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Reversible anorgasmia with topiramate therapy for migraine prophylaxis

Case Report

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Abstract: Topiramate is an effective drug for the prevention of migraine headaches. On occasion, topiramate can be associated with a dose-related anorgasmia. Presented here is an adult case of reversible anorgasmia induced by and possibly attributable to topiramate therapy. Physicians need to be aware of the potential for topiramate to dose related reversible anorgasmia, and should inquire about sexual symptoms of patients.

Keywords: *Topiramate • Adverse effect • Anorgasmia*

1. Introduction

Topiramate, cited among the new generation antiepileptic drugs, due to its wide spectrum receptor activity, is used for prophylaxis purposes chiefly against epilepsy and migraine headaches. It is usually well tolerated at prophylactic doses. Side effects most frequently observed during the use of topiramate are somnolence, exhaustion, lack of appetite, paresthesia, and cognitive-neuropsychiatric syndromes [1-3]. Reported cases of sexual dysfunction attributed to topiramate are rare. Presented here is an adult case of reversible anorgasmia induced by and attributable to topiramate therapy.

2. Case Report

A 40-year old married male patient, father of two children, with a complaint of recurrent headache for about 10 years was admitted to the neurology outpatient clinic. The patient was diagnosed as having non-aural migraine. The patient had been suffering from 5-6 attacks per month. Routine biochemical investigation and cranial MRI results proved to be within normal boundaries. As a prophylactic therapy, the patient was prescribed a dose of 25 mg/day Topiramate that, through a weekly increase of 25 mg, would peak at 100 mg/day by the end of 4 weeks. In a control visit one month later, the patient maintained to have had 2-3 attacks during the month. In terms of side effects, he complained of a speech difficulty in finding the right words, slight exhaustion and paresthesia in his hands. Two weeks later, the dose of topiramate was increased to 200 mg/day for a period of 1 month by the end of which the patient commented that his headache attacks were reduced to 1-2 times a month, and incremental to the former side effects, he had developed anorgasmia during sexual congress. The data on hormonal investigations on that date were found to be within normal boundaries. At that stage, topiramate treatment was immediately stopped; the patient was given Zolmitriptan exclusively as a treatment against the attacks, and was asked to show up two weeks later for a control examination. At the end of that period, it was learned from the patient that his complaints had ceased

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to recur. The patient is presently undergoing 100-mg/day flunarizine prophylaxes, and is kept under observation for the progress and result of the therapy.

3. Discussion

Sexual dysfunctions associated with drugs prescribed for prophylactic migraine therapy may turn up from time to time. This side effect is often observed to be associated with the use of tricyclic antidepressants, selective serotonin re-uptake inhibitors and beta-blockers [1,3]. However, sexual dysfunctions due to anti-epileptic drugs, which are used more often in recent times as prophylaxis against migraine, are also reported [1]. Among such cases, sexual side effects associated with topiramate are also reported [2-5]. Although our patient had no history of any sexual disorder, we had encountered a reversible anorgasmia associated with the dose of Topiramate he was prescribed. We have observed actual cessation of this side effect following the stoppage of the topiramate therapy. Although the exact pathophysiology of anorgasmia is yet unknown, central and peripheral mechanisms may be surmised to have an active role in the emergence of its symptoms [2,3]. The normal sexual function entails interaction of numerous hormones and neurotransmitters [1-3]. And, in particular, orgasm induced in both sexes is controlled by nonadrogenic activity. Simultaneously, serotonin and dopamine neurotransmitters maintain a key role in the process. Serotonin, reducing dopamine secretion at the mesolimbic 'pleasure center', has a negative effect on orgasm. Therefore, anorgasmia is observed in the presence of drugs that raise serotonin levels. In contrast, dopamine agonists increase the sense of pleasure during sexual congress [2-5]. Topiramate, during the onset and dispersion of the seizure activity, is also known to have a modulator effect on several neurotransmitter systems. As a consequence, alterations in each of those processes result in a decrease of exciter neurotransmission and an increase of inhibitor transmission that may be responsible for reduced sexual stimulus [1-3]. Another occurrence during sexual gratification is genital vasodilatation as a result of accelerated blood flow through increased vasoactive intestinal peptide (VIP) and nitric oxide (NO) [3-5]. Topiramate, also as a carbonic anhydrite enzyme inhibitor (CAE), may reduce genital blood flow by inhibiting CAE source and by restricting VIP and NO supply. Since erectile disorders associated with other drugs of the same classification have been reported, Topiramate may be concluded to generate anorgasmia through CAE inhibition too. Sexual dysfunction associated with Topiramate is observed in both sexes. [3,4]. In view of all the above observations, anorgasmia associated with topiramate seems to be a phenomenon linked to the prescribed dosage that is reversible through reduction or cessation of the dose. Physicians need to be aware of the potential for topiramate to dose related reversible anorgasmia, and should inquire about sexual symptoms of patients.

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