Psychogenic Polydipsia: Diagnosis and Treatment

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Introduction

Patients with psychogenic polydipsia (PP) consume excessive amounts of water, making their blood dangerously dilute. This condition is surprisingly common, with a prevalence of 3%–25% in institutionalized patients. You'll see it most often among patients with schizophrenia, but it also occurs in patients with mood and anxiety disorders.

Diagnosing Psychogenic Polydipsia

- Clinical manifestations
    - Suspect PP in patients who often complain of thirst or repeatedly request or consume large amounts of water.
    - Neuropsychiatric manifestations of hyponatremia (a consequence of water intoxication) include nausea, headache, cramping, dysarthric speech, lethargy, and confusion. Seizures and delirium occur in extreme cases.

- Labs
    - Obtain a basic metabolic panel
        - Sodium will be low (< 135 mEq/L)
    - Obtain a urine sample for urine sodium and osmolality
        - Urine osmolality will be low (< 100 mOsmol/kg)
        - Urine sodium will be low (<10 mEQ/L)

Differential diagnosis

- Diabetes mellitus:
    - The primary problem is hyperglycemia, which leads to polyuria because excess glucose in the urine draws excess water along with it. The excess thirst is a result of the dehydration caused by the polyuria.
    - The key diagnostic features are hyperglycemia and glucosuria (glucose in the urine)—neither of which occur in PP.
- Diabetes insipidus:
    - The primary problem is inadequate production/response to antidiuretic hormone (ADH).
    - Urine is dilute, but unlike PP, serum sodium will be high as the serum is concentrated from free water loss.
- Syndrome of inappropriate antidiuretic hormone secretion (SIADH).
    - The primary problem is too much ADH, caused by medications including oxcarbazepine, carbamazepine, and serotonergic antidepressants.
    - The kidneys absorb excessive water, so serum sodium levels will be low, but urine will be concentrated, unlike in PP.

Treatment

- Water restriction
    - The most important treatment strategy for psychogenic polydipsia (PP) is fluid restriction, which is harder than it sounds. Patients with PP are often highly driven to consume water. If you try to limit their water intake, they may find surreptitious ways of drinking water (e.g, from the toilet or sink).
    - Limit water to 1000-1500 mL / day; this will quickly resolve hyponatremia
    - Patients may need 1:1 supervision if you suspect they are drinking water surreptitiously.
- Sodium supplementation
    - Prescribe sodium chloride tablets, 1-3 g daily
- Discontinue certain medications
    - Some medications exacerbate PP—these are typically anticholinergic antipsychotics that cause dry mouth, such as chlorpromazine, diphenhydramine, and tricyclic antidepressants. In response, patients may drink more water.
- Transfer to medicine floor
    - In severe cases, with serum sodium levels in low 120s or below, patients will require transfer to a medicine unit for closely monitored sodium repletion using IV saline (a 3% saline solution, rather than the usual 0.9%)
- Long-term treatment
    - There's no established long-term treatment for PP, but naltrexone 50 mg daily may help.