These few isolated cases with late-onset sight-threatening ROP sequelae post-IVB highlight important facts. First, infants treated with IVB monotherapy should be followed for depressed peripheral retinal examinations under anaesthesia. Second, follow-up every 6 months after 1 year of age for first 3 years and then annually should be done to help in early detection of late-onset peripheral proliferations and prevention of sight-threatening complications. Third, FA use may help study the retinal vascular characteristics post–IVB monotherapy to understand the risk factors that may lead to tractional proliferation.

The potential need for laser photocoagulation to the peripheral avascular retina despite treatment with IVB is a question that remains to be answered. Similarly, late-onset tractional proliferation post–IVB monotherapy can be sight-threatening if not detected early. Now, as we are seeing more cases being reported, it requires longitudinal observational clinical data to address this concern.

Acknowledgements: Our institution receives an unrestricted grant from the Foundation of Research to Prevent Blindness to support research and publications.

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Can J Ophthalmol 2018;53:e99–e103

https://doi.org/10.1016/j.jcjo.2017.09.028

Effect of topical dorzolamide therapy on cystoid macular edema in hydroxychloroquine retinopathy

Hydroxychloroquine (HCQ) is an analogue of chloroquine (CQ), an antimalarial drug that is widely used to treat autoimmune disorders, with fewer toxic effects than CQ. Although HCQ is very effective in the treatment of many rheumatoid and inflammatory conditions, it is also known to cause toxic retinopathy when it is used over a long period of time. Clinical manifestations of HCQ retinopathy vary from subtle scotomas without funduscopic abnormality to characteristic bull's eye maculopathy.[1]

Cystoid macular edema (CME) is also observed as HCQ retinopathy. Twelve cases have been reported in 4 articles in the literature to date.[2–5] Many treatments for CME have been attempted, but no treatment has shown a consistent effect to date. We here describe 2 patients with a history of long-term use of HCQ who experienced CME and whose condition was improved by the use of a topical carbonic anhydrase inhibitor.

Case reports

Case 1

A 40-year-old female visited our clinic and reported decreased vision in both eyes for 3 months. She had been treated for systemic lupus erythematosus for 20 years. She had taken 400 mg HCQ (8.5 mg/kg actual body weight) per day for 20 years, and the cumulative dose was 2920 g.

Her best-corrected vision was 20/50 OD and 20/40 OS. Subtle macular pigmentary change with mottling was found on fundus examination. Spectral-domain optical coherence tomography (SD-OCT) revealed a loss of ellipsoid zone, an external limiting membrane, and retinal pigment epithelium (RPE) with sparing of the foveal area. CME was detected in both eyes (Fig. 1A and 1B). Fluorescein angiography (FA) demonstrated mild leakage around small vessels and prominent macular petalloid pooling in the late phase. Hypofluorescence was observed around the superotemporal arcade on FA and indocyanine green angiography.

Although HCQ treatment ceased upon diagnosis of HCQ-related toxic retinopathy, CME had not resolved even 3 months after HCQ cessation. We then

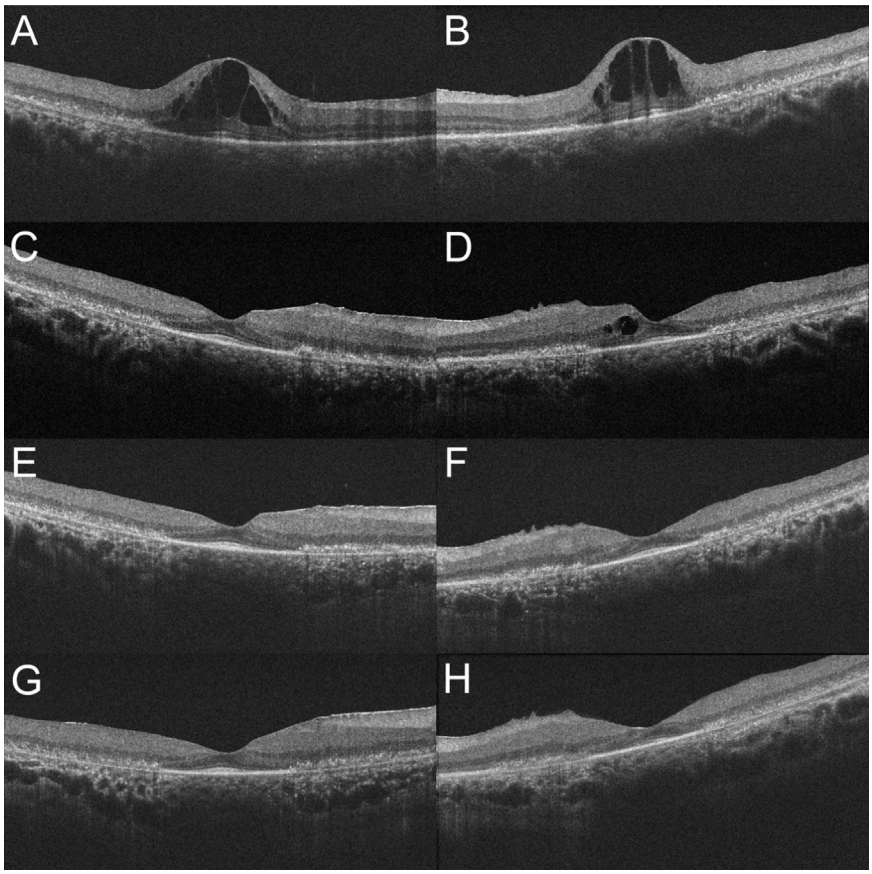

Fig. 1—Spectral-domain optical coherence tomography (SD-OCT) images of patient 1 before and after topical dorzolamide treatment. Foveal cystoid macular edema (CME) and parafoveal outer retinal degeneration were found in both eyes before topical dorzolamide treatment (A, B). After 2 months of treatment, CME was completely improved in the right eye (C) and decreased in the left eye, but some cystic lesions remained (D). After 6 months (E, F) and 12 months (G, H) of treatment, the patient continued treatment with eye drops and remained without CME recurrence.

administered topical dorzolamide eye drops (Dorzolamide 2%, timolol malate 0.5%) twice daily. A month after starting topical medication, CME was partially decreased. Two months later, CME had improved further in the left eye and had completely resolved in the right eye (Fig. 1C and D) and vision had improved to 20/25 OU. She has maintained eye drop application steadily. There was no recurrence of CME at 18 months after treatment (Fig. 1E–H).

Case 2

A 68-year-old female presented with a 2-month history of difficulty reading. She had been treated with HCQ for rheumatoid arthritis. She has taken 400 mg HCQ (7.7 mg/kg actual body weight) daily for 18 years (cumulative dose: 2628 g). Her best-corrected visual acuity was 20/30 OU. Macular mottling and more prominent paracentral ring-shaped hypopigmentary lesions were observed upon fundus examination. SD-OCT revealed similar findings of CME and disruption of the outer retina and RPE. FA demonstrated subtle dye pooling on the macula in the late phase. Hyperfluorescence around the temporal major arcade from the early phase was consistent with a window defect (Fig. 2C and D).

HCQ treatment was stopped upon diagnosis of drug toxicity, and topical dorzolamide eye drops (Dorzolamide 2%, timolol malate 0.5%) were applied. Two months later, CME had completely resolved in both eyes (Fig. 3C and D). Vision was improved to 20/25 OD and 20/20 OS. There was no recurrence of CME during 5 months of continued eye drop application. However, 2 months after the discontinuation of the medication, the patient showed a recurrence of CME at the visit and resumed the treatment. After 2 months, the CME was completely improved again in OCT (Fig. 3G and H). She maintained treatment without recurrence of CME at 14 months after treatment. No side effects were associated with the eye drops.

Discussion

Clinically, the predominant finding of HCQ toxic retinopathy is a thinning of the parafoveal outer retina and eventual damage to the RPE.[6] Visual field defects correlate well with the degree of retinal damage and vary from paracentral scotoma to a confluent pericentral ring or