

⚠ Ethambutol-Induced Optic Neuropathy Ethambutol is an antibiotic commonly used to treat tuberculosis. One of its most serious side effects is toxic optic neuropathy, which may present with bilateral vision loss and, less commonly, optic disc edema.

□ Pathophysiology Ethambutol interferes with mitochondrial function in retinal ganglion cells.

It accumulates in the optic nerve, leading to axonal degeneration.

The toxicity is dose- and duration-dependent, and more common in:

Patients on high doses (>15 mg/kg/day)

Long-term treatment (>2 months)

Those with renal impairment (reduced drug clearance)

□ Clinical Features Bilateral, painless vision loss

Central or cecocentral scotomas

Color vision deficits (especially red-green)

Decreased visual acuity

Normal fundus early on ("retrobulbar neuritis": "the patient sees nothing, and the doctor sees nothing")

Later: optic disc pallor, sometimes edema

□ Diagnosis Based on clinical history and symptoms in a patient on ethambutol

Visual field testing (central scotomas)

Color vision testing

OCT: may show thinning of retinal nerve fiber layer (RNFL)

Rule out other causes: MRI if diagnosis unclear

□ Management Immediate discontinuation of ethambutol is key

Some visual recovery possible if detected early

Monitor visual function regularly during therapy (visual acuity, fields, color vision)

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