

TOPIRAMATE-INDUCED ACUTE PSYCHOTIC SYMPTOMS: A CASE REPORT

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Abstract

A 36-year-old man, married, nurse, presented with feeling fear and injury from imaginary creatures to a psychiatric clinic in Sari, Iran. Symptoms began two days before admission when tablet Topiramate was started due to the increasing intensity of chronic headache. About one hour after the first dose, Symptoms became apparent and resolved when he woke up. There was no hallucination and loss of consciousness. Next day, following use the same dose, the symptoms appeared. Eventually, Topiramate was discontinued and the patient did not experience similar symptoms in follow up.

Key words: Topiramate, Psychosis, Migraine

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Introduction

Migraine is a severe and episodic disorder characterized by mild to severe headaches that occur unilaterally or bilaterally, with increasing severity of activity or training (Wober-Bingol, 2013). The main treatment proposed for people with mild to moderate symptoms is simple painkillers such as non-steroidal anti-inflammatory drugs (NSAIDs), or a combination of acetaminophen, acetylsalicylic acid and caffeine (Gilmore & Michael, 2011). Patients with severe and frequent migraine attacks are candidate for prophylactic therapy to improve the quality of life and prevention of overuse in acute medication phases (Adelman et al., 2008). Topiramate is a sulfur-derived monosaccharide drug that was originally designed for patients with epilepsy and seizure, but later it was used to treat migraines (White, 2005; Young, Hopkins, Shechter, & Silberstein, 2002). Topiramate has some common adverse effects such as anorexia, giddiness, asthenia, paresthesia, insomnia and anxiety (Gupta et al., 2014). Other side effects such as psychosis and cognitive disorders are rare (Levisohn, 2000; Singh, 2006). Psychotic symptoms in patients receiving topiramate have been described in case reports included visual and audio hallucinations, paranoid thoughts and delusion of control (Register, Ruano, Sanchez, Catalano, & Catalano, 2017; Watkin, Alam, & Javed, 2010). According to the low prevalence of psychosis as complications of topiramate use as well as the rapid onset of psychosis in patients taking this

drug, we will continue to introduce a patient in this field.

Case presentation

A 36-year-old man, married, nurse, presented with feeling fear and injury from imaginary creatures to a psychiatric clinic in Sari, Iran. The patient had no history of psychiatric disorders. Also, there was not any history of psychotic disorder in the patient's family memberships. He had a migraine-pattern headache that had been treated with various medications for 15 years but had not received a favorable response. Physical examination was normal, and no neurological disorder was found. Two days before admission, tablet Topiramate (Topamax) 25 milligrams twice a day was started due to the increasing intensity of chronic headache. Except for Acetaminophen and Ibuprofen, no drug history was found. About one hour after the first dose, symptoms became apparent included delusion of persecution that caused fearfulness and insomnia. Patient believed that he was threatened by imaginary creatures and might be harmed at any moment. The patients had no such opinions previously and reassurance from the family members had no effect in changing the patient's belief. The symptoms resolved when he woke up. There was no hallucination and loss of consciousness. Next day, following use same dose, the symptoms appeared. Eventually, Topiramate was discontinued and the patient did not experience similar symptoms in follow up.

Discussion

Topiramate is one of the psychiatric drugs that was initially designed as an anti-epileptic drug (Mula & Trimble, 2003). Later it proved to be beneficial in the treatment of various types of mental disorders and neurological complications, including the prevention of migraine, obesity, bulimia, binge eating, alcoholism and bipolar disorder (Arnone, 2005; Cipriani et al., 2011; Levisohn, 2000). In the present case, occurrence of the psychotic symptoms after administration of topiramate, disappearing by the time and reappearing after the second dose suggests that the symptoms may be due to topiramate prescription. Zesiewicz et al. described two cases with psychosis following administration of topiramate (25mg twice a day) to control essential tremors. The patients developed psychotic symptoms including visual hallucination and paranoia 3 days following administration of topiramate (Zesiewicz, Tullidge, Tidwell, Sullivan, & Hauser, 2006). Singh T reported another case experienced persecutory delusion and fearfulness 3 days following topiramate (25mg nightly) initiation (Singh, 2006). There are also some case reports of psychosis following topiramate consumption at dosages higher than 50mg daily (Miller, Prost, Bookstaver, & Gaines, 2010; Watkin et al., 2010). The mechanism of action of this drug is not known exactly. Inhibition of voltage-sensitive sodium channels in the spinal cord, preventing release of amino acids such as glutamate in the brain and suppressing the receptors of the type of kainic acid, increasing the amount of GABA in the brain, increasing the neurotransmitter GABA inhibition by binding to GABA A receptors, Specific carbon-isozyme anhydrase inhibition and inhibition of L-type calcium channels are among the recommended mechanisms for drug performance (Meldrum & Rogawski, 2007; Naegel & Obermann, 2010). The mechanism underlying psychosis due to topiramate is unknown. It has been postulated that GABAergic inhibition of substantia nigra and frontal lobe lead to psychosis in these patients (Miller et al., 2010; Singh, 2006). Psychosis is an abnormal mental status. Psychosis is seen in a series of psychiatric disorders in which the patient experiences symptoms such as hallucinations or delusions (Arciniegas, 2015). Treatment for topiramate-induced psychotic discomfort in many cases, like ours, is the cessation of topiramate. In many studies (like our case), for the treatment of primary illness, other drugs should be used as alternatives to topiramate. Also, lower doses of topiramate can be used to reduce its psychotic effects in some cases (Watkin et al., 2010; Zesiewicz et al., 2006). Topiramate-induced psychosis should be given more attention and should be considered in clinician's differential diagnosis for patients with history of topiramate consumption presenting with psychotic symptoms.

Ethical consideration

Written informed consent was obtained from the patient for the publication of this case report. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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