

Olanzapine Induced Edema

Hemanta Dutta*, Soumik Sengupta**

* Senior Resident, **Assistant Professor, Department of Psychiatry, Lokoprio Gopinath Bordoloi Regional Institute of Mental Health, Tezpur, Assam.

Abstract

Olanzapine is among one of the widely used antipsychotics. Weight gain and metabolic side effects of this drug have been discussed through numerous literature. However, edema due to Olanzapine is not a typical issue. Here we are delineating a case of Olanzapine-induced edema.

Keywords: Olanzapine; Edema; Naranjo Scale.

Introduction

Olanzapine is a second-generation antipsychotic which is broadly used in psychiatric practice. It belongs to Thienobenzodiazepine class of atypical antipsychotic and commonly used for the treatment of various psychiatric disorders [1]. Common side effects of Olanzapine are mainly sedation, weight gain, metabolic side effects, and extrapyramidal symptoms, etc [1]. Unwanted and uncommon side effects like pedal edema have not been frequently focused on the scientific literature. Only limited studies have tried to explain the pathophysiology behind the edema caused by antipsychotics [2-5]. Here, we are reporting a case of Olanzapine-induced edema, who reported to us amid her follow-up visits.

Case Report

A 45-year female patient who was a diagnosed case of schizophrenia presented to us with bilateral swelling of lower limbs. On viewing her past medical records it was revealed that she presented to our OPD 3 months ago with a history of fearfulness, suspiciousness, and decreased sleep. Her mental

status examination revealed that she was conscious, alert, and had the delusion of persecution, the delusion of reference, and auditory hallucination with intact judgment and impaired insight. She was finally diagnosed to be a case of paranoid schizophrenia. She has started with Olanzapine 10 mg and gradual titration was done up to 20 mg based upon the response. The patient was maintained well during her subsequent visits.



Picture 1: picture 1 showing the clinical examination of the patient

Corresponding Author: Hemanta Dutta, Senior Resident, Department of Psychiatry, Lokoprio Gopinath Bordoloi Regional Institute of Mental Health, Tezpur, Assam-784001.
E-mail: rubulpd1984@rediffmail.com

But after receiving Olanzapine for the last 2.5 months she gradually started to notice swelling of her lower limbs. The swelling remains minimal during

the morning hours, but it increases and comes to notice till the evening. Apart from the lower limbs, there was no swelling of other parts. On examination apart from bilateral moderate pedal pitting edema, no other abnormality was noted. Laboratory examination was done, including specially kidney function test, liver function test, including serum protein estimation, ECG, and thyroid profile and which were found within normal limits. Excluding all the possible factors and temporal association with consumption of Olanzapine, it was found to be causing the edema. Subsequently, Olanzapine was stopped and during follow-up, edema was seen to be decreased. Later on tab Aripiprazole, 10 mg was started and she was maintaining well with that. Picture 1 is showing the clinical examination of the patient.

Discussion

Antipsychotic-induced edema is not a common issue which is reported in the literature. However, only a small number of studies have reported edema with Olanzapine [2-5]. In our case, the exclusion of all possible causes of pitting edema and temporal association with the administration of Olanzapine led us to diagnose it as a case of medication-induced edema. The Narhanjo adverse effect scale also had been applied to quantify the association between the two, which had a score of 8, signifying a strong association [6]. Pathophysiology of the edema induced by antipsychotic drugs has not been clearly explained. Albeit several studies have proposed various mechanisms, which are enumerated as follows [2-5]:

- a. Antipsychotic increases the vascular permeability
- b. They increase the sodium retention by affecting renal angiotensin system

- c. Blockage of alpha 1 receptors, leading to vasodilation and decreased venous return.
- d. Blockage of the M1, H1 and 5HT receptors, leading to modulation of inositol triphosphate and diacylglycerol which causes downregulation of calcium pump and ultimately causes vasodilation by smooth muscle relaxation.

An unwanted adverse effect like pedal edema might cause fear among the patients, which ultimately may contribute as a factor for noncompliance. So psychiatrist should become more vigilant in these issues.

Reference

1. Sadock B, Kaplan H, Sadock V. Kaplan & Sadock's synopsis of psychiatry. Philadelphia: Wolter Kluwer/ Lippincott Williams & Wilkins; 2007.
2. Menon V, Muthukrishnan V, Mathan K. Olanzapine-induced tender pitting pre-tibial edema. *Journal of Pharmacology and Pharmacotherapeutics*. 2015; 6 (2):114.
3. Akýn S, Bahat G, Tufan F, Saka B, Öztop N, Erten N et al. Olanzapine as a cause of peripheric edema in an elderly man. *Aging Clinical and Experimental Research*. 2013; 25(1):115-117.
4. Yovtcheva S, Yazel J. Olanzapine-induced bilateral pedal edema: a case report. *General Hospital Psychiatry*. 2000; 22(4):290-291.
5. Malhotra M, Shrivastava M. Facial edema with olanzapine. *General Hospital Psychiatry*. 2013; 35(6): 682.e7-682.e8.
6. Naranjo C, Busto U, Sellers E, Sandor P, Ruiz I, Roberts E et al. A method for estimating the probability of adverse drug reactions. *Clin Pharmacol Ther*. 1981; 30(2):239-245.