Prostaglandin analogues (PGA) are topical PGAs against drugs frequently recommended by glaucoma experts as first line therapy in patients with newly diagnosed glaucoma or ocular hypertension. The popularity of these drugs arises from their potent intraocular pressure lowering effect, once-daily dosing and paucity of systemic side effects noted to date. Local side effects including iris pigmentation, hypertrichosis, conjunctival and eyelid skin hyperaemia are well documented, however more recently, observations in monocular users have revealed a novel constellation of ocular adnexal changes attributable to topical PGA therapy.

As early as 2004, upper eyelid sulcus deepening and involution of dermatochalasis are common findings in patients who were unilaterally treated with bimatoprost were reported, and several years later enophthalmos was described in eyes treated with the same medication. Multivariate analysis confirms current PGA use is associated with a significantly increased risk of periorbital changes. The full constellation of changes includes deepening of the upper eyelid sulcus, resolution of dermatochalasis, loss of inferior orbital fat pad, upper lid ptosis with levator dysfunction, lower lid retraction and canthal malposition. While not reported as frequently as DUES, while not reported as frequently as DUES, periorbitopathy: a syndrome involving upper eyelid tightening of the lid margin, as well as demonstrating a non-significant trend towards upper lid retraction. Like several other studies they too noted a significant rate of lower lid retraction which would be consistent with their upper lid findings.

There are no studies to date demonstrating improvement of marginal blepharitis or other conjunctival changes on topical PGA use and given the inconsistent findings, comprehensive studies are needed to elucidate the nature and specific effects of PGA use.

**Lid margin changes**

Trichomegaly and increased skin pigmentation are well recognised and the former has been known to contribute to lash loss, which can be severe. Recent series have now demonstrated that structural changes to the lid margin are equally prevalent, with a reduction in the brightness of the upper and lower lid margins and tightening of the lid margins. These changes were observed to occur irrespective of the prostaglandin in use. A case of spontaneous globe subluxation in a thyroid orbitopathy patient post-cessation of treatment with bimatoprost has recently been reported, and the patient was suspected to be due to tightening of the lid margin.

**Lid margin reversibility**

Reinforcing this theory is the propensity for lid margin changes to be an independent risk factor. Prospective studies of marginal blepharitis and meibomian gland dysfunction (MGD) with coexisting blepharitis and lid margin changes may occur. Some changes may occur within months they occur gradually. Glaucoma patients also tend to be elderly and may normally expect prominent periorbital bony architecture demarcation, sunken appearance of the globe and hollowing of the periorbital area. It is therefore important that clinicians identify these changes, as they may otherwise remain unrecognised until much more severe.

We recommend baseline photographs with periodic comparison for all patients receiving these medications. The soft tissue effects of PGA may be at least partially reversible in some patients, so alternative therapy, or changing to latanoprost from one of the more potent PGA’s should be considered in affected patients. Surgical intervention should be deferred until it is clear that the changes are irreversible or are progressive.

**References**