



A TOPICAL OCULAR RING DESIGNED TO REPLACE GLAUCOMA EYE DROPS

Here, Anne Brody Rubin, Vice-President, Marketing, ForSight VISION5, introduces the company's ring-shaped ocular insert containing prostaglandin for the lowering of intra-ocular pressure in glaucoma. The product, which has been successful in Phase II trials, is due to enter Phase III this year.

Eye drops that lower intra-ocular pressure (IOP) are very effective at slowing the loss of visual field progression in glaucoma patients – when patients take their drops regularly. However, fewer than 50% of patients who are initially prescribed prostaglandin eye drops continue to refill their prescriptions reliably one year later.¹

Reasons patients cite for nonadherence include forgetfulness, physical challenges (such as tremor and arthritis) making self-administering drops difficult, and discomfort from the eye drops. The Bimatoprost ring from ForSight VISION5 is designed to provide a solution for these nonadherent patients.

Elevated IOP is associated with a loss of vision and reducing IOP is the only proven way to prevent vision loss. So, there remains an unmet need to provide clinically relevant IOP reduction with a simple, non-invasive product for patients who do not or cannot take their medications. Such a product can delay and prevent visual field loss in patients who are otherwise not receiving adequate treatment.

The Bimatoprost ring is a topical solution for sustained IOP control. This sustained release ring delivers a prostaglandin for six months. The ring has a durable effect, is non-invasive, well-retained and is dispensed by the physician in a simple, in-office procedure. The ring is designed with the goal of providing IOP control for non-adherent patients.

A single administration of the ring is designed to provide six months of clinically significant IOP control. The six-month durability profile of the product is impor-

tant since it aligns well with established practice patterns for lower-risk glaucoma and ocular hypertension patients, and will therefore not require additional visits.

The Bimatoprost ring has been studied in Phase I and II trials involving more than 300 subjects. It is a soft, bimatoprost-infused ring that rests under the eye lids and is applied at the regular eye-care visit by the eye-care provider. In clinical trials, patients have found it to be comfortable and well-retained.² The company intends to start Phase III testing in 2016.

The ring (see Figure 1a) comes in multiple sizes to ensure it will be comfortable for the patient. Once the eye is measured, the ring can be placed under the upper eye lid and then under the lower lid (Figure 1b) and then rests comfortably under the lids (Figure 1c). In Phase I studies, approximately 90% of patients were comfortable wearing a non-medicated ring and retention of the rings in both eyes for up to six months of continual use has been excellent.

An extensive clinical program has been conducted on the Bimatoprost ring to date: a total of nine clinical studies, including two fully-masked, randomised, controlled, Phase II efficacy studies with safety extensions.

The ring delivers clinically significant IOP reduction for six months. Open-label Phase I studies in 27 subjects demonstrated that at screening subjects had a diurnal mean IOP of 16.3 mmHg and had been historically titrated to a single medication that had given them excellent IOP control. After a four-week washout, IOPs rose to approximately 24 mmHg. After a single placement of the ring in each eye, diurnal IOP control was

Ms Anne Brody Rubin
Vice-President, Marketing
T: +1 650 325 2050 x119
E: information@forsightv5.com

ForSight VISION5, Inc
191 Jefferson Drive
Menlo Park
CA 94025
United States

www.forsightvision5.com

maintained at about 18-19 mmHg with approximately a 5 mmHg reduction from baseline at six months. Overall, diurnal IOP reduction in the range of 4.7-6.5 mmHg was observed. IOP reduction in this range should provide clinically significant benefit to patients who do not adhere to their eye drops.

Results from the first of the Phase II studies were presented by the principal investigator, Dr James Brandt, at American Academy of Ophthalmology 2016, and the data have been submitted for publication. In that study, sustained IOP-lowering from a single Bimatoprost ring for six months was observed. A dose-ranging trial has also recently been completed and longer-term safety data on the product will be presented in March 2016.

Patients had a positive experience wearing the Bimatoprost ring. After participating in the dose-ranging study, patients were asked to submit an anonymous survey by mail describing their interest in the product. These data show that 85% of patients who have worn the ring-shaped ocular inserts either strongly agreed or agreed with the statement, "I would willingly recommend ocular inserts to a friend or family member with glaucoma with adherence challenges."

Physicians have also demonstrated a strong preference for the ring. More than 80% of ophthalmologists questioned prefer the prostaglandin ring concept with a profile of close to 100% adherence and clinically significant IOP reduction to a prostaglandin eye drop that has slightly more efficacy but uncertain adherence.³ Furthermore, physicians have indicated that they would expect to prescribe the ring to more than half of the patients to whom they currently prescribe eye drops.

In the future, patients may have an alternative to daily eye drops not only for glaucoma but for other indications. Because the ring has a relatively large volume for a sustained release system, it has the capability of delivering two drugs for significant duration, for example bimatoprost and timolol. The company plans to start this fixed combination clinical study this year. The ring technology can be used to address additional clinical needs. Formulations for products for allergy and dry eye are currently in development. One can envision a future in which there is a full line of products that can replace eye drops and address a variety of clinical needs.

In summary, the ocular ring is designed as a "best in class" non-invasive sustained



Figure 1: The Bimatoprost ring (a) comes in multiple sizes to ensure it will be comfortable for the patient. Once the eye is measured, the ring can be placed under the upper eye lid (b) and then under the lower lid to complete the application (c).

therapy for major eye diseases. The first product is the bimatoprost ring to treat glaucoma and ocular hypertension; this product is designed to enter and expand a market that is currently more than US\$6 billion worldwide. Furthermore, the excellent comfort, durability, retention and safety data have validated the ring as a delivery system for pipeline products in fixed combination glaucoma, dry eye, allergy, as well as for use in several active research collaborations.

REFERENCES:

1. Nordstrom BL, Friedman DS, Mozaffari E, et al, "Persistence and adherence with topical glaucoma therapy". *Am J Ophthalmol*, 2005; Vol 140, pp 598-606.
2. Data on file at ForSight VISION5, Inc.
3. Gerson Lehrman Group Survey, 2015. Data on file at ForSight VISION5, Inc.