mEq/L).

2. AND either

a) duration known to be <48 hours

b) or severe symptoms (coma, seizures).

Treatment

● transfer patient to ICU.

3% saline: start infusion 1–2 ml/kg body weight per hour (infusion rate may be doubled to 2– 4 ml/kg/hr for limited periods in patients with coma or seizures) [1] and furosemide (Lasix®) 20 mg IVq d (furosemide accelerates the increase in [Na+] and prevents volume overload with subsequent increase in atrial natriuretic factor and resultant urinary dumping of the extra Na+ being administered).

● monitoring and adjustments

○ Check serum [Na+] every 2–3 hours and adjust infusion rate of 3% saline

– goal: raise serum sodium by 1–2 mEq/L/hr [2] (use the lower end of the range for hyponatremia > 48 hours duration or unknown duration)

– limits: do not exceed 8–10 mEq/Lin 24 hrs and 18–25 mEq/Lin 48 hrs [3] (use the lower end of these ranges for hyponatremia >48 hours duration or unknown duration)

measure K+ lost in the urine and replace it accordingly

○ if symptoms of osmotic demyelination occur (early symptoms are lethargy and affective changes, usually after initial improvement): deficits may improve by stopping treatment and modestly relowering the serum sodium e.g. with DDAVP [4] [5].

Intermediate treatment protocol.

Indications

1. symptomatic non severe hyponatremia (serum [Na+]=125–135mEq/L),or

2. severe hyponatremia (serum [Na+]<125 mEq/L),AND

a) duration >48 hours or unknown AND

b) only moderate symptoms or nonspecific symptoms (e.g. H/A, or lethargy)

Treatment

1. interventions

a) 0.9%saline (normal saline) infusion

b) and furosemide(Lasix®)20 mgIV q d

c) consider conivaptan for refractory cases

2. monitoring: check serum [Na+] every 4 hours and adjust infusion rate of normal saline

goals: [Na+] increase of 0.5–2 mEq/L/hr

limits: do not exceed 8–10 mEq/Lin 24 hrs and 18–25 mEq/Lin 48 hrs [6]

Routine treatment protocol and maintenance therapy.

Indications : asymptomatic nonsevere hyponatremia (serum [Na+]=125–135 mEq/L),or severe hyponatremia (serum [Na+]<125 mEq/L) AND

a) duration >48 hours or unknown AND

b) asymptomatic

Treatment 1. interventions

a) fluid restriction for adults, for peds: 1 L/m2/day) while encouraging use of dietary salt and protein. Caution restricting fluids in hyponatremia following SAH.

b) for refractory cases, consider

● demeclocycline: a tetracycline antibiotic that partially antagonizes the e ects of ADH on the renal tubules [7] [8] [9]

Effects are variable,and nephrotoxicity may occur.300–600 mg POBID

● conivaptan (Vaprisol®): a nonpeptide antagonist of V1A & V2 vasopressin receptors. FDA approved for euvolemic and hypervolemic moderate-to-severe hyponatremia in hospitalized patients (NB: severe symptoms of seizures, coma, delirium… warrants aggressive treatment with hypertonic saline [10].

Use in the neuro-ICU has been described for treating elevated ICP when serum [Na] is not responding to traditional methods [11] (off-label use – use with caution). loading dose of 20 mg IV over 30 minutes, followed by infusions of 20 mg over 24 hours × 3 days. If serum [Na+] is not rising as desired, the infusion may be increased to the maximal dose of 40 mg over 24 hours. Use is approved for up to 4 days total. Caution re drug interactions

● lithium: not very effective and has many side effects. Not recommended

References

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