INTRODUCTION: Psychogenic or primary polidipsia characterized by excessive thirst and compulsive water drinking is a common problem among psychiatric populations, affecting 6% to 20% of patients. Symptoms of hyponatremia may range from increased psychotic symptoms to seizures, coma and even death.

CASE: A 21 year old male patient referred to emergency unit of our hospital with loss of consciousness. In his laboratory tests showed that he had hyponatremia 117 mmol L^{-1}. Medical testing ruled out all medical conditions known to be etiologically related to hyponatremia including pituitary tumor, paraneoplastic syndrome and syndrome of inappropriate antidiuretic hormone. In his psychiatric assessment, he was diagnosed with Psychogenic Polidipsia. After 3 days of hospitalization, he was discharged with serum sodium of 141 mmol L^{-1} with his psychiatric drugs and outpatient behavioral treatment was suggested.

CONCLUSION: Psychogenic polydipsia should be kept in mind in symptomatic hyponatremia patients with a variety of symptoms ranging from headache to encephalopathy or even death. Medical and behavioral treatments both have importance for treatment of this syndrome.

KEY WORDS: Hyponatremia; Water Intake; Psychology

ÖZET

Giriş: Psikojenik veya primer polidipsi aşırı derecede suya ve kompulsif su içme ile giden psikiatrik hastalarda %6’dan %20’ye kadar sıkıktaki olan bir problemdir. Hiponatremi semptomları artış psikotik semptomlardan nöbetlere, koma, hatta ölüme sebebiyet verebilir.


Sonuç: Semptomatik hiponatremi hastalarında, baş ağrısından ensefalopatiye hasta ölüm kadar semptom verebildiğinden psikojenik polidipsi akılda tutulmalıdır. Medikal ve davranışsal tedavinin bu sendromun tedavisinde önemi büyük advisor.
INTRODUCTION

Psychogenic or primary polidipsia characterized by excessive thirst and compulsive water drinking is a common problem among psychiatric populations, affecting 6% to 20% of patients (1). Excessive oral fluids consumption over a short period of time may lead to hyponatremia, which sometimes causes confusion and seizures (2-3). It was first noted as a complication of severe mental illness in the 1930’s (4). This is a frequent phenomenon in chronic psychiatric patients, particularly those with schizophrenia (5). These patients became unable to excrete all of the ingested fluids, leading to dilutional hyponatremia and water intoxication. Symptoms of hyponatremia can range from increased psychotic symptoms to seizures, coma and even death. This state has been termed ‘psychosis, intermittent hyponatremia and polydipsia (PIP Syndrome)’ (6). We have reported a patient who was referred to the emergency unit of our hospital with loss of consciousness, and diagnosed with PIP syndrome.

CASE

A 21 year old male patient was referred to the emergency unit of our hospital with loss of consciousness. He was admitted to intensive care unit. His physical examination revealed with normal vital signs in spite of his agitation. He did not have edema, signs of dehydration or fever. He had neither experienced any head injury nor visited a hospital for this reason earlier. In his laboratory tests showed that he had hyponatremia 117 mmol L⁻¹. His blood urea nitrogen was 12 mg dL⁻¹ and serum creatinine was 1.1 mg mL⁻¹. Serum K⁺ level was 3.5 mEq L⁻¹. No abnormalities was found in cranial laboratory tests during intensive care unit (117, 120, 123, 124 mmol L⁻¹).

Medical testing ruled out all medical condition known to be etiologically related to hyponatremia including pituitary tumor, paraneoplastic syndrome and secretion of inappropriate antidiuretic hormone. When he became concious, he admitted excessive water intake and his depression. In his psychiatric assessment, he was diagnosed with Psychogenic Polidipsia. Internal diseases doctor advised fluid restriction so he was supplemented with saline intravenously infused at 60 mL hr⁻¹ and his serum concentration returned to 141 mmol L⁻¹ on the third day. His medical instructions also included Norodol (haloperidol) 3x5 gutts and Akineton (Biperiden laktat /Abbott) 5 mg (1x1) i.m and Lustral (Sertralin/Pfizer) 100 mg 1x1. He was discharged the third day of treatment with serum sodium of 141 mmol L⁻¹ with his psychiatric drugs and outpatient behavioral treatment was advised to the patient.

DISCUSSION

Hyponatremia develops when free water intake exceeds free water excretion. Excess water intake reduces plasma osmolality and sodium suppressed antidiuretic hormone secretion initiating a cascade of reduced water reabsorption in the distal nephron decreasing urine osmolalite to a minimum of 50-60 mOsm kg⁻¹ (6). Water intoxication usually happens in patients with psychiatric problem who are subject to compulsive water ingestion. It is seldom observed in ordinary people (7). Our patient also had depression and was using sertralin for this disorder. Water intoxication causes headache, blurred vision, muscle cramps, confusion, letargy, delirium, seizure and coma. Since it may cause brain edema and coma, it can be mortal. When Na concentration gets lower than 125 mmol L⁻¹ biperinatremic encephalopathy and neurological symptoms begin (8). It is important to consider water intoxication as a cause of hyponatremia in a patient without signs of dehydration but one should rule out all medical conditions known to be related to hyponatremia.

Some authors think that polydipsia is due to anticholinergic side effect of some psychiatric drugs (9). Some others claim that since excess water intake periods are correlated with psychotic exacerbations, psychosis and polydipsia might have similar physiopathologic mechanisms (9). Skar and Schrier (10) suggest that supraoptic nuclei of hypothalamus which secrets ADH, plays an important role in the ethiology of psychiatric diseases and fluid electrolyte balance. Thirst and drinking are controlled by lateral hypothalamus. Dopamin is an important neurotransmitter in this region. In animal experiments it has been shown that the dopaminergic activity is related with polydipsia (11). Lesions created in lateral hypothalamus causes adipsia and afagia. Injections of dopamine to lateral ventricules or apomorfin to hypothalamus causes thirst. Injection of a dopamin antagonist haloperidol to lateral hypothalamus blocades the need for water intake (9). Also haloperidol is used in some psychiatric diseases treatment (12). In our patient we used haloperidol to regrese his depression, psychiatric symptoms and his polydipsia and poliuria. This might be related to antidopaminergic effect of haloperidol. We also used sertralin and biperiden for his treatment.
Vieweg et al (6) treated PIP syndrome using lithium and phenytoin, Leon et al (5) and Verghese at al (13) treated a schizophrenia patient with PIP syndrome with clozapine, but in our case we used haloperidol, biperiden, sertralin and behavioral treatment in our treatment modalities.

There are two recorded treatments for PIP syndrome: behavioral management and pharmacological interventions (13). Involuntary fluid restriction has been found to be effective in inpatient settings but it is less feasible in outpatient clinical settings. Behavioral management of fluid intake is an important focus of intervention and there is a report (14) on successful behavioral treatment of an outpatient with psychogenic polydipsia in which there was no attempt to restrict fluid intake.

In Constanza et al’s (1) study they treated a schizophrenia patient with PIP syndrome with water restriction and behavioral treatment programme with self monitoring which she could record in a booklet the time, type of fluid, amount and situation or activity for each beverage consumed which was very useful, and which also showed us the importance of behavioral treatment that we also used in our treatment modalities.

In Leadbetter et al’s (4) study fluid restriction is advised in short term therapy and long term treatment includes a medication management (includes anxiolitic, antipsychotic treatment) which increases patient awareness and self monitoring, but if this treatment is not effective they also add lithium to their treatment modalities. However, in our case haloperidol, sertralin and biperiden were found to be effective for our patient for insetting treatment modalities. In our case we used fluid restriction and medical treatment in hospital and in outpatient settings medical and behavioral treatment was used for the maintenance treatment of the patient.

Psychogenic polydipsia should be kept in mind in symptomatic hyponatremia patients with a variety of symptoms ranging from headache to encephalopathy or even death. Medical and behavioral treatments both have importance for treatment of this syndrome.

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