Acute myopia induced by topiramate: Report of a case and review of the literature

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Introduction

Topiramate is a broad-spectrum anticonvulsant with multiple mechanisms of action.\(^1\,^2\) It has also been found useful in conditions like migraine, bipolar and post-traumatic stress disorders, post-herpetic neuropathy and other neuralgic conditions as well. Acute myopia or acute angle-closure glaucoma is a serious rare side effect of the drug. This report documents one such case.

Case Report

A 40-year-old woman presented with the history of severe unilateral throbbing headaches associated with nausea and photophobia. The headache used to recur almost every fortnight and lasted for 2 to 3 days. She used to get relief, sometimes, with sleep and consumption of non-steroidal anti-inflammatory drugs. She had history of bronchial asthma. Her mother also used to experience similar headaches. She was obese (BW 90 Kg) and was being treated with dietary restrictions, regular exercises, and a night dose of 10 mg of sibutramine. Neurological examination was essentially normal. Considering the clinical picture, diagnosis of migraine was entertained. She was put on flunarazine 5 mg and topiramate 25 mg before bedtime. Four days later, she complained of sudden loss of vision in both the eyes. On fundoscopy the discs were not well visualized and she was referred to an ophthalmologist who opined that she developed acute myopia in the order of 6 diopters in the right eye and 5.5 diopters in the left eye. The anterior chambers were shallow and the intraocular pressure on applanation tonometry was 22 mm of Hg in the right eye and 20 mm of Hg in the left eye. Topiramate was stopped immediately and diuretics were introduced in order to reduce the intra-ocular pressure. Examination on the fifth day showed normal visual acuity and no refractory error.

Discussion

Acute myopia and acute angle-closure glaucoma are serious adverse effects of topiramate use, both of which are reversible with immediate discontinuation of the drug.\(^3\,^4\) Detailed ocular examination showed shallow anterior chambers and ultrasound of the eyeballs suggested ciliochoroidal effusion with anterior displacement of the lens and the iris.\(^5\) Using World Health Organization (WHO) Causality Assessment Guide to the certainty of a suspected adverse drug reaction, Fraunfelder et al\(^6\) studied reports of ocular side effects of topiramate in 115 patients. Acute-onset glaucoma was documented in 86 patients and 17 of them had acute bilateral myopia up to 8.75 diopters. Furthermore, nine patients developed suprachoroidal effusions. Based on these findings WHO suggested that abnormal vision, acute secondary angle-closure glaucoma, acute myopia, and suprachoroidal effusions are complications of “certain category”, of topiramate therapy.

Di Legge, et al, raised the question whether topiramate or the acute migraine attack itself could be the cause of the visual problems.\(^7\) However, since the visual problems were also described in patients with epilepsy using topiramate, it is most likely that the drug itself is the possible culprit. The pharmaceutical company, Ortho-McNeil Pharmaceuticals, which manufactures the drug has communicated, following post-market surveillance, the tendency of the molecule to cause visual problems and revised the warnings and precautions in their prescribing information. The law office of Terry and Terry

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Topiramate, a new anticonvulsant, is also used for the prophylaxis of migraine and cluster headache. A serious but not often discussed side effect of the drug is the development of acute myopia and acute angle-closure glaucoma in the early stage of therapy that subsides rapidly with prompt discontinuation. One such case is reported here and the relevant literature in this regard is also reviewed.
Attorneys who represent victims of errors in medical management, mistakes in pharmaceutical manufacturing and medical malpractice, even suggested seeking legal opinion free of cost for such dangerous side effects. Jansen Ortho Inc. as well has issued their new prescribing information based on post-marketing experience in more than 8,25,000 patients and has stressed the occurrence of acute angle-closure glaucoma in the pediatric age group also.

Naranjo et al[10] devised a 10-item protocol to evaluate whether a drug could be considered responsible as the cause of an adverse reaction in a patient. For the lack of technical reasons and ethical considerations many items in the protocol could not be adhered to but it is worth following up the issue in collaboration with neuropharmacologists to establish incontrovertibly, the relevance of topiramate in the causation of such serious ocular problems. Thus it is important for the clinicians to educate the patients about this serious adverse event while prescribing topiramate and to advise them to report immediately in the event of visual obscuration. Prompt recognition of the complication and immediate stopping of the drug along with diuretic therapy is associated with the reversal of the symptoms.

References

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