
Bilateral nongranulomatous anterior uveitis associated with bimatoprost

Mark Packer, MD, I. Howard Fine, MD, Richard S. Hoffman, MD

A 72-year-old man with long-standing bilateral glaucoma became refractory to levobunolol ophthalmic solution therapy after many years. Brimonidine was prescribed, but the patient developed a hypersensitivity several months later that was treated with loteprednol ophthalmic suspension. Bimatoprost was initiated 2 weeks later. Within an hour of the first dose of bimatoprost, the patient reported eye pain and photophobia that remained unresolved the following day. Examination revealed acute bilateral nongranulomatous anterior uveitis that was effectively treated with loteprednol. While observations in human and animal models suggest an association between certain prostaglandin-like agents and intraocular inflammation, this report is one of the first to suggest a link between bimatoprost and intraocular inflammatory reaction.

J Cataract Refract Surg 2003; 29:2242–2243 © 2003 ASCRS and ESCRS

Bimatoprost ophthalmic solution 0.03%, a prostaglandin-like agent used in the treatment of glaucoma, was recently reported to be associated with cystoid macular edema and reactivation of herpes simplex virus.^{1,2} Anterior uveitis has been reported in association with a variety of ocular hypotensives, including latanoprost,³ but we are unaware of reports of uveitis associated with bimatoprost.

Case Report

A 72-year-old man presented for glaucoma management. Ocular history included levobunolol ophthalmic solution in each eye twice daily for several years. The patient had no history of eye injury, eye surgery, iritis, or uveitis. Examination revealed 20/20 visual acuity in both eyes with correction for mild hyperopic astigmatism and an intraocular pressure (IOP) of 20 mm Hg in both eyes. Mild nuclear sclerosis was present bilaterally. Cup-to-disc ratios were 0.55 in the right

eye and 0.30 in the left eye, with temporal saucerization in the left eye.

Follow-up examination 6 months later showed elevated IOP (23 mm Hg in the right eye and 24 mm Hg in the left eye). Levobunolol was discontinued, and brimonidine ophthalmic solution was prescribed. Six weeks later, bilateral IOP was 18 mm Hg. Eight months later, the patient presented with brimonidine hypersensitivity. Brimonidine was discontinued, and loteprednol ophthalmic suspension was given 3 times daily. Two weeks later, the brimonidine hypersensitivity had resolved but glaucoma control had worsened. Loteprednol was discontinued, and bimatoprost once daily each evening was prescribed for both eyes.

The patient experienced eye pain 45 minutes after the first bimatoprost dose and photophobia 15 minutes later that continued the following day. The patient did not report pruritus and did not describe injection or hyperemia immediately after bimatoprost administration. There are reports that pain following the instillation of bimatoprost is not uncommon (Lumigan®, package insert, Allergan, Inc.). Upon examination, bilateral visual acuity was 20/30 and bilateral IOP was 12 mm Hg. Moderate bilateral conjunctival injection with ciliary flush was present. The corneas were clear without staining or keratic precipitates. Anterior chamber examination of both eyes demonstrated 1+ cell and flare (3 to 5 white cells/high-power field). Acute bilateral nongranulomatous anterior uveitis was diagnosed, bimatoprost was discontinued, and loteprednol was instilled 4 times daily in both eyes.

One week later, the uveitis symptoms were resolved. Visual acuity returned to 20/20, IOP was 19 mm Hg in the

Accepted for publication April 1, 2003.

From the Casey Eye Institute, Department of Ophthalmology, Oregon Health & Science University, Portland, Oregon, USA.

None of the authors has a financial or proprietary interest in any material or method mentioned.

Reprint requests to Mark Packer, MD, Oregon Eye Institute, 1550 Oak Street, Suite 5, Eugene, Oregon 97401, USA. E-mail: mpacker@fnemd.com.

right eye and 20 mm Hg in the left eye, and the anterior chambers were deep and quiet. Loteprednol was discontinued and fixed combination dorzolamide hydrochloride–timolol maleate ophthalmic solution twice daily was initiated. Two weeks later, IOP was 16 mm Hg in the right eye and 14 mm Hg in the left eye. A repeat visual field test 1 week later was within normal limits.

Discussion

Observations in human and animal models suggest an association between certain prostaglandin-like agents and intraocular inflammation.⁴ Animal studies indicate that high doses of prostaglandins potentially disrupt the blood–aqueous barrier, but this is not necessarily the case with lower therapeutic doses.⁵ We report bilateral nongranulomatous anterior uveitis during treatment with the prostaglandin derivative bimatoprost in a patient with no history of iritis or ocular surgery. Pain soon after administration, rapid onset of photophobia, and onset of cell and flare supported a possible association between bimatoprost and uveitis. Although a

masked rechallenge would have provided additional support for this hypothesis, it was impractical in this case because the patient was relocating from our area. Ophthalmologists should watch for symptoms of pain and photophobia suggestive of uveitis in patients who are initiating therapy with bimatoprost.

References

1. Wand M, Gaudio AR. Cystoid macular edema associated with ocular hypotensive lipids. *Am J Ophthalmol* 2002; 133:403–405
2. Kroll DM, Schuman JS. Reactivation of herpes simplex virus keratitis after initiating bimatoprost treatment for glaucoma. *Am J Ophthalmol* 2002; 133:401–403
3. Fechtner RD, Khouri AS, Zimmerman TJ, et al. Anterior uveitis associated with latanoprost. *Am J Ophthalmol* 1998; 126:37–41
4. Camras CB. Prostaglandins. In: Ritch R, Shields MB, Krupin T, eds, *The Glaucomas*, 2nd ed. St Louis, MO, Mosby 1996; 1449–1461
5. Groeneboer MC, Hoyng PFJ, Kuizenga A. Prostaglandin F_{2α} isopropyl ester versus Iloprost phenacyl ester in rabbit and beagle eyes. *Curr Eye Res* 1989; 8:131–138