Linezolid Optic Neuropathy: Be Careful and Quick

Satish V Khadilkar*, Rakhil S Yadav**, Sujeet Rajan***

Sir,

Linezolid is being used frequently in India to treat resistant tuberculosis. It is often continued for prolonged periods, even though the safety profiles have been worked out for use under one month. The drug has neurological side effects like polyneuropathy and optic nerve dysfunction which become more apparent and irreversible with longer use. While literature on peripheral neuropathy related to Linezolid is available, optic neuropathy is discussed less often. Patients with optic nerve dysfunction present with bilateral decrease in visual acuity. In the early phases, there may be no other findings. As the toxicity establishes over time, peripapillary retinal nerve fibre layer swelling is seen, particularly involving the papillomacular bundle. In addition, the optic disc appears hyperaemic and swollen. Later, telangiectatic microangiopathy and vessel tortuosity ensues. Mitochondrial respiratory chain dysfunction is considered to be the mechanism for Linezolid induced optic neuropathy.

We report three patients with Linezolid induced optic neuropathy whose clinical and laboratory features are summarized in Table 1.

These three cases of Linezolid induced optic neuropathy are heterogeneous. While in two middle aged patients, the optic nerve affection came after prolonged therapy, the third case is alarming as visual changes came very quickly. Literature on early occurrence is limited and only two instances of rapid optic neuropathy have been documented. Additionally, in our patient, repeat exposure to Linezolid...
again resulted in rapid optic nerve dysfunction, suggesting individual susceptibility to early toxicity. The long-lasting disability is of particular concern and one of the three patients has shown no recovery for six months.

In these three patients, physicians took some time to realize this side effect of Linezolid as it is not widely known and conventionally, optic symptoms in patients of tuberculosis on therapy tend to be attributed to ethambutol. A growing body of literature on Linezolid related optic atrophy is now available. A recent meta-analysis of twelve studies (11 countries; three continents) showed that optic neuropathy was encountered in 13.2% of patients. Therapy duration before development of optic neuropathy ranged from 5 to 11 months (mean 9 months) among all reported patients. In general, the proportion of adverse events was significantly higher when the Linezolid daily dosage exceeded 600 mg. Smaller doses like 300 mg daily have the advantage of lesser toxicity but can increase chances of resistance.

In this brief communication, we wish to emphasize that visual system affection due to Linezolid need to be actively looked for, particularly when use of Linezolid beyond 28 days is deemed inevitable. Monthly check for visual acuity, field of vision, colour vision and fundus examination is important to avoid delay in diagnosis. Individual susceptibility towards rapid optic neuropathy also needs to be kept in mind.

References