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Long Luscious Lashes

Daily use of bimatoprost 0.03% (Latisse) leads to longer, thicker, and darker eyelashes

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In the fast moving arena of cosmetic surgery, hype is omnipresent and the media is full of “new” and miraculous procedures that promise fantastic results with little or no downtime. Most of these “discoveries” fade into obscurity because of results that fail to meet expectations. Barbed suture facelifts, skin tightening devices, and minimally invasive laser treatments that produce minimal results are examples of hyped procedures that entered like a lion and exited like a lamb.

From time to time, there is a device, procedure, or medication that hits like an atomic bomb and yields results that meet or exceed expectations. Botox, hyaluronic acid fillers, and vascular lasers are examples of technology that lived up to or exceeded the hype. It is time to add another notch to the success column: Latisse for eyelash enhancement.

Latisse (bimatoprost



Figure 2. The author's wife before (left) and 90 days after daily application of Latisse.

0.03%) is a structural prostaglandin analog approved by the FDA in 2001 to lower intraocular pressure in patients with open angle glaucoma or ocular hypertension. Incidental eyelash growth has been long recognized, and most glaucoma patients simply trimmed the lashes in the affected eye. The long-term safety of bimatoprost for therapeutic use is well established: There have been 32 clinical trials involving more than 5,700

vasoconstriction/vasodilation, platelet formulation, and constriction/relaxation of the bronchioles. There are many prostaglandins present in cells. The function of each prostaglandin is specifically dictated by their binding to specific receptors. Prostaglandin analogs are synthetic molecules similar in structure to naturally occurring prostaglandins. They can mimic natural prostaglandins in function

different from scalp hair. The normal rate of eyelash growth is about 0.15 mm per day. Eyelash growth is the result of a cyclical process that occurs in three phases with dividing matrix cells. Anagen is the new growth phase. In eyelashes, anagen lasts one to two months as compared with scalp hair, which may grow for as long as six years. About 84% of scalp hair follicles are active versus only 41% of eyelash follicles. Following anagen is cat-

agen, the involutinal phase. This signals the end of active hair growth whereby hair cells die. In the lashes, this phase lasts about two weeks. Telogen is the resting phase of the hair follicle and lasts four to nine months, with an average of five months. More than 50% of eyelash follicles are in telogen at any given time. The hair cycle is completed by exogen,

LONGER, THICKER, DARKER

Latisse was clinically tested in a pivotal Phase III, multi-center, double-masked, placebo-controlled study to assess its safety and efficacy in which all end points (improved eyelash prominence, length, thickness and darkness) were met.¹

A statistically significantly and higher percentage of subjects in the Latisse group compared with the vehicle group experienced at least a one-grade increase from baseline in overall eyelash prominence as rated by the Global Eyelash Assessment (GEA) scale at week 16. By week 8, researchers observed a statistically significant



Figure 1. Latisse is applied after removing makeup. A single drop is placed on the supplied brush (figure 3a) and the tapered tip of the brush is used to apply the liquid at the base of the upper lashes with care to minimize skin contact (figure 3b). Any excess is removed from the lash base (figure 3c).

glaucoma patients and more than 13 years of clinical trial experience.

Prostaglandins are naturally-occurring oxygenated fatty acid molecules found in many tissues and organs of the body. Prostaglandins act as local regulators that mediate a variety of physiological functions, including

by binding to prostaglandin receptors in humans. Prostaglandin receptors are present in hair, particularly in the dermal papilla and outer root sheath.

HAIR GROWTH ANATOMY AND PHYSIOLOGY

Latisse is indicated for the treatment of hypotrichosis. Eyelash hair growth is vastly

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difference favoring Latisse that was maintained throughout the duration of the treatment.

At week 16, the mean change from baseline to week 16 was 1.4 mm and 0.1 mm for the Latisse solution and vehicle groups, respectively, a difference that was statistically significant. The results for percentage change from baseline to week 16 for eyelash length corresponded to a 25% increase for Latisse and only 2% for vehicle.

By week 8, the difference in eyelash thickness/fullness between the two treatment groups had reached statistical significance, with thicker/fuller eyelashes observed in the Latisse-treated group compared with the vehicle group. This difference also was maintained for the duration of the treatment. The mean change from baseline to week 16 was 0.7 mm² for the Latisse groups and 0.1 mm for the vehicle groups. These results correspond to a 106% change from baseline for Latisse and a 12% change from baseline for vehicle.

At week 16, the Latisse-treated group showed a statistically significantly greater degree of eyelash darkening compared with the vehicle group. These results correspond to an 18% increase in darkness for the Latisse group compared with 3% for patients treated with vehicle. This statistically significant difference was maintained for the duration of the treatment.

CLINICAL OCULAR SAFETY

Statistically significant differences in mean intraocular pressure reduction were observed between the two treatment groups at weeks 1 through 16, although the magnitude of this reduction was not cause for clinical concern. The Latisse group had a peak mean reduction

from baseline of 1.5 mm Hg at week 12 compared with 0.7 mm Hg in the vehicle group at week 16.

IRIS DARKENING

Increased iris pigmentation has occurred when the same formulation of Bimatoprost ophthalmic solution (Lumigan) was instilled directly into the eye when treating glaucoma. Although iridal pigmentation was not reported in clinical studies with Latisse, Allergan says patients should be advised about the potential for increased brown iris pigmentation which is likely to be permanent.

The Latisse package brochure cautions that Latisse should be administered during pregnancy only if the potential benefit justifies

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the potential risk to the fetus. Because many drugs are excreted in human milk, caution should be exercised when Latisse is administered to a nursing woman. Safety and effectiveness in pediatric patients have not been established.¹

Contraindications to Latisse include concomitant use of other medications that may lower intraocular pressure and a history of elevated intraocular pressure. Patients with these clinical characteris-



Figure 3. A patient before (left) and four weeks after nightly Latisse use.

tics should consult their ophthalmologist prior to use.

CONCLUSIONS

Latisse applied to the upper eyelid margins of healthy adult subjects once per day for four months resulted in significant improvements compared with vehicle in the growth of eyelashes, as measured by overall eyelash prominence (defined by at least a one-grade increase on the GEA scale), eyelash length, thickness, and darkness. These improvements were statistically significant for Latisse users compared with the vehicle group for all end points by week 8. Latisse was safe and well tolerated in this population of healthy adult subjects.¹ Use of the drug on patients with alopecia and those who have chemotherapy-related hair loss raise interesting prospects for future research projects.

PATIENT USAGE

Latisse is intended for use on the skin of the upper eyelid margins at the base of the eyelashes. Package instructions advise patients not to apply the drug to the lower eyelid but many patients do. Anecdotal reports that

some patients experience eyebrow growth. Latisse is a once-daily prescription treatment applied to the base of the upper eyelashes with a sterile, single-use-per-eye disposable applicator. Latisse users can expect to experience longer, fuller and darker eyelashes in as little as eight weeks, with full results in 16 weeks. If use of the drug is discontinued, eyelashes will gradually return to where they were prior to treatment over a period of weeks to months (average eyelash hair cycle).

APPLICATION DIRECTIONS

Latisse is used in a simple nightly regimen of applying a single drop to the base of the upper lashes with the tapered end of supplied brush (Figure 1). A bottle of Latisse contains approximately 90 drops, but only comes with 60 brushes.

- Apply to a clean face at night after all makeup is removed
- Apply one drop to the single-use-per-eye applicator
- Brush applicator along upper eyelash margin
- Repeat for the opposite eyelid margin using a new sterile applicator
- Dab or blot any excess medication
- Do not insert contact lenses until at least 15 minutes after application
- Do not apply to the lower eyelash line

Additional applications of Latisse will not increase the growth of eyelashes. Bimatoprost has been known to produce darkening of the iris when used in the routine treatment of glaucoma but this was not seen in the clinical trials of Latisse.

The brushes supplied with the product are one reason that hyperpigmentation

disorders of the skin and iris should be rare with Latisse when it used as directed. Each dose applied to the eyelid margin with the provided brush delivers approximately 5% of the dose that would be applied in a single drop to the eye when used for treating glaucoma.²

Patients complain of the stiff and unwieldy nature of the supplied brushes, and some patients substitute a mascara or eyeliner brush to apply the drug. The supplied brushes were part of the FDA requirements and I look for them to be replaced with more user friendly brushes as further FDA hurdles are cleared. The most common side effects after using Latisse are an itching sensation in the eyes and/or eye redness. This was reported in approximately 4% of patients.

Women put a lot of energy into their eyelashes using mascara, curling devices, false lashes and over the counter "enhancers." Long eyelashes historically have been favored by women. This new use of an apparently safe and effective medication is sure to become a very popular cosmetic treatment. My patients who use Latisse are ecstatic about it. Some of them have had to trim their lashes because of the impressive growth (Figures 2 and 3). Latisse is an excellent addition to the cosmetic practice's armamentarium of minimally invasive procedures.

Dr. Niamtu is a board certified oral and maxillofacial surgeon who limits his practice to cosmetic facial surgery in Richmond, Va.

REFERENCES

1. Latisse package insert.
2. Data on file. Allergan, Inc.