

UNVEILING THE MARKET POTENTIAL: MARKET RESEARCH AND BRAND STRATEGY FOR LATANOPROST, A NOVEL GLAUCOMA DRUG

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CONTENT

- Introduction
- Review of literature
- Methodology
- Results
- Discussion
- Conclusion
- Reference



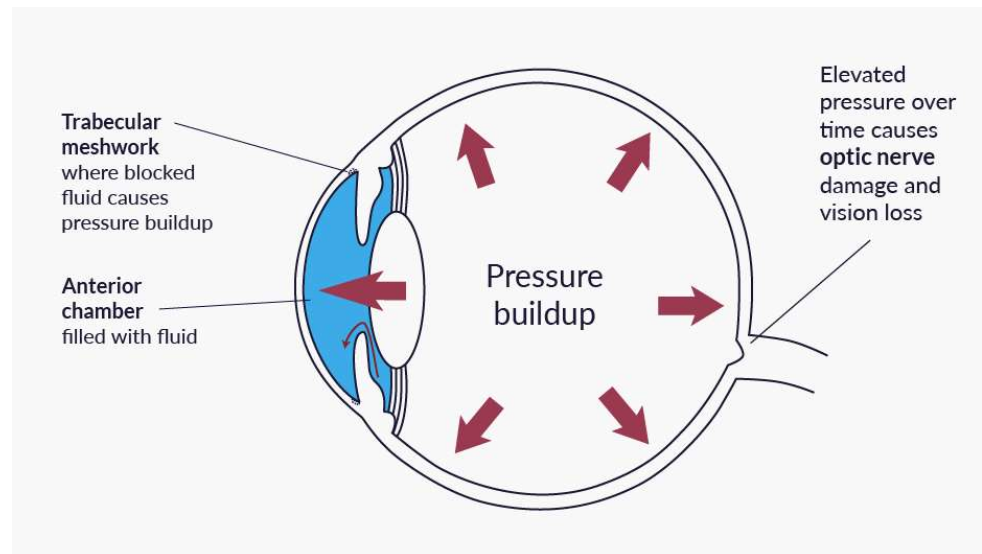
INTRODUCTION

GLAUCOMA

Glaucoma is a group of eye diseases that can cause vision loss and blindness by damaging a nerve in the back of your eye called the optic nerve.

This is generally but not necessarily associated with raised (> 21 mmHg) intraocular tension (i.o.t).

There's no cure for glaucoma, but early treatment can often stop the damage and protect your vision.

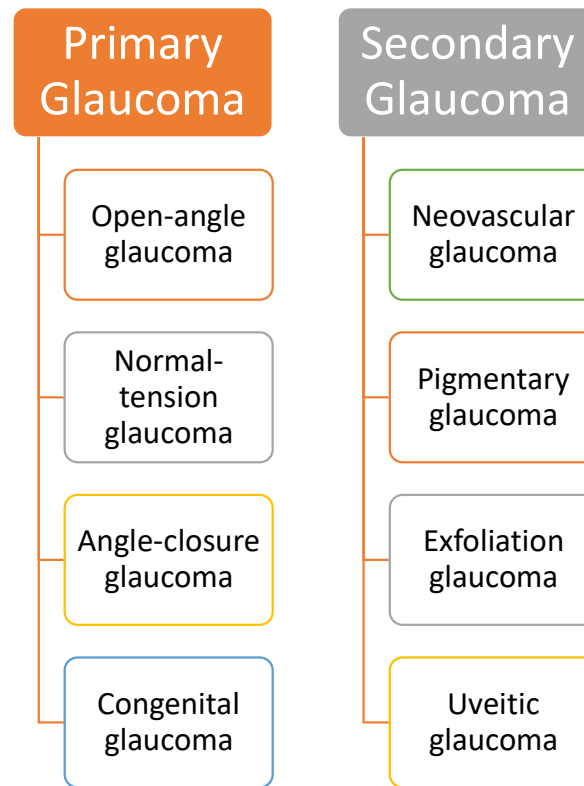




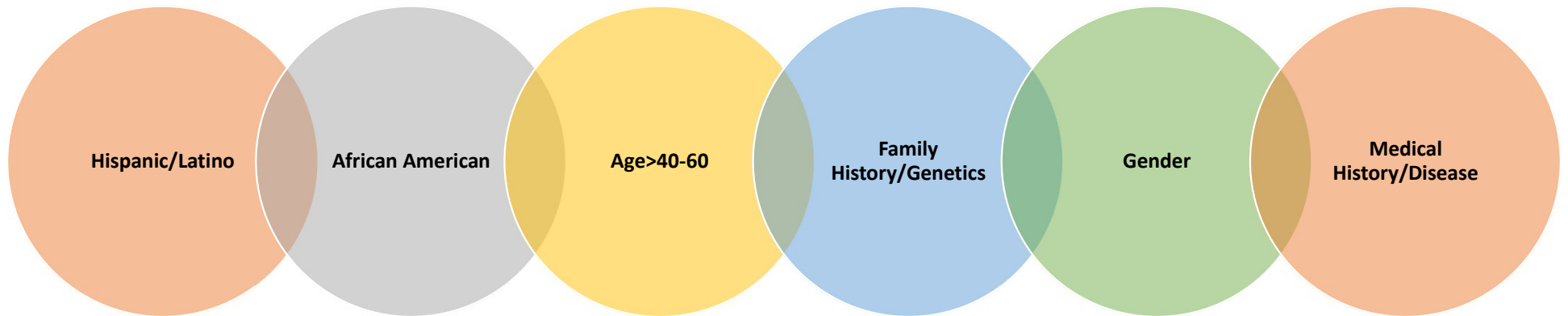
REVIEW OF LITERATURE

TYPES OF GLAUCOMA

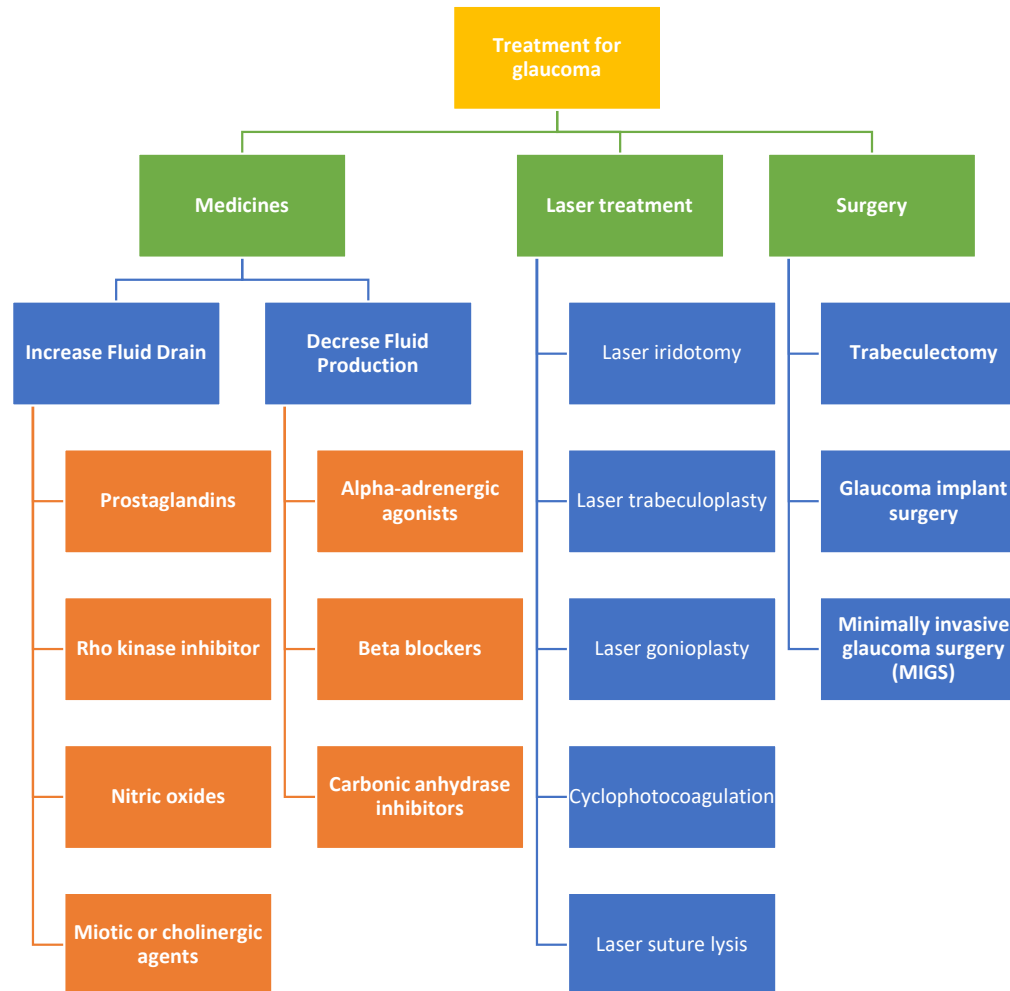
There are many different types of glaucoma, but the most common type in the United States is called open-angle glaucoma.



RISK FACTORS

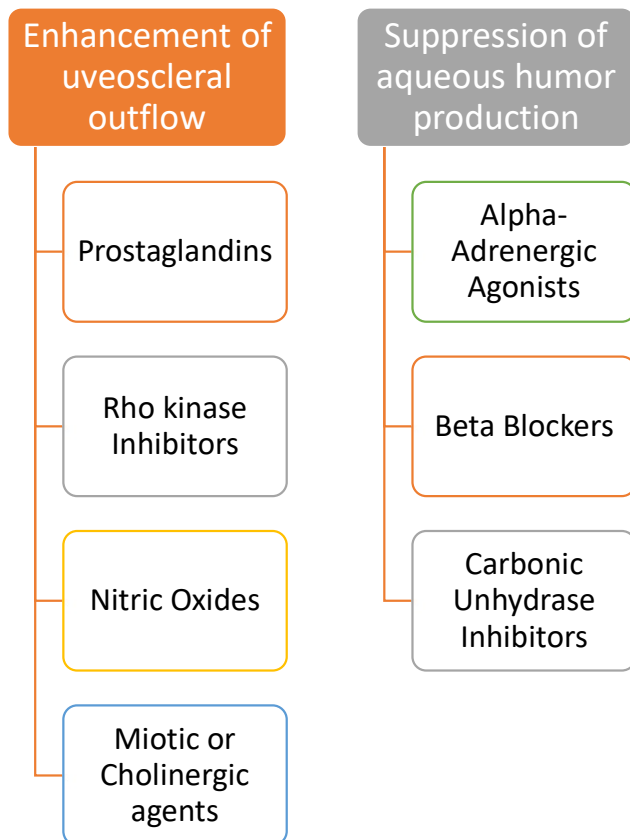


TREATMENT FOR GLAUCOMA



TREATMENT - MEDICINES

Prescription eye drops are the most common treatment. They lower the pressure in eye and prevent damage to optic nerve.



CLASS	DRUGS	MOA	DOSAGE
PROSTAGLANDINS	Latanoprost, Travoprost, Tafluprost, Bimatoprost	Enhancement of uveoscleral outflow	Once/day
RHO KINASE INHIBITORS	Netarsudil	Promotion of trabecular meshwork outflow (direct)	Two times/d
MIOTIC/CHOLINERGIC AGENTS	Pilocarpine	Promotion of trabecular meshwork outflow (indirect)	Four times/day
ALPHA ADRENERGIC AGONISTS	Brimonidine	Suppression of aqueous humor production+ promotion of uveoscleral outflow	Two times/day
B-BLOCKER	Timolol, Carteolol, Betaxolol, Levobunolol	Suppression of aqueous humor production	1–2 times/day
CARBONATE DEHYDRATASE INHIBITOR	Dorzolamide, Brinzolamide	Suppression of aqueous humor production	2–3 times/day

TREATMENT - MEDICINES

MACHENISM OF ACTION

Drugs	Mechanism of action
Latanoprost	Latanoprost selectively stimulates the prostaglandin F2 alpha receptor and this results in a decreased intraocular pressure (IOP) via the increased outflow of aqueous humor, by remodeling of the extracellular matrix and regulation of matrix metalloproteinases. These actions result in higher tissue permeability related to humor outflow pathways, which likely change outflow resistance and/or outflow rates.
Travoprost	Travoprost is absorbed through the cornea and hydrolyzed to its active metabolite, travoprost free acid. By binding to the FP receptor, travoprost free acid increases the outflow of aqueous humour via the trabecular meshwork and uveoscleral pathways, thereby reducing the intraocular pressure.
Tafluprost	Tafluprost acid is a prostanoid selective FP receptor agonist that is believed to reduce the intraocular pressure (IOP) by increasing the outflow of aqueous humor. Studies in animals and humans suggest that the main mechanism of action is increased uveoscleral outflow.
Bimatoprost	Bimatoprost imitates the effects of prostamides, specifically prostaglandin F2α. Bimatoprost mildly stimulates aqueous humor outflow, relieving elevated intraocular pressure and decreasing the risk of optic nerve damage. It is thought that bimatoprost reduces intraocular pressure (IOP) in humans by causing an increase in outflow of the aqueous humor via the trabecular meshwork and uveoscleral pathways. It achieves the above effects by decreasing tonographic resistance to aqueous humor outflow. Bimatoprost does not affect aqueous humor production.
Netarsudil	It reduces cell contraction, decreases the expression of fibrosis-related proteins, and reduces cell stiffness in the TM and SC cells. As a result, netarsudil has been able to demonstrate increases in trabecular outflow facility, increases in the effective filtration area of the TM, cause expansion of the TM tissue, and dilate episcleral veins.
Pilocarpine	The M3 receptor is a Gq-protein-coupled receptor that activates phospholipase C and upregulates inositol trisphosphate and intracellular calcium. M3 receptor activation has been implicated in smooth muscle contraction. Pilocarpine is an agonist for M1 and M2 receptors, and is a full and partial agonist at the M3 receptor.
Brimonidine	brimonidine is rapidly absorbed into the eye, acts as an agonist at ocular alpha-2 adrenoceptors and lowers IOP via a complex Gi-coupled signaling cascade pathway. Activation of alpha-2 receptors leads to inhibition of adenylyl cyclase and reduction of cyclic AMP levels. As a result, there is a decrease in norpinephrine (NE) release at the synaptic junction, NE-induced stimulation of beta-2 adrenoceptors, and production of aqueous humor by the ciliary epithelium.

TREATMENT - MEDICINES

MACHENISM OF ACTION

Drugs	Mechanism of action
Timolol	It likely decreases the secretion of aqueous humor in the eye. According to one study, the reduction of aqueous humor secretion may occur through the decreased blood supply to the ciliary body resulting from interference with the active transport system or interference with prostaglandin biosynthesis.
Carteolol	The primary mechanism of the ocular hypotensive action of carteolol in reducing intraocular pressure is most likely a decrease in aqueous humor production. This process is initiated by the non-selective beta1 and beta2 adrenergic receptor blockade.
Betaxolol	Betaxolol is a lipophilic beta-adrenoceptor antagonist relatively selective for beta 1-adrenoceptors with only weak beta 2-blocking activity. Used topically in glaucoma and ocular hypertension
Levobunolol	Reduce the production of aqueous humor via blockage of endogenous catecholamine-stimulated increases in cyclic adenosine monophosphate (AMP) concentrations within the ciliary processes.
Dorzolamide	Carbonic anhydrase (CA) is a ubiquitous enzyme that catalyzes the reversible hydration of carbon dioxide to bicarbonate ions and dehydration of carbonic acid. In the ocular ciliary processes, the local production of bicarbonate by CAs promotes sodium and fluid transport. CA-II is a key isoenzyme found primarily in red blood cells (RBCs) that regulates aqueous humour production. Dorzolamide is a highly specific CA-II inhibitor, where it displays a 4000-fold higher affinity for carbonic anhydrase II than carbonic anhydrase I. The inhibition of CA-II in the ciliary process disrupts the formation of bicarbonate ions and reduces sodium and fluid transport, which leads to decreased aqueous humour secretion and reduced intraocular pressure.
Brinzolamide	Brinzolamide is a highly specific, non-competitive, reversible, and effective inhibitor of carbonic anhydrase II (CA-II), able to suppress formation of aqueous humor in the eye and thus decrease IOP. It can catalyze the reversible reaction of water and carbon dioxide (CO2) to form negatively charged bicarbonate ions. Although there are 7 isoforms of CA in human tissues, brinzolamide has the highest affinity to CA II.



METHODOLOGY

METHODOLOGY

Objective :

Objective	Method	Result
To Analyse the existing market landscape of glaucoma treatment options to understand current trends.	Market Analysis: Analysed the data gathered from market reports, scholarly publications, and government data.	Identified current trends, market size, key players, emerging therapies, patient preferences in glaucoma treatment.
To evaluate the clinical efficacy, safety, and patient adherence of Latanoprost in comparison to other glaucoma medications.	Comparative Study: Performed a comparative analysis using clinical trial data, and existing literature on Latanoprost and other glaucoma medications.	Latanoprost demonstrated higher efficacy, favourable safety profile, and better patient adherence compared to alternatives.
To develop a brand positioning strategy that emphasizes the distinct advantages of Latanoprost.	Strategic Planning: Utilize SWOT analysis, marketing mix (4Ps), and target market analysis.	Formulated a brand positioning strategy that highlights Latanoprost's superior efficacy, lower side effects, and higher patient compliance for its market launch and adoption.

Literature Review :

- Carried out a thorough analysis of pertinent research on marketing tactics and therapies for glaucoma.
- Recognized important frameworks, theories, and concepts pertaining to marketing tactics and glaucoma remedies.
- Acquired data from industry reports, conference papers, scholarly publications, and other trustworthy sources.
- Analyzed some government data about the size of the glaucoma market and its potential future developments.

METHODOLOGY

Study design:

Determined study design for the study is Quantitative, Qualitative and Mixed Approaches

Data collection:

- Identified sources of secondary data for research.
- Databases, industry reports, government publications, and case studies are examples of secondary data sources.

Marketing Analysis:

- Examined the marketing plans currently in use for Glaucoma treatments.
- Assessed the efficacy of different Glaucoma therapies, marketing platforms, and strategies.
- Evaluated how pricing, distribution, branding, and positioning affect the uptake and sales of Glaucoma medicines.

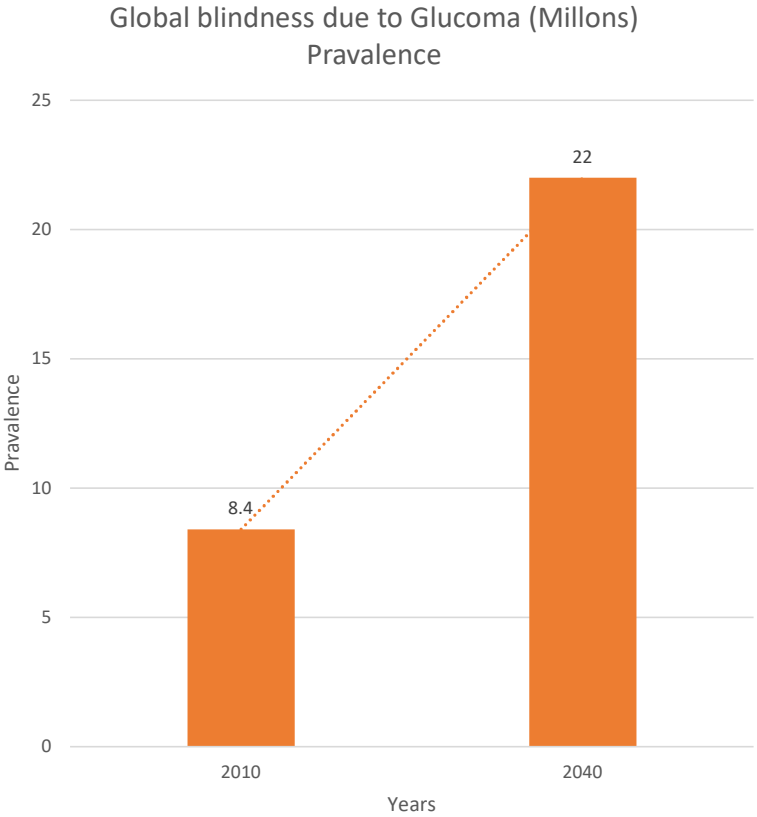
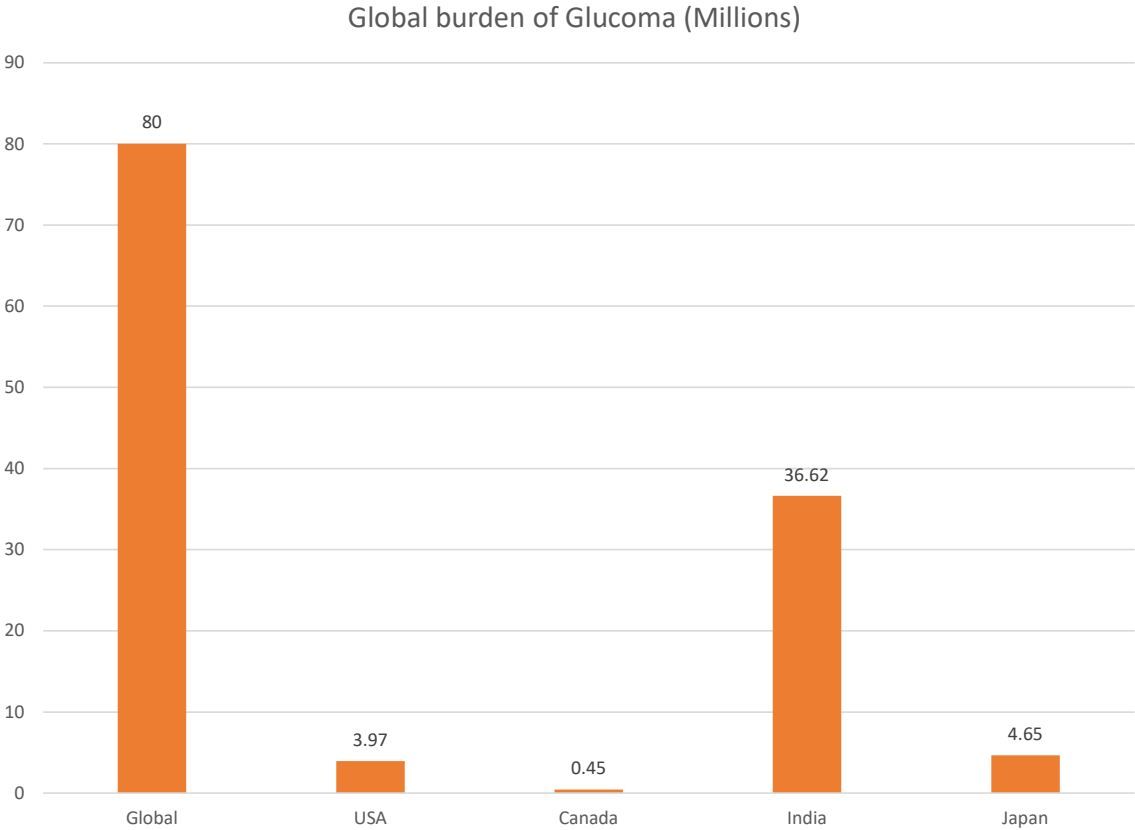
Ethical Considerations:

It is just as crucial to take ethical considerations into account when conducting research as it is to select the best research procedures and techniques. Every secondary information is gathered from publicly accessible sources that do not guarantee data privacy. Additionally, the study and data would only be utilised for academic purposes.



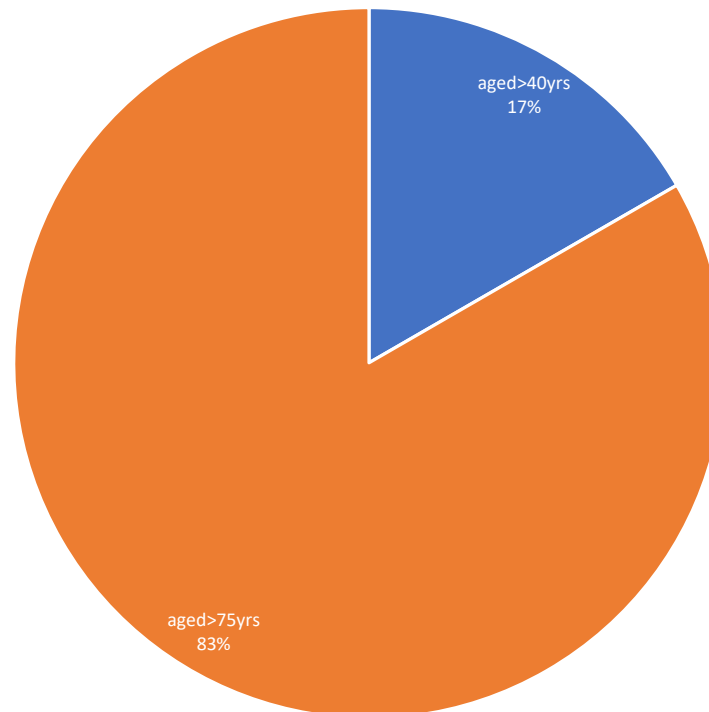
RESULTS

BURDEN OF GLAUCOMA - GLOBAL



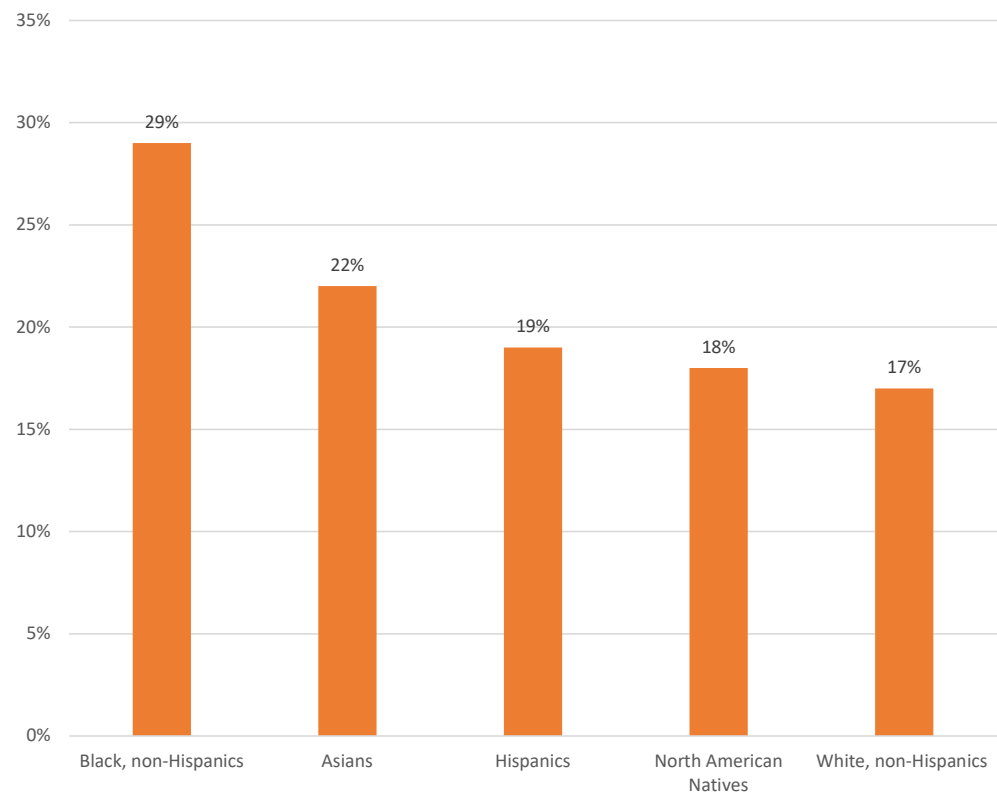
BURDEN OF GLAUCOMA - UK

UK - Glucoma pravalence based on age group (%)

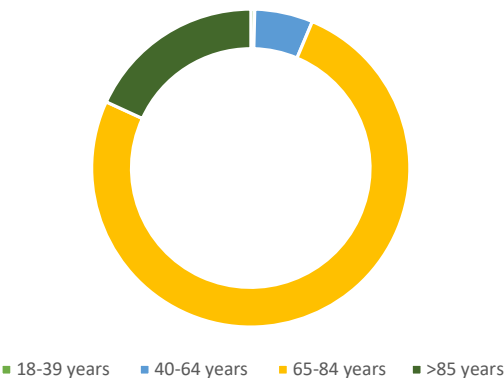


BURDEN OF GLAUCOMA - USA

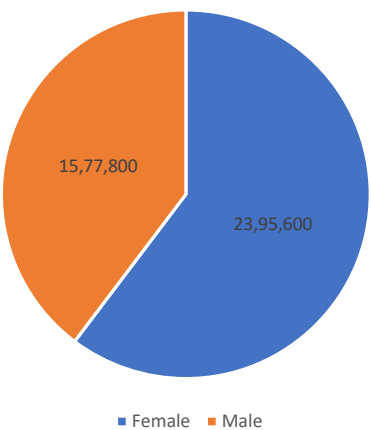
USA - Glucoma pravalence based on Race (%)



USA - Glucoma pravalence based on Age group Pravalence



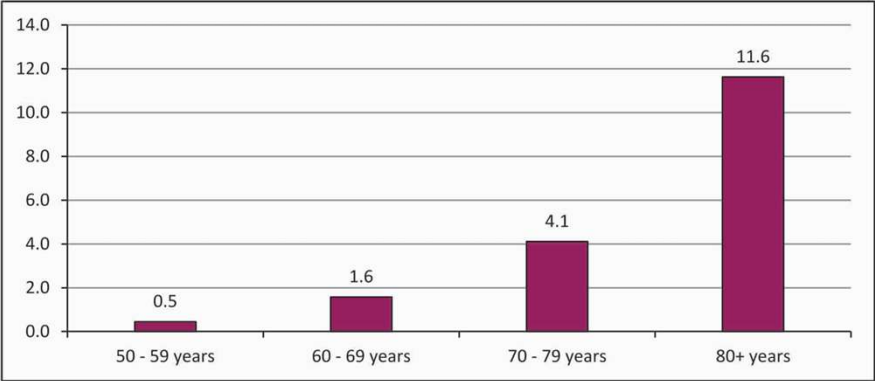
USA - Glucoma cases based on gender Pravalence



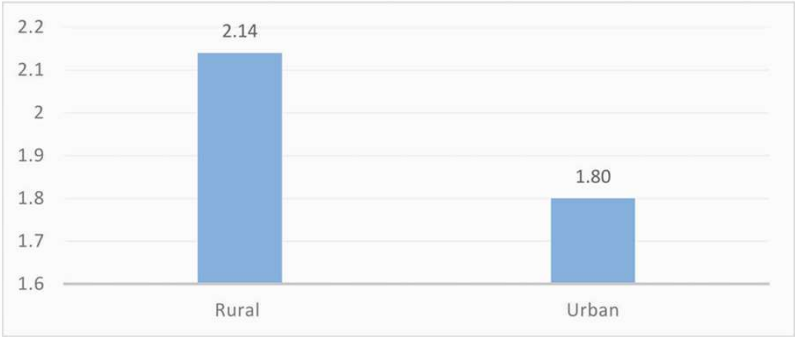
BURDEN OF GLAUCOMA - INDIA

The National Blindness and Visual Impairment Survey 2015-2019

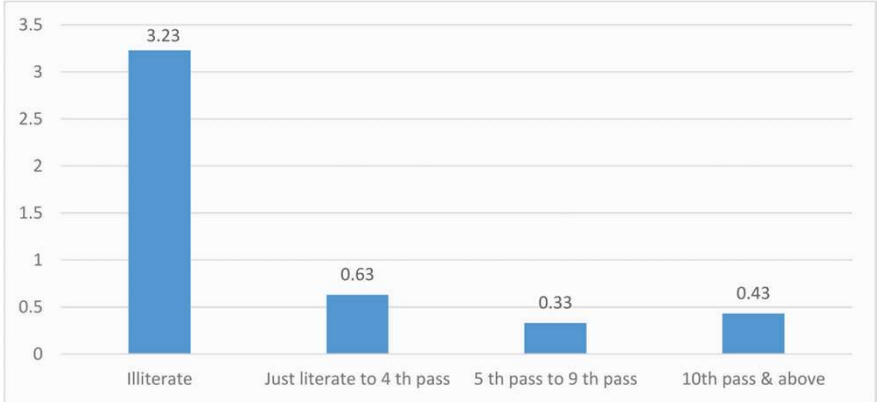
Age wise prevalence of blindness in population aged ≥ 50 years.



Urban rural wise prevalence of blindness in population aged ≥ 50 years.



Literacy wise prevalence of blindness in population aged ≥ 50 years.



COMPARISON AMONG DIFFERENT DRUGS

Parameters	Latanoprost	Travoprost	Tafluprost	Bimatoprost	Netarsudil	Brimonidine	Timolol	Dorzolamide-Timolol Fixed Combination	Brinzolamide
Efficacy	Equally effective as bimatoprost and travoprost & more effective than timolol, dorzolamide, and brimonidine in reducing IOP.	Similar efficacy to other PGAs like latanoprost and bimatoprost.	Significant IOP reduction in Chinese patients with POAG and OH. Superior efficacy compared to other PGAs.	Improved local tolerance compared to higher concentration formulations.	Modest improvements in IOP when used as adjunctive therapy with two or more medications	Effective in reducing IOP, both as monotherapy and adjunctive therapy.	Significant efficacy in reducing IOP.	Improved efficacy compared to β-blockers alone.	Effective in reducing IOP, with dose-dependent reductions observed.
Duration of Action	Once-daily dosing.	Once-daily dosing.	Once-daily dosing.	Once-daily dosing.	Twice daily dosing.	Twice daily dosing.	Once/Twice daily dosing.	-	2/3 times daily dosing.
Convenience of Use	Once-daily dosing regimen, improving patient compliance.	Prolonged IOP-reduction beyond 24-hour dosing interval.	Once-daily dosing enhances long-term adherence to treatment.	Once-daily dosing enhances long-term adherence to treatment.	Provides sustained reduction in IOP.	Can be used as adjunctive therapy	Reduction in IOP maintained over time.	Reduces the number of eye drops required, improving convenience.	Provides sustained release and prolonged duration of action.
Combination Therapy	Can be used in combination therapy.	Can be used in fixed dose/combinations therapy with other drugs like timolol to enhance IOP reduction.	Can be used in combination therapy.	-	Can be used in combination therapy.	Can be used effectively as monotherapy or adjunctive therapy .	Can be used in combination therapy.	-	Can be used as adjunctive therapy, enhancing overall efficacy of treatment regimens.
Safety Profile	Generally well-tolerated with minimal systemic side effects. Lower risk of hyperemia compared to other prostaglandin analogs like travoprost and bimatoprost	Favorable safety profile with mild and transient side effects. Lower incidence of iris hyperpigmentation.	Favorable safety profile with minimal ocular and systemic adverse events.	Good tolerability and safety.	Generally well-tolerated, with adverse events mostly mild or moderate in severity.	Common side effects include conjunctival hyperemia, ocular allergy, and ocular pruritus. Less common systemic side effects such as oral dryness and fatigue.	Preservative-free formulations reduce the risk of ocular surface irritation and inflammatory reactions.	Preserved DTFC formulations may contribute to ocular toxicity.	Generally well-tolerated, with mild and transient ocular adverse events.
Combination Formulations present in USA	YES (with Netarsudil)	NO	NO	NO	YES (with Latanoprost)	YES (with Timolol and Brinzolamide)	YES (with Brimonidine and Dorzolamide)	-	YES (with Brimonidine)

IMPACT OF PRESERVATIVES (USA)

Roughly half of all patients on long-term glaucoma therapy suffer from ocular surface disease (OSD)

OSD can cause redness, tearing, irritation, burning, foreign body sensation, light sensitivity, and sometimes blurred vision.

Medication (USA)	Drug	Strength	Manufacturer
Zioptan	Tafluprost	0.0015	Akorn
Cosopt PF	Dorzolamide/Timolol	2%/0.5%,	Akorn
Timoptic in Ocudose	Timolol maleate	0.25% & 0.5%.	Valeant Pharma
Iyuzeh	Latanoprost	0.005 %	Thea Pharma

TABLE 1. CHARACTERISTICS OF PRESERVATIVES COMMONLY USED IN GLAUCOMA MEDICATIONS

Preservative	Mechanism	Advantages	Disadvantages	Medications
BAK	Detergent	Excellent broad antimicrobial efficacy, weakens corneal epithelial tight junctions to facilitate drug's entry	Corneal epithelial breakdown and tear film instability	Azopt, Lumigan, Timoptic, Xalatan
Purite	Oxidative stress	Less conjunctival inflammation and corneal toxicity than BAK	Mild cytotoxicity still present	Alphagan P
SofZia	Oxidative stress	Less conjunctival inflammation and corneal toxicity than BAK	Mild cytotoxicity still present	Travatan Z

Abbreviation: BAK, benzalkonium chloride.
Manufacturing information: Azopt (Akorn); Lumigan, Purite, Alphagan P (Allergan); Timoptic (Valeant Pharmaceuticals); Xalatan (Pfizer); SofZia, Travatan Z (Alcon).

TABLE 2. COMMONLY PRESCRIBED GLAUCOMA MEDICATIONS WITH THEIR CORRESPONDING PRESERVATIVE^a

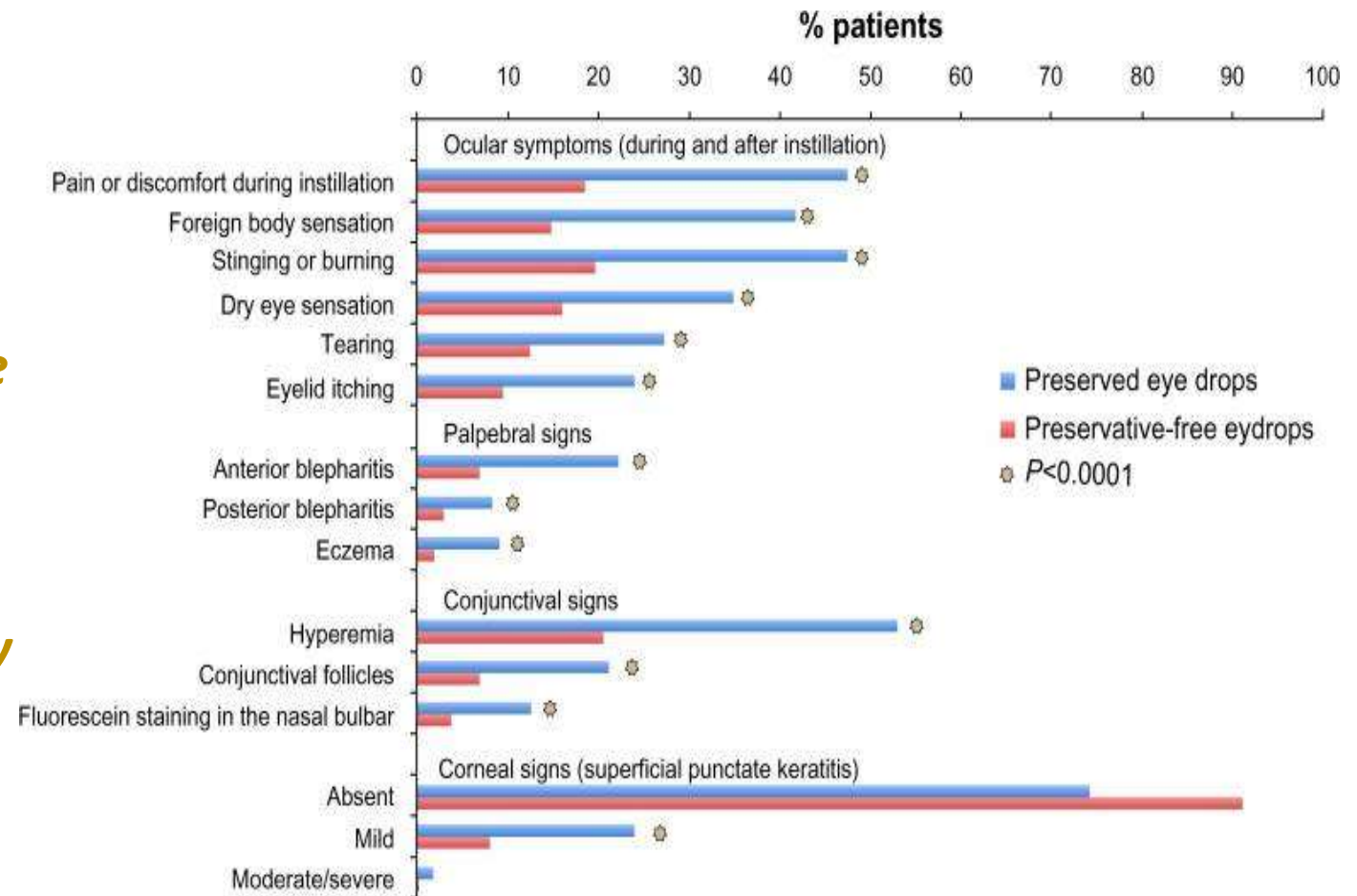
Medication	Preservative
Xalatan	BAK 0.02%
Lumigan	BAK 0.02%
Azopt	BAK 0.01%
Timoptic	BAK 0.01%
Trusopt	BAK 0.0075%
Cosopt	BAK 0.0075%
Combigan	BAK 0.005%
Travatan Z	SofZia
Alphagan P	Purite
Zioptan	None
Cosopt PF	None
Timoptic in Ocudose	None

Abbreviation: BAK, benzalkonium chloride.
Manufacturing information: Xalatan (Pfizer); Lumigan, Alphagan P, Purite (Allergan); Azopt, Cosopt, Zioptan, Cosopt PF (Akorn); Trusopt (Merck); Combigan, Travatan Z, SofZia (Alcon); Tafluprost; Timoptic , Timoptic in Ocudose (Valeant Pharmaceuticals).
^a Listed in descending order of BAK concentration.

IMPACT OF PRESERVATIVES

Ocular symptoms and signs with preserved and preservative-free glaucoma medications.

Several studies have demonstrated that products without preservatives are more likely to be better tolerated and, therefore, improve compliance and quality of life, and possibly even efficacy.

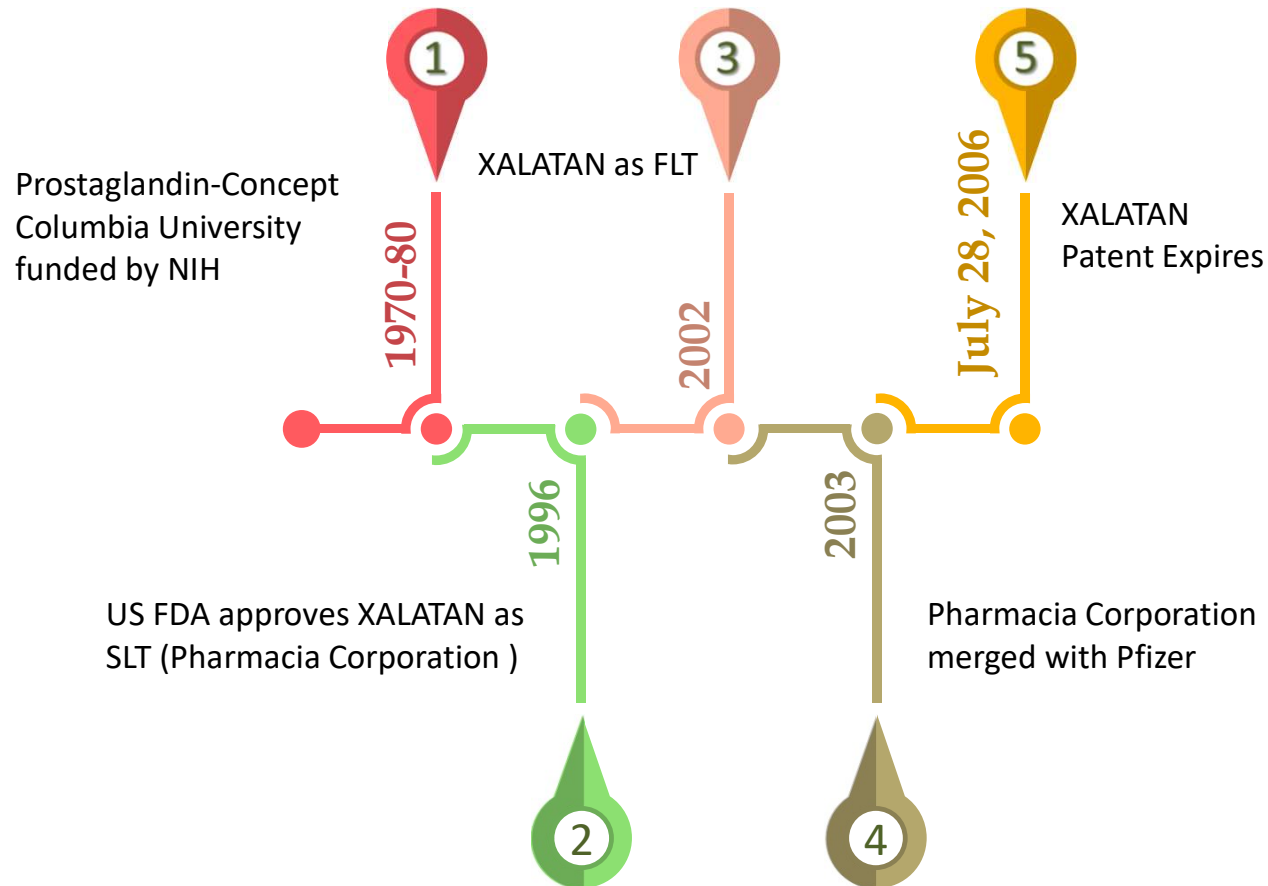




DISCUSSION

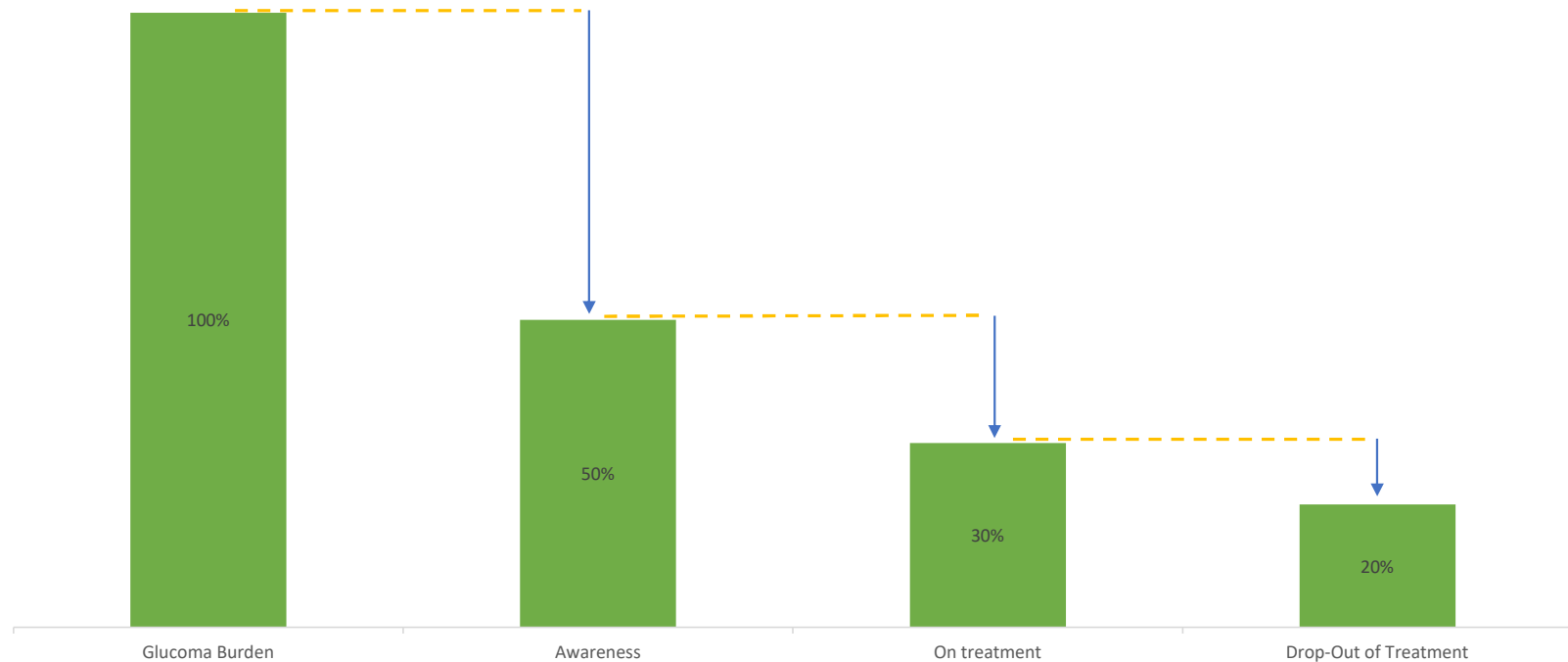
LATANOPROST - HISTORY

PROSTAGLANDIN



LATANOPROST - WHY

PROSTAGLANDIN



It is desirable to select drugs for treatment that are not only effective but also easy to adhere to.

LATANOPROST - WHY

PROSTAGLANDIN

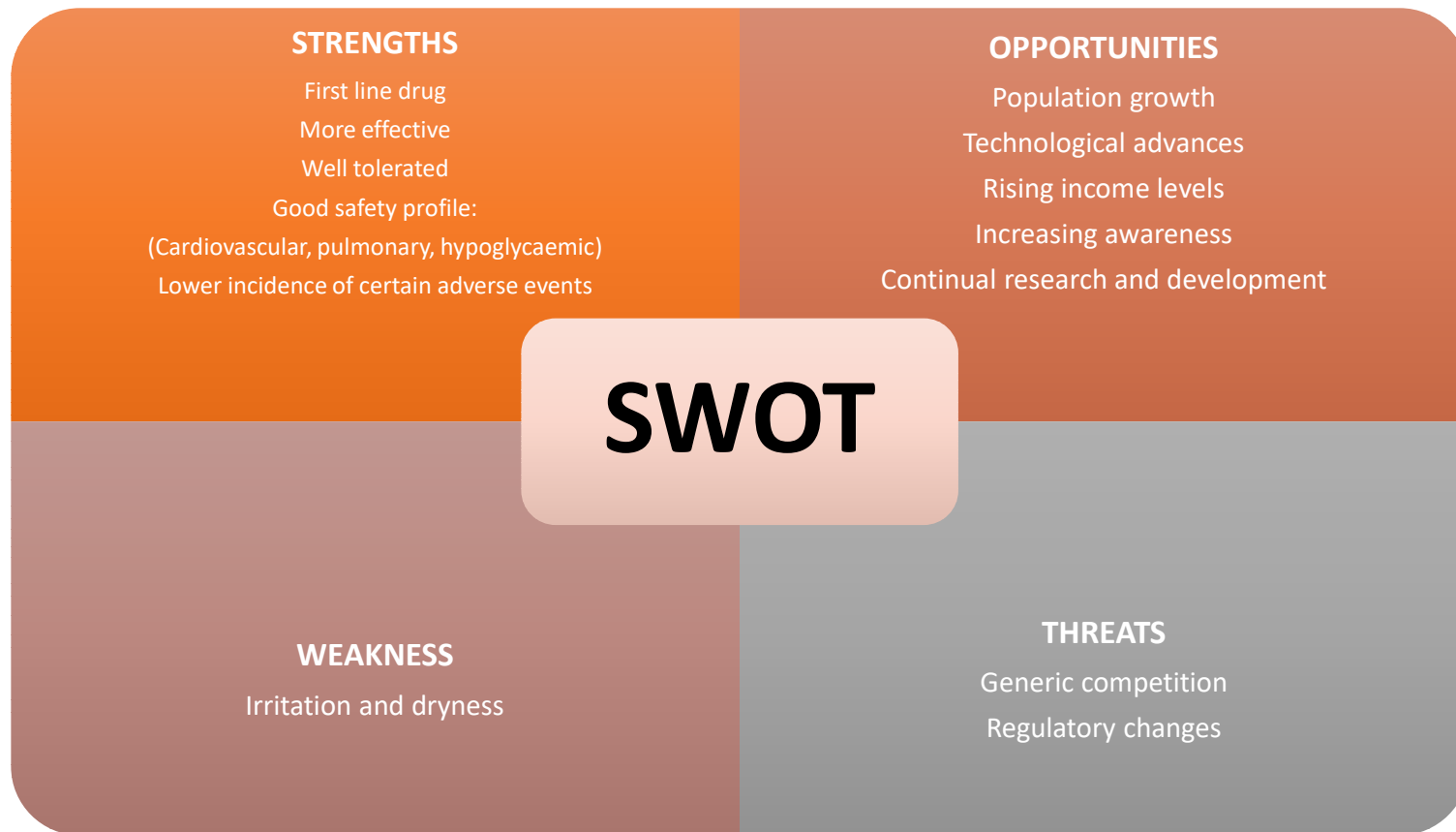
Aspect	Latanoprost	Travoprost	Bimatoprost
Reduction IOP	• Higher	• Like Latanoprost	• Like Latanoprost
Hyperemia	• Lower risk	• Higher risk	• Higher risk
Hypertrichosis	• Lower incidence	• Higher incidence	• Higher incidence
Periocular Skin Pigmentation	• Lower incidence	• Higher incidence	• Higher incidence

LATANOPROST - WHY

PROSTAGLANDIN

Aspect	Latanoprost	Timolol	Dorzolamide	Brimonidine
Efficacy	• More effective	• Less effective	• Less effective	• Less effective
IOP Reduction	• Significantly more	• Significantly less	• Significantly less	• Significantly less
Safety	• Better Tolerance	• No Data Available	• No Data Available	• No Data Available

LATANOPROST - SWOT ANALYSIS



LATANOPROST - COMPETITORS

PROSTAGLANDIN



PHASES	NO. OF TRIALS
Phase 0	4
Phase I	21
Phase II	61
Phase III	113
Phase IV	38
Phase I/II	11
Phase II/III	1
Phase III/IV	1
total	250



LATANOPROST - COMPETITORS

Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations

Active Ingredient	Proprietary Name	Dosage Form	Applicant Holder	Approval Date
LATANOPROST	XELPROS	EMULSION	SUN PHARMACEUTICAL INDUSTRIES LTD	Sep 12, 2018
LATANOPROST	IYUZEH	SOLUTION/DROPS	THEA PHARMA INC	Dec 13, 2022
LATANOPROST	LATANOPROST	SOLUTION/DROPS	AMRING PHARMACEUTICALS INC	Mar 22, 2011
LATANOPROST	LATANOPROST	SOLUTION/DROPS	BAUSCH AND LOMB INC	Mar 22, 2011
LATANOPROST	LATANOPROST	SOLUTION/DROPS	CARNEGIE PHARMACEUTICALS LLC	Feb 11, 2013
LATANOPROST	LATANOPROST	SOLUTION/DROPS	FDC LTD	Apr 22, 2016
LATANOPROST	LATANOPROST	SOLUTION/DROPS	SANDOZ INC	Mar 22, 2011
LATANOPROST	LATANOPROST	SOLUTION/DROPS	SOMERSET THERAPEUTICS LLC	Mar 22, 2011
LATANOPROST	XALATAN	SOLUTION/DROPS	UPJOHN US 2 LLC	Jun 5, 1996
LATANOPROST; NETARSUDIL DIMESYLATE	ROCKLATAN	SOLUTION/DROPS	ALCON LABORATORIES INC	Mar 12, 2019
LATANOPROSTENE BUNOD	VYZULTA	SOLUTION/DROPS	BAUSCH AND LOMB INC	Nov 2, 2017
LATANOPROST	LATANOPROST	SOLUTION/DROPS	APOTEX INC	Mar 22, 2011
LATANOPROST	LATANOPROST	SOLUTION/DROPS	EPIC PHARMA LLC	Jul 19, 2011
LATANOPROST	LATANOPROST	SOLUTION/DROPS	EUGIA PHARMA SPECIALITIES LTD	Sep 3, 2019

AVAILABLE MEDICINE FOR LATANOPROST IN INDIA	
Xalatan	₹596 1 variant(s)
Viatris	
Latoprost RT	₹610 1 variant(s)
Sun Pharmaceutical Industries Ltd	
Latoprost	₹587 1 variant(s)
Sun Pharmaceutical Industries Ltd	
9 PM	₹610 to ₹629 2 variant(s)
Cipla Ltd	
Latina RT	₹585 1 variant(s)
Zydus Cadila	
Lacoma PF	₹489 1 variant(s)
Ajanta Pharma Ltd	
Laprost	₹348 1 variant(s)
Micro Labs Ltd	
Latochek	₹113 to ₹211 2 variant(s)
Indoco Remedies Ltd	
Latofix	₹399 1 variant(s)
Care Formulation Labs Pvt Ltd	
Eldiprost	₹550 1 variant(s)
Elder Pharmaceuticals Ltd	

MARKETING STRATEGY

STP - SEGMENTATION

Demographic Segmentation:

Age: Primarily target older adults (above 40 years) as glaucoma is more prevalent in this age group.

Gender: Both males and females, with a slight focus on females as they are at a higher risk.

Geographic Segmentation:

Urban areas with access to ophthalmologists and advanced healthcare facilities.

Tier-1 and Tier-2 cities in India.

Behavioral Segmentation:

Patients already diagnosed with glaucoma.

Patients with chronic conditions such as high blood pressure and diabetes who are at higher risk for glaucoma.

MARKETING STRATEGY

STP - TARGETING

Primary Target:

Eye care professionals and ophthalmologists who prescribe treatments for glaucoma.

General practitioners and endocrinologists treating patients with high blood pressure and diabetes.

Secondary Target:

Pharmacies that dispense Latanoprost.

STP - POSITIONING

Value Proposition:

Efficacy: Proven to reduce intraocular pressure effectively.

Convenience: Once-daily dosing for better compliance.

Safety: Well-tolerated with minimal side effects.

Available at affordable price

MARKETING MIX

PRODUCT

Product: The drug is available in the form of Eyedrop

Composition – Latanoprost is the drug present in the product

Dose Variants – The drug is available in a dosage of 0.005% w/v

Packaging – The drug is packed in a 2.5 ml sterile isotonic solution

PRICE

Price Rs.510.00

10% discount at consumer level

10% margin at Distributor level

18% margin at retain level

5% commission for doctors

20 days Credit payment period

MARKETING MIX

PLACE



Collaboration with well-established national & local Distributor channels



Ensure Product availability at all pharmacies, hospitals, clinics, or online pharmacies



Ensure Product availability in Urban as well as Rural areas



Strategic alliances with the local players in foreign markets

MARKETING MIX

PROMOTION

Targeted Marketing Campaigns:

Free eye check-up camps in urban areas, Research Campaign, CMEs (Online, Offline), KOL engagement

Physician Education:

Leaflets, Scientific Literature, 3D Visual Aids

Sales Distribution:

Establish partnerships with pharmacies, hospitals, and healthcare providers, Provide Sample Items

Digital Marketing:

Use social media, health blogs, and online forums to reach target customers.

Traditional Marketing:

Print ads in health magazines, clinic posters, and pharmacy brochures.

Direct Marketing:

Educational seminars for eye care professionals and patient awareness campaigns.

Sales Force:

Monthly, Quarterly, Yearly Incentives and Bonuses

IMPLEMENTATION & CONTROL

Implement the strategy into the market

24/7 helpline for patient queries and support.

Regular visit to doctors by sales force

Distribute Samples, Visual aids, or other promotional materials

Aggressive advertising in front of Ophthalmologists, Endocrinologists

Take regular reports from sales force on daily basis

Periodic monitoring, Market trend analysis

Collaborate with Area sales managers and Regional Sales managers periodically

Communicate with marketing team for digital marketing



CONCLUSION

CONCLUSION

Our comprehensive analysis of the glaucoma treatment market reveals significant insights into current trends, patient preferences, and unmet needs. The clinical evaluation highlights Latanoprost's superior efficacy, favorable safety profile, and high patient adherence rates when compared to other available treatments. This evidence supports the formulation of a robust brand positioning strategy for Latanoprost, emphasizing its unique benefits, such as enhanced clinical performance and patient-friendly attributes.

By strategically positioning Latanoprost to address the specific needs and preferences of glaucoma patients, we can effectively differentiate it in the market. This approach not only underscores Latanoprost's competitive advantages but also aligns with our commitment to improving patient outcomes and satisfaction. As a result, Latanoprost is well-poised to become a leading choice in glaucoma management, offering a compelling solution that meets the diverse requirements of patients and healthcare providers alike.



REFERENCE

REFERENCE

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2. <https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/glaucoma/types-glaucoma>
3. <https://www.nei.nih.gov/learn-about-eye-health/eye-conditions-and-diseases/glaucoma/glaucoma-and-eye-pressure>
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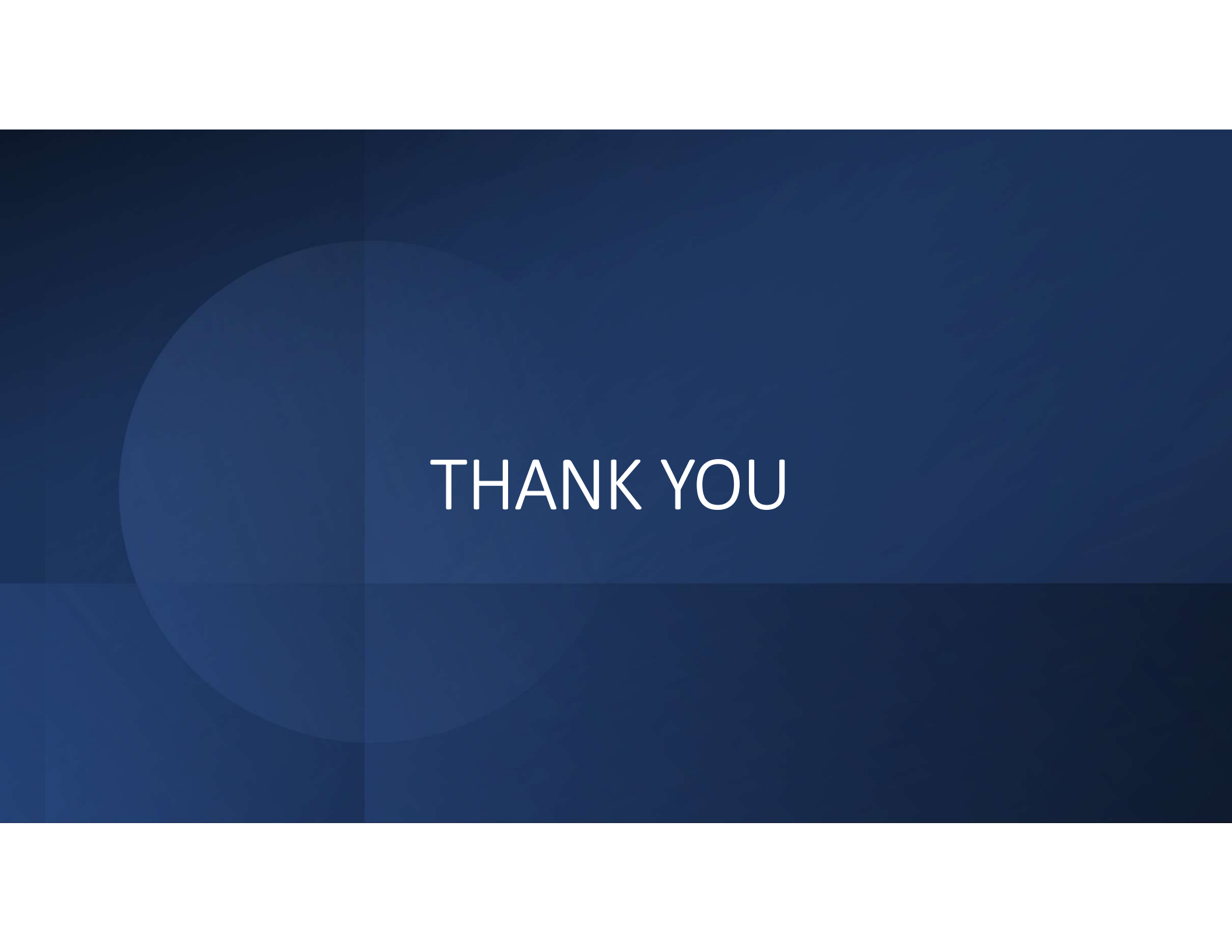
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THANK YOU