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Topiromax-induced side effects: a case report

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Introduction

Topiromax (Topiramatum) is a sulfamate-substituted monosaccharide antiepileptic; its exact anticonvulsant and prophylaxis mechanisms of action, however, remain elusive. The agent acts predominantly by inactivating the sodium gate channels and activating some subtypes of gamma-aminobutyric acid receptors. Additionally, it acts by inhibiting some carbonic anhydrase isoenzymes. Because the last effect of the medication is less apparent than that of acetazolamide, this component of topiramate activity is not considered to be the main component of its antiepileptic effect. Ocular side effects of the medication include diplopia, blurry vision, visual disturbances, blepharospasm, dryness, tearing, mydriasis, myopia, photopsy, photophobia, scotoma, scintillating scotoma, decreased visual acuity, loss of accommodation, change in depth perception, amblyopia, temporary blindness, hemianopia, lid edema, glaucoma, night blindness, presbyopia, unusual eye sensation, visual field defect, abnormal ocular mobility, narrow-angle glaucoma and maculopathy [1].

Our purpose was to present the case of ocular side effects of Topiromax.

Materials and Methods

A patient with ocular symptoms after Topiromax treatment underwent examination at the facilities of pediatric ophthalmology department of regional emergency clinical hospital.

Results

A 17-year-old patient presented with a 10-year history of treated epilepsy. Additionally, a week before presentation, his neurologist had changed the prescription from an unknown antiepileptic to Topiromax, and, after taking Topiromax 200 mg/day for two days, the patient developed an abrupt decrease in vision to count fingers bilaterally, and noted blinking visual haze and sudden changes from blurry vision to sharp vision and vice versa.

He sought medical advice.

At presentation, the patient's visual acuity in both eyes was 0.02. His vision could not be corrected with glasses. With the Worth four-light test, the patient had no difficulty in distinguishing red and green colors, and binocular vision was present at a 3-m distance.

On examination, the eyelids were moderately edematous and puffy, the lid and bulbar conjunctivae were moderately edematous and hyperemic, and moderate photophobia was observed. Both corneas were clear and anterior chambers were shallow. Iris color and pattern was normal.

Both pupils were round. Consensual light reaction exceeded the direct light reaction. The fundi showed a pink reflex. Ophthalmic fundus examination revealed mild venous engorgement and normal arterial caliber. There were neither visual changes in optic disk nor ciliary tenderness, nor tenderness in retroposition of the globe.

Autokeratorefractometry showed -7.5 D and -8.5 D of myopia in OD and OS, respectively. IOP OD was 26.6 mmHg, and IOP OS was 22.3 mmHg.

Reosorbilact was administered as intravenous infusion (200.0) and diacarb (acetazolamide) was administered orally at a dose of 250 mg (one tablet) a day.

The next day, the patient's uncorrected visual acuity was 0.2-0.3 OD and 0.2-0.3 OS, and the best-corrected visual acuity was 0.90 with 1.5 D sph OD and 0.90 with 2.5 D sph OS. There was no reserve of accommodation for extended periods of viewing.

A reduction in the amounts of lid edema, conjunctival hyperemia and conjunctival edema was observed. No changes were observed in both anterior eyes and the state of both fundi.

Conclusion

Therefore, Topiromax influences the state of optic nerve and refraction, and results in spasm of accommodation.

References

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