Part 1 – Pharmacological Pathway for Treatment and Management of Open Angle Glaucoma and Ocular Hypertension

Summary of NICE guideline for the diagnosis and management of Glaucoma:
Before offering medication any relevant comorbidities or potential drug interactions need to be checked carefully.

A single drug should be started and its effectiveness at lowering eye pressure and any side effects should be assessed usually upon follow-up. If there is no intraocular pressure (IOP) response, the patient has been adherent to treatment and eye drop instillation technique has been checked, the drug should be stopped and another tried from a different class. If there is a satisfactory IOP drop but insufficient to meet the target pressure then a second drug may be added.

Medical therapy of more than three topical agents- one separate and one combination should trigger consideration for either laser or surgery. Maximal medical treatment would consist of all 4 classes of topical pressure lowering medication and possible oral acetazolamide.

The Guideline should be adhered to for all new patients. No change in treatment plan is recommended for patients already on different medications when there is satisfactory IOP response. Non-responders should be switched to a different class of drug.
All patients must be prescribed generic drugs$^{\Delta}$ unless otherwise required for clinical reasons which must be identified on a case by case basis and appropriately communicated to GPs.

Step 1

1st line: prostaglandin analogues Safer than ß-blockers and probably more effective at lowering IOP
2nd line: β-blockers However, can be used as first line for unilateral glaucoma patients or as a result of adverse effects to prostaglandin analogues. Not to be prescribed if there is history of bronchospasm and stopped immediately if patient develops cardiac or respiratory related side effects.

↓

Step 2

Prostaglandin analogue **PLUS** β-blocker **OR**
Prostaglandin analogue **PLUS** ROCK inhibitor (if β-blockers are contraindicated and patients can tolerate preservatives – NICE TA 1009)

↓

Step 3

If step 2 is insufficient to achieve desired target IOP
ADD carbonic anhydrase inhibitor
AND/OR α-adrenergic agonist

↓

Step 4

If the patient is on Prostaglandin analogue **PLUS** β-blocker (+ carbonic anhydrase inhibitor + α-adrenergic agonist therapy) in step 3, and this has been insufficient to achieve desired target IOP
Discontinue Prostaglandin analogue + β-blocker and replace with Prostaglandin analogue + ROCK-inhibitor in addition to step 3

*Use of Preservative Free Formulations:
Preservative free formulations are restricted to patients with preservative intolerance and/or people with clinically significant and symptomatic ocular surface disease or younger patients likely to need long term therapy.

[Δ]Brand Prescribing of preservative free multi-dose bottles (MDB)
Multidose bottle (MDB) products are preferred alternatives to single dose unit (SDU) preservative free eye (PF) drops and are to be prescribed by BRAND in primary care. See Appendix 1. Use of MDB PF over SDU PF eye drops is cost effective, uses 90% less plastic and is friendlier to the environment. There may be individual patient circumstances where the SDU PF product is appropriate for the patient e.g. dexterity issues or intolerance to excipients. Where this is the case, the initiating ophthalmologist will include the clear rationale for the choice of SDU PF in the outpatient/discharge communication to primary care. Note - there is not a preferred MDB option for travoprost 0.004% SDU PF eye drops.

Full NICE Pathway for treating and management of Glaucoma found at:
https://pathways.nice.org.uk/pathways/glaucoma#path=view%3A/pathways/glaucoma/managing-glaucoma.xml&content=view-node%3Anodes-ocular-hypertension-treatment

Part 2 – Glaucoma Service Prescribing Guideline for Open Angle Glaucoma and Ocular Hypertension

Drug	Place in therapy	With Preservative	Preservative Free (Patients with preservative intolerance, significant and symptomatic ocular surface disease or younger patients likely to need long term therapy)*Δ
Prostaglandin analogues	1st Line	1st **latanoprost 0.005% eye drops** 2nd **travoprost 0.004% eye drops** 3rd **bimatoprost 0.01% eye drops**	1st **latanoprost 0.005% multidose bottle (MDB) eye drops** 2nd **travoprost 0.004% single use eye drops** 3rd **bimatoprost 0.03% multidose bottle (MDB) eye drops**
β-blockers	2nd Line	2nd **timolol 0.25% eye gel (long action)**	1st **timolol 0.1% eye gel unit dose preservative free** (used first line regardless of P/F need)
Carbonic anhydrase inhibitor	3rd Line	1st **brinzolamide 1% eye drops** 2nd **dorzolamide 2% eye drops**	1st **dorzolamide 2% multidose bottle (MDB) eye drops**
α-adrenergic agonist	3rd Line	1st **brimonidine 0.2% eye drops**	

Combination Therapies: TO BE USED WHEN ADHERENCE/COST ISSUES ARISE

Choice needs to be made according to patient's concurrent and/or previous therapy

Combination Therapies	With Preservative	Preservative Free
Prostaglandin analogue + β-blocker	**latanopost/timolol** **bimatoprost/timolol** **travoprost/timolol***	1st **latanoprost/timolol** 2nd **bimatoprost/timolol multidose bottle (MDB)**
Prostaglandin analogue + ROCK inhibitor (if tried a fixed-dose combination or if β-blockers are contraindicated)	**latanoprost + netarsudil (in line with NICE TA 1009)**	
Carbonic anhydrase inhibitor + β-blocker	**dorzolamide/timolol** **brinzolamide/timolol**	**dorzolamide/timolol multidose bottle (MDB)**
α-adrenergic agonist + β-blocker	**brimonidine/timolol**	
Carbonic anhydrase inhibitor + α-adrenergic agonist	**brinzolamide/ brimonidine**	

ADD APRACLONIDINE 0.5% EYE DROP: used short term to delay laser treatment or surgery in patients with glaucoma not adequately controlled by other drugs, however, some patients may benefit from treatment with apraclonidine 0.5% for longer periods.

USE APRACLONIDINE PRESERVATIVE FREE 1% EYE DROP*: for patients who are on maximally tolerated therapy and have a preservative allergy/ocular surface disease/previous corneal surgery and are not suitable for surgery.

ADJUNCT THERAPY: Oral acetazolamide – for patients already on maximally tolerated topical treatment.

OTHER GLAUCOMA DRUGS ON MEH FORMULARY (FOR RESTRICTED USE ONLY)

- **Betaxolol 0.25% MR and betaxolol 0.25% MR (*preservative free*)*** – for patients who require a cardioselective β-blocker, e.g. mild asthmatics who can tolerate therapy.
- **Levobunolol 0.5% (*preservative free*)*, timolol 0.5% (long acting)** and **pilocarpine various strengths** – secondary, atypical and refractory glaucomas.

NON-FORMULARY

- **Tafluprost 0.0015%** (*preservative free*)* – no longer initiated at Moorfields, but available for patients who have previously been initiated and are stable on this medicine.

Key:
Medicines in amber font: Amber prescribing status. Medicines that should be initiated by a specialist. Prescribing can be transferred to primary care once the patient has been stabilised.
Medicines in red font: Red prescribing status. Specialist or hospital prescribing only.

V3.2 Formulary & Clinical Teams / Pharmacy
Date of issue: February 2025 / Date of review: February 2028

Moorfields Eye Hospital NHS Foundation Trust

Appendix 1: NCL preferred choices for multidose bottle (MDB) alternatives to single dose use (SDU) preservative free eye drops

GENERIC OR BRANDED PRODUCT		PRESCRIBE BY BRAND IN PRIMARY CARE			
Original SDU product	**Expiry**	**Preferred 1st line MDB**	**Expiry**	**Preferred 2nd line MDB**	**Expiry**
Bimatoprost or Lumigan® 300mcg/ml 0.4ml PF ED (30 unit dose)	After single use	**Bimi®** 0.3mg/ml PF ED (3ml & 9ml) (Scope Ophthalmics Ltd)	3 months after opening	**Eyreida®** 0.3mg/ml PF ED (3ml) (Aspire Pharma Ltd)	1 month after opening
Dorzolamide + timolol or Cosopt® 20mg/ml + 5mg/ml 0.2ml PF ED (60 unit dose)		**Codimaz®** 20mg/ml / 5mg/ml eye drops (5ml) (Scope Ophthalmics Ltd)	1 month after opening	**Eylamdo®** 20mg/ml / 5mg/ml eye drops (5ml) (Aspire Pharma Ltd)	
Dorzolamide or Trusopt® 20mg/ml eye drops 0.2ml PF ED (60 unit dose)		**Dimaz®** 20mg/ml eye drops (5ml) (Scope Ophthalmics Ltd)		**Eydelto®** 20mg/ml eye drops (5ml) (Aspire Pharma Ltd)	
Latanoprost or Monopost® 50micrograms/ml 0.2ml PF ED (30 unit dose & 90 unit dose)		**Lotacryn®** 50micrograms/ml eye drops (2.5ml) (Scope Ophthalmics Ltd)			
Bimatoprost + timolol or Ganfort® 0.3mg/ml + 5 mg/ml 0.4ml PF ED (30 unit dose)		**Eyzeetan®** 0.3mg/ml / 5mg/ml eye drops preservative free (3ml) (Aspire Pharma Ltd)			
Note: there is not a preferred MDB option for travoprost 40mcg/ml 0.1 ml SDU PF ED					

Key: PF ED = preservative-free eye drops SDU = single dose use unit MDB = multidose bottle

Please also refer to the SPC / BNF/ MHRA for full prescribing information

Moorfields Eye Hospital NHS Foundation Trust