

## Psychogenic Polydipsia Responding to Oxcarbazepine: A Case Presentation

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**Abstract:** Psychogenic polydipsia, characterized by excessive water intake without physiological stimulus seems to be associated with mood disorders, mental retardation, alcohol dependency, postencephalitic syndromes, organic mental disorders, anorexia nervosa and personality disorders. This case presentation aims at discussing the diagnostic spectrum for psychogenic polydipsia over a case of psychogenic polydipsia responding to oxcarbazepine.

**Keywords:** Psychogenic polydipsia, Oxcarbazepine

### INTRODUCTION

Psychogenic polydipsia is a clinical entity characterized by excessive water intake without physiological stimulus [1]. Psychogenic polydipsia seems to be associated with mood disorders, mental retardation, alcohol dependency, postencephalitic syndromes, organic mental disorders, anorexia nervosa and personality disorders [2]. It is seen in 6 to 20% of psychiatric inpatients, most frequently in schizophrenia (80%) [3]. Cases which benefit from fluid restriction, clonidine, enalapril, propranolol, lithium and clozapine are present in the literature [4-7]. Oxcarbazepine is an anticonvulsant used in mood disorders as a mood stabilizer for relapse prevention in addiction treatment and in impulse control disorders since 1980's [8]. This case presentation aims at discussing the diagnostic spectrum for psychogenic polydipsia over a case of psychogenic polydipsia responding to oxcarbazepine.

### CASE REPORT

A 59-year-old female patient was assessed in the outpatient clinic with the complaint of excessive water intake. The patient had been seen in an internal medicine clinic 3.5 years ago with complaints of excessive water intake and polyurea. Organic tests had revealed no abnormality and the patient had been referred to the psychiatry clinic with the preliminary diagnosis of 'psychogenic polydipsia'. The patient stated that she had started to feel thirsty and started to drink excessive amounts of water following a stressful experience 3.5 years ago. From that day on she has been drinking 6-7 litres of water and could not stop her urge to drink. She stated the reason for her excessive water intake as 'Relaxing, stilling the strangulation feeling, lessening the burning feeling'. Later on the course of the disorder the patient continued to drink

excessively despite the absence of the sense of strangulation and the burning feeling. She stated that she knew that this behaviour was wrong but she was unsuccessful at stopping herself from doing it. She felt a sudden relief and a sense of pleasure after drinking. Despite drinking continuously she could not quench her thirst. The patient had been admitted to the psychiatry outpatient clinic 1 year after the onset of the symptoms. She had been given escitalopram 20 mg per day, lamotrigine 200 mg per day and aripiprazol 15 mg per day. Pharmacotherapy was continued for 6 months. Risperidone and olanzapine were added to the treatment regime respectively but the patient had not benefited from treatment. During the examination her blood pressure was 120/90 mmHg and her pulse 81 beats per minute. Physical examination was considered normal. Fasting blood glucose, blood antidiuretic hormone level and kidney and liver function tests were normal. Serum sodium was found to be 135 mmol/L and serum potassium 3.2 mmol/L. Urine density was 1003, considered as mildly low. 24-hour urine volume was 12 litres. EEG, EKG, cranial magnetic resonance imaging and pituitary and sella turcica magnetic resonance imaging tests were normal. Organic aetiology was ruled out by consultations to an internal medicine specialist and a neurologist. The patient's affect was anxious and she had depressive thought content due to her complaint. Hamilton Depression Rating Scale score was 18, Hamilton Anxiety Rating Scale score 21 and Beck Anxiety Inventory score 20. Yale-Brown Obsessive-Compulsive Scale score was 12 for obsessions and 15 for compulsions, with a total score of 27.

The patient's condition was diagnosed as Major Depressive Disorder (MDD). Pharmacotherapy was continued as escitalopram 40 mg per day,

risperidon 2 mg per day and lamotrigine 200 mg per day. Behavioral methods such as water intake follow-up list were applied but excessive water intake continued with the same severity. After 6 months risperidon and lamotrigine were discontinued due to the amelioration of depressive symptoms. Oxcarbazepine was added to the regime due to the persistence of excessive drinking behaviour. Oxcarbazepine dose was gradually increased to 600 mg per day. After 10 days on this dose the patient reported a complete remission of polydipsia and polyurea and that she felt very well. Her mood continues as euthymic, without excessive water intake in a follow-up of 2 years.

## DISCUSSION

This case defines the clinical picture of psychogenic polydipsia accompanying MDD. Case presentations of psychogenic polydipsia in different psychiatric disorders are present in the literature [9-13]. Aetiology is not certain. Hyperactive dopaminergic system was reported as a probable mechanism [14]. Also genetic mechanisms and the absence of serotonergic stimulation may lead to polydipsia [4, 9]. In the case presented herein physical examination and laboratory tests revealed no organic pathology.

Psychogenic polydipsia, although not quite rare in psychiatric disorders, is not included in the DSM (The Diagnostic and Statistical Manual of Mental Disorders) diagnostic system. The fact that DSM and ICD (International Classification of Diseases) does not include psychogenic polydipsia causes difficulty in the assessment and treatment of the disorder. Kaya *et al.* [16] reported a case of OCD (Obsessive-Compulsive Disorder) in which psychogenic excessive water intake could be a variant of OCD or could be considered among impulse control disorders.

The excessive drinking behaviour presented in this case may be thought to have both compulsive and impulsive characteristics. Compulsive overeating, gambling, alcohol and substance addiction and impulse control disorders such as kleptomania and pyromania may have compulsive features. But whereas compulsive behaviour increases anxiety, impulsive behaviour usually elicits pleasure [17]. Thus, the quenching of thirst with excessive water intake in the presented case suggests a similarity with impulse control disorders. Response to oxcarbazepine may suggest a similarity with impulse control disorders such as compulsive shopping, compulsive sexual behaviour, compulsive self mutilation and skin picking, classified under Impulse Control Disorders Not Elsewhere Classified in the DSM system.

The diagnosis and management of psychogenic polydipsia is crucial because it causes hyponatremia and other serious complications. The presented case

was not complicated with hyponatremia or other secondary conditions and responded well to oxcarbazepine. A review of the literature did not reveal any case presentation of compulsive water intake responding to oxcarbazepine.

## CONCLUSION

The description of compulsive water intake as a disorder other than a symptom accompanying other psychiatric disorders will open the way for etiologic investigation and the presentation of cases in treatment will lead to an increase in awareness about psychogenic polydipsia.

## REFERENCES

1. Delva NJ, Crammer JL; Polydipsia in chronic psychiatric patients. Body weight and plasma sodium. *Br J Psychiatry*, 1988;152: 242-245.
2. Mercier-Guidez E, Loas G; Polydipsia and water intoxication in 353 psychiatric inpatients: an epidemiological and psychopathological study. *Eur Psychiatry*. 2000;15(5): 306-311.
3. Evenson RC, Jos CJ, Mallya AR; Prevalence of polydipsia among public psychiatric patients. *Psychol Rep.*, 1987; 60: 803-807.
4. Dundas B, Harris M, Narasimhan M; Psychogenic polydipsia review: Etiology, differential, and treatment. *Curr Psychiatry Rep.*, 2007; 9: 236-241.
5. Moritz ML, Ayus JC; The pathophysiology and treatment of hyponatremic encephalopathy: An update. *Nephrol Dial Transplant.*, 2003; 18: 2486-2491.
6. Greendyke RM, Bernhardt AJ, Tasbas HE, Lewandowski KS; Polydipsia in Chronic Psychiatric Patients: Therapeutic Trials of Clonidine and Enalapril. *American College of Neuropsychopharmacology*, 1998; 18: 272-281.
7. Altındağ A, Yanık M, Nebioğlu M; Psychogenic polydipsia in bipolar disorder: A case report. *Bulletin of Clinical Psychopharmacology*, 2004; 14: 79-82.
8. Schachter SC; Oxcarbazepine: current status and clinical applications. *Experimental Opinions of Investigative Drugs*, 1999;8: 1-10.
9. Oades RD, Daniels R; Subclinical polydipsia and polyuria in young patients with schizophrenia or obsessive-compulsive disorder versus normal controls. *Prog Neuropsychopharmacol Biol Psychiatry*, 1999; 23(8):1329-1344.
10. Sethi S, Bhargava SC; Compulsive water drinking in adolescents: Report of two cases. *Journal of Pediatric Neurology*, 2006; 4: 57-59.
11. Singh H, Linas SL; Compulsive water drinking in the setting of anticholinergic drug use: on unrecognized cause of chronic renal failure. *Am J Kidney Dis.*, 1995; 26(4):586-589.
12. Deas-Nesmith D, Brewerton TD; A case of fluoxetine-responsive psychogenic polydipsia: a

- variant of obsessive-compulsive disorder?. *J Nerv Ment Dis.*, 1992; 180(5): 338-339.
13. Kornreich C, Dan B, Verbanck P, Fontaine E, Pelc I; Divergent responses to fluoxetine from two compulsive, food-related conditions: bulimia nervosa and compulsive water drinking. *Biol Psychiatry*, 1998; 43(4):310-311.
  14. Woods A, Smith C, Szewczak M, Dunn RW, Cornfeldt M, Corbett R; Selective serotonin reuptake inhibitors decrease schedule-induced polydipsia in rats: a potential model for obsessive compulsive disorder. *Psychopharmacology*, 1993;112(2-3):195-198.
  15. Ilowski BP, Kirch DG; Polydipsia and hyponatremia in psychiatric patients. *Am J Psychiatry*, 1988;145:1039.
  16. Kaya B, Ünal S, Çetinarslan B; Psychogenic polydipsia: A case report. *Anatolian Journal of Psychiatry*, 2000; 1(2):107-114.
  17. O'Connor KP; Clinical and psychological features distinguishing obsessive-compulsive and chronic tic disorders *Clin Psychol Rev.*, 2001;21(4): 631-660.