Travoprost Intracameral Implant (iDOSE TR)
Mini-Monograph
August 2024

VA Pharmacy Benefits Management Services, Medical Advisory Panel, and VISN Pharmacist Executives

The purpose of VA National Formulary Committee drug monographs is to provide a focused drug review for making formulary decisions. The Product Information or other resources should be consulted for detailed and most current drug information

Abbreviations: BCVA=Best-corrected visual acuity; CCT=central corneal thickness; IOP=intraocular pressure; OAG=open-angle glaucoma; OHT=ocular hypertension

Description/MOA	Prostaglandin analog
Indication(s) Under Review	Reduction of IOP in patients with open-angle glaucoma or ocular hypertension
Dosage Form(s)	• Intracameral implant containing 75 mcg travoprost, pre-loaded in a single-dose inserter • IOP lowering over 12 months • Product obtained via direct purchase from MFR (Glaukos)
Dosing	Travoprost implant is administered intracamerally through a small, clear corneal incision and is anchored into the sclera at the iridocorneal angle. Travoprost implant should not be readministered to an eye that received a prior travoprost implant.
Study/Design	TWO phase 3 prospective, multicenter, 12-month, active-comparator, double-blind, non-inferiority, RCTs. One of 2 trials are published at this time. Results for the second trial was obtained from the product package insert.
Population	**Key Inclusions:** ≥18 years old, with OAG or OHT on 0-2 topical glaucoma medications, mean diurnal IOP and individual IOP 21-36 mmHg at baseline visit, CCT 440-620µm, open iridiocorneal angle (Shaffer grade ≥3) with normal anatomy, BCVA ≥20/80 Snellen **Key Exclusions:** Cup/Disc ratio > 0.8; visual field mean deviation of -12dB or worse; active ocular inflammation; prior argon laser trabeculoplasty or incisional glaucoma surgery
Demographics	Mean age 64; 46% male; 66% White; 22% Black; OAG 87%; 73% on 1-2 IOP meds; mean IOP 24mmHg; CCT 551µm
Intervention	Travoprost implant (n=197) or timolol 0.5% solution (n=193) 1 drop BID. One of the treatment arms included an implant model that is not marketed and is excluded from this review. Baseline IOP medications were discontinued
Results	**Primary endpoint:** IOP change from baseline was -6.6 to -8.5 mmHg (travoprost implant) and -6.5 to -7.7 (timolol) across the 6 timepoints (8am and 10am on day 10, week 6, and month 3). Noninferiority to timolol was demonstrated. **Secondary endpoints:** IOP change from baseline -5.5 and -5.5mmHg (travoprost implant) and -6.2 and -6.0mmHg (timolol) at 8am and 10am respectively at month 12. Did not require additional topical IOP meds 81% (travoprost implant), 83% (timolol) at month 12 **Unpublished Phase 3 trial (product package insert):** at month 3, IOP reduction was -6.8 mmHg for both travoprost implant and timolol, **36-month data from a Phase 2b trial (n=54 travoprost implant; n=49 timolol)** • Reduction in mean baseline IOP over 3 years was -7.3 to -8.0 mmHg (travoprost implant) and -7.3 to -7.9 mmHg (timolol) at the 8:00 AM timepoint • 69% (travoprost implant) and 45% (timolol) group were well controlled on the same or fewer topical IOP-lowering medications compared with screening at month 36.
Limitations	Primary outcome was to determine noninferiority to timolol at 3 months. The trial was not prospectively powered for the 12-month IOP efficacy evaluations. 36-month data for this Phase 3 trial is ongoing.
Summary	Per author conclusions, travoprost implant was noninferior to timolol in IOP reduction over a 12-month period
Boxed Warnings	None

Contraindications	Ocular or periocular infection, corneal endothelial dystrophy, prior corneal transplant, hypersensitivity to travoprost or components

Warnings/ Precautions	• Use with caution in patients with
	  • Narrow iridocorneal angles (Shaffer grade < 3) or other angle abnormalities that could impair proper placement of iDose TR at the planned implantation site.
	  • In aphakic patients, in pseudophakic patients with a torn posterior lens capsule, or in known risk factors for macular edema.
	  • Active intraocular inflammation (e.g., uveitis) because the inflammation may be exacerbated
	• Device dislocation; if implant becomes dislocated, it should be surgically removed
	• Increased pigmentation of the iris can occur. Iris pigmentation is likely to be permanent
	• **iDose TR is Magnetic Resonance Imaging (MRI) Conditional. Patients should be informed that the implant is MR Conditional (as noted on their Patient ID card). If the patient requires MRI, they should inform their healthcare provider that they have an iDose TR implanted in their eye.**
	• Intraocular inflammation
	• Endophthalmitis
	• Macular edema

Adverse Reactions	• The most commonly reported ocular adverse reactions (travoprost implant vs timolol)) were cataract (3.6% vs 1.5%); dry eye (3.6% vs 1.5%); iritis (6.2% vs 0); ocular hyperemia (2.6% vs 0); visual acuity ↓ (4.6% vs 0.5%); IOP ↑ (4.6% vs 2.1%); visual field defect (3.1% vs 1%)
	• Ocular adverse reactions reported in less than 2% of patients were conjunctival hemorrhage, photophobia, punctate keratitis, blepharitis, eye irritation
	• Serious TEAE in study eye included endophthalmitis, retinal detachment, and ↑ IOP in 3 patients (1.5%) in the implant group. There were no serious events in the timolol group
	• **Endothelial cell density (measured in a subset of 66 out of 590 eyes):** No patient in the marketed product or timolol arms exceeded the pre-defined endothelial cell less threshold of ≥20% from baseline
	• **Central Corneal Thickness:** No clinically meaningful change from baseline in any group
	• **Safety from 36 weeks phase 2b:**
	  ▪ No statistically significant difference in change from baseline in endothelial cell counts between implant and timolol groups
	  ▪ No adverse changes in CCT

Drug Interactions	Not assessed

Ocular Drug Implants Used to Treat Elevated IOP

Drug and Alternatives	Clinical Guidance	Other Considerations
Travoprost (iDose TR)	• Titanium implant reservoir with a membrane controlling the sustained release of travoprost • Administered intracamerally through a small, clear corneal incision and is anchored into the sclera at the iridocorneal angle. • IOP reduction of -6.6 to -8.4 mmHg over 3 months in patients with mean baseline IOP 24mmHg • IOP reduction -5.5mmHg at 12 months • Limited 36-month data (54 patients from phase 2b trial); phase 3 trial data pending • No significant changes in corneal endothelial cell counts or CCT • Do not readminister in eye that received prior iDose TR • Store at 2°C to 25°C (36°F to 77°F). Do not freeze. • Inserted directly through the trabecular meshwork of the anterior chamber angle into the sclera. Travoprost implant requires implantation in an operating room.	Magnetic Resonance Imaging (MRI) Conditional
Bimatoprost (DURYSTA)	• Biodegradable implant designed to release bimatoprost for 3-4 months • Administered intracamerally	

	• Mean IOP reduction of 5-8 mmHg over 15 weeks in patients with a mean baseline IOP of 24 mmHg • VERY limited data on IOP lowering at 12 months after a **single** administration of bimatoprost implant • Increased rate of corneal adverse events (e.g., endothelial cell loss, corneal edema) thought to be related to multiple implant administration (at weeks 1, 16, 32) and their accumulation in the iridocorneal angle. • Ongoing studies (NCT03850782, NCT03891446) are evaluating the safety and efficacy of repeated implant administration using longer administration intervals with as-needed administration • Do not readminister in eye that received prior bimatoprost implant • Store refrigerated at 2°C to 8°C (36°F to 46°F)	

Conclusions/Projected Place in Therapy

Travoprost implant was found to be noninferior to timolol eye drops for lowering IOP over a 12 month period. There is very limited information on effects lasting as long as 36 months. At present, travoprost implant should not be readministered to an eye that received a prior travoprost implant.

Travoprost implant should be limited to patients who are unable to use topical agents, including preservative-free or non-benzalkonium chloride agents, and laser trabeculoplasty is contraindicated or has not had adequate response to prior laser treatment.

References

- iDose® TR (travoprost intracameral implant), for intracameral administration [prescribing information]. Glaucos Corp: San Clemente, CA. Dec 2023.
- Sarkisian SR, Ang RE, Lee AM, Berdahl JP, et al., Travoprost Intracameral Implant for Open-Angle Glaucoma or Ocular Hypertension: 12-Month Results of a Randomized, Double-Masked Trial. Ophthalmol Ther. 2024 Apr;13(4):995-1014
- Berdahl JP, Sarkisian SR, Ang RE, Doan LV, et al,. Efficacy and Safety of the **Travoprost** Intraocular Implant in Reducing Topical IOP-owering Medication Burden in Patients with Open-Angle Glaucoma or Ocular Hypertension. Drugs. 2024 Jan;84(1):83-97.

Prepared June 2024 by Deb Khachikian, PharmD .
Contact person: Kelly Echevarria, PharmD, National PBM Clinical Pharmacy Program Manager, Formulary Management, VA Pharmacy Benefits Management Services (12PBM)