

Medicine adding to misery

Case

A 53-year-old Indian lady presented with complaints of defective vision in both eyes since 1 week not associated with any pain or redness. Examination revealed best-corrected visual acuity (BCVA) of 6/60 in the right eye (OD [oculus dexter]) and 4/60 in the left eye (OS [oculus sinister]), defective color vision in both eyes, and a central scotoma in OD. Fundus evaluation showed normal optic discs and macula in both eyes [Fig. 1a]. Past history revealed pulmonary tuberculosis for the past 4 months, for which the patient had been taking antitubercular treatment (ATT).

What is your Next Step?

- Check the drugs and dose in the patient's ATT regimen
- Discontinuation of the toxic drug and vitamin supplementation
- Neuroimaging
- All of the above.

Findings

The treatment records revealed that the patient was on an intensive phase of ATT taking isoniazid, rifampicin, pyrazinamide, and ethambutol. Computed tomography brain was found to be within normal limits ruling out any intracranial tuberculosis.

Diagnosis

The diagnosis was ethambutol-induced optic neuropathy.

Management

Prompt discontinuation of ethambutol was advised and communicated to the treating pulmonologist. Vitamins B2, B6, and B12 and zinc supplements were advised. At 3-month follow-up, her BCVA improved to 6/24 in OD and 6/36 in OS, and funduscopy revealed temporal pallor in both eyes [Fig. 1b].

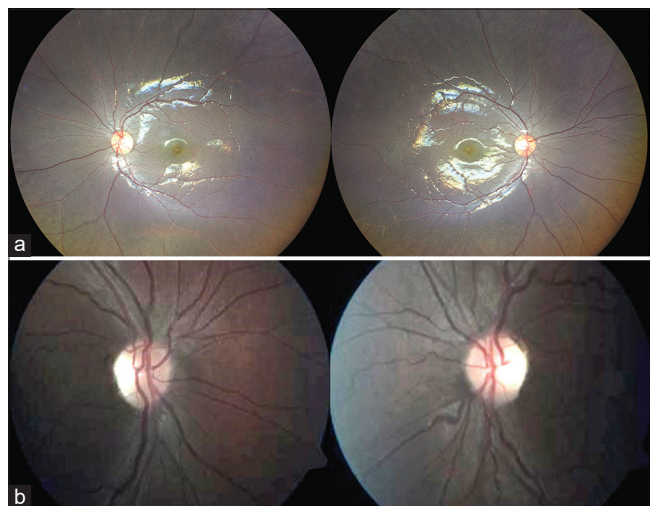


Figure 1: (a) Fundus photograph of both eyes showing normal disc and macula. (b) Fundus photograph at three-months followup showing temporal pallor in both eyes

Correct Answer

D. All of the above.

Discussion

Ethambutol hydrochloride, a bacteriostatic antimicrobial agent used as a first-line defense against tuberculosis, has been associated with optic nerve toxicity. The toxicity is dose dependent.^[1] The reported incidence of optic neuropathy is 5% to 6% in patients receiving a dosage of 15 to 25mg/kg/day of the drug.^[1] The ocular symptoms can develop from few days to 2 years after initiation of the drug. The ophthalmic manifestations include bilateral painless defective vision, dyschromatopsia, and central/cecocentral scotomas. Initially, the optic nerve may be normal on funduscopy, but optic disc pallor eventually develops.^[2] Prompt discontinuation of the drug can cause recovery of vision over a period of weeks to months.^[3] Vitamins and zinc supplements should be given. Baseline ophthalmic examination and counseling the patient regarding optic neuropathy are mandatory prior to starting ethambutol, and repeat testing should be performed every 6 months.^[3] Visual evoked potentials and optical coherence tomography may prove helpful for EON screening; however, prospective randomized control trials may provide more insights into their clinical usefulness.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

- Leibold JE. The ocular toxicity of ethambutol and its relation to dose. *Ann N Y Acad Sci* 1966;135:904-9.
- Chamberlain PD, Sadaka A, Berry S, Lee AG. Ethambutol optic neuropathy. *Curr Opin Ophthalmol* 2017;28:545-51.
- Koul PA. Ocular toxicity with ethambutol therapy: Timely recalculation. *Lung India* 2015;32:1-3.

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Cite this article as: Balakrishnan H, Kowsalya A, Kumar M. Medicine adding to misery. *Indian J Ophthalmol* 2021;69:2573.