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Sir,

Isoniazid-related bilateral choroidal effusions

We report a case of bilateral anterior uveitis and ciliochoroidal effusions after isoniazid.

Case report

A healthy 47-year-old Malay man presented with 2 days of bilateral red eyes associated with pain and blurring of vision. This occurred a week after taking once-daily isoniazid 300 mg as anti-tuberculosis (TB) prophylaxis, prescribed due to a positive tuberculin skin test (TST, 15 mm) after his wife was diagnosed with active pulmonary TB. He was asymptomatic. Chest X-ray, HIV screen, and TB interferon-γ release assay (IGRA) (TB T-spot; Oxford Immunotec, Oxford, UK) were negative.

Presenting Snellen acuities were 6/12 OD and 6/9 OS. He had bilateral diffuse conjunctival congestion and deep anterior chambers with activity of 2+ cells. Fundus examination revealed bilateral, shallow, 360°, clear serous choroidal effusions, corroborated on ultrasound B scan imaging (Figure 1a). No other focal choroidal lesions were observed.

In view of his lack of symptoms and negative IGRA, isoniazid was stopped in consultation with his physician. Complete resolution of anterior uveitis and choroidal effusions was noted 3 days later (Figure 1b), with no further recurrences.

Discussion

Tuberculosis is a resurgent global disease. WHO's 2009 TB update estimates 33% of the world population is infected, 1.4 million of which have HIV.[1]

Isoniazid is widely used as prophylaxis or treatment against sensitive strains. Common adverse systemic reactions are hepatotoxicity and peripheral neuropathy. Established ocular side effects include toxic optic neuropathy, retrobulbar neuritis, and optic atrophy. Hypersensitivity reactions have rarely been reported and

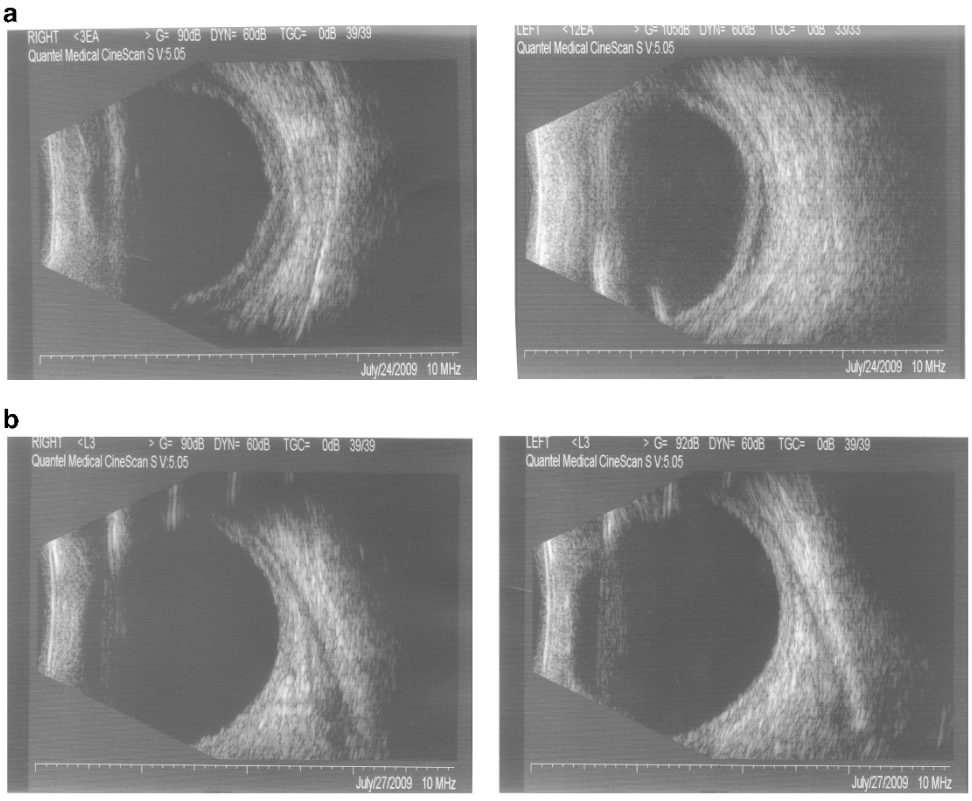

Figure 1 (a) B scan ultrasound at presentation showed bilateral peripheral choroidal thickening with ciliochoroidal detachment, present almost 360°. The low to medium reflectivity is suggestive of choroidal effusions. (b) Almost complete resolution of bilateral choroidal effusions a few days after discontinuation of isoniazid.

include rash, fever, lymphadenopathy, or vasculitis, which usually developed within 3–7 weeks of starting therapy.[2]

Isoniazid is metabolized in the liver mainly by acetylation and dehydrazination. This *N*-acetylhydrazine metabolite is believed to be responsible for the hepatotoxic effects of isoniazid. The rate of acetylation is genetically determined, being highest in Orientals and lowest in Caucasians. A previous study in Singapore reported 68% fast acetylators in a study sample of 68 Chinese subjects. Fast acetylation leads to accumulation of the acetylated metabolite with an increased risk of toxicity and side effects.[3]

In our TB-endemic Singapore population, a combined interpretation of clinical signs, TST, and IGRA is recommended to diagnose active TB.[4] Our patient did not have evidence to support active TB. He was not on any other medications. Other drugs reported to cause choroidal effusions include topiramate,[5] topical timolol, and dorzolamide.[6]

The sequential onset of bilateral choroidal effusions after starting isoniazid, with resolution upon discontinuation suggests a hypersensitivity response to isoniazid.

We acknowledge that to confirm drug causality, positive *in vivo* re-challenge is helpful. However, the temporal sequence and lack of other possible causes are highly supportive. A fast acetylator might also further strengthen our case. Unfortunately, we were not able to perform this test.

Physicians should consider the new onset of bilateral painful red eyes after starting isoniazid as a possible manifestation of drug hypersensitivity and prompt ophthalmological referral is encouraged for further evaluation.

Conflict of interest
The authors declare no conflict of interest.

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Sir,

'Steroid treatment card' compliance is suboptimal but can be improved

Patients attending a specialist uveitis clinic are commonly prescribed systemic corticosteroids.[1] The United Kingdom Medicines and Healthcare Regulatory Agency guidelines state that all patients prescribed systemic corticosteroids for >3 weeks should receive a 'Steroid Treatment Card',[2,3] which gives guidance on minimising risk and provides details of prescriber, drug, dosage, and treatment duration. We have audited current compliance levels. All patients prescribed $\geqslant 5$ mg daily oral prednisolone attending a specialist adult uveitis clinic (Royal Liverpool University Hospital) during a 1-month period (April 2009) were questioned on steroid card use. All patients were told about the benefits of the card. Compliance with card use was reaudited among those reattending clinic within 2 months.

During the initial 1-month audit period, 243 patients attended the clinic. Of these, 73 (34 male, 39 female) met the above criteria. At the initial visit, 30 subjects (41%) were compliant with steroid card use (ie were carrying a steroid card). For patients prescribed between 5 and 19 mg/day, 43% were compliant ($n=54$); for 20–39 mg/day, 33% were compliant ($n=9$); and for $\geqslant 40$ mg/day, 40% were compliant ($n=10$). Of the steroid cards seen, 21 (70%) recorded an up-to-date dosage. Of the original cohort, 44 subjects (60.3%) re-attended the clinic during the subsequent 2-month study period. Of these, 27 (61%) were carrying a steroid card: an improvement in compliance. Of the steroid cards seen, 22 (81%) recorded an up-to-date dosage.

Our work shows that current steroid card compliance is suboptimal, but can be improved. Ophthalmologists prescribing long-term steroids should emphasise the importance of the card.

Conflict of interest
The authors declare no conflict of interest.

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