Follow-up schedule for patients with glaucoma based on the target IOP and disease progression (refer to table below). However, it should be individualised according to the severity of disease and risk factors.

**MONITORING**

- Patients with glaucoma require lifelong treatment and monitoring.
- Adjustment of treatment and target IOP depends on the evaluation of glaucoma progression.
- It is important to assess both optic nerve structure and function in detecting progression.

**REFERRAL**

- Indications for referral are as follows:
  - acute angle closure (immediate referral)
  - confirmation of diagnosis
  - progression of disease
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    - poor compliance or adherence
  - uncontrolled IOP despite maximum medical treatment requiring laser or surgical intervention

**FOLLOW-UP**

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|                    | No: 1 - 2 months  
|                    | Yes: 4 - 6 months  
|                    | Disease progression (structural and functional):  
|                    | Yes: 3 - 6 months  
|                    | No: 6 - 12 months  |

Printing of this Quick Reference was funded by an unrestricted grant from the Malaysian Society of Ophthalmology.
1. Glaucoma is a chronic eye disease that damages the optic nerve, & can result in serious vision loss and irreversible blindness.
2. Glaucoma diagnosis should be made based on combination of history, ocular examination & investigation.
3. Risk factors should be identified in the management of glaucoma.
4. Medical treatment in glaucoma should be individualised based on patient's characteristics & drug factors, & adjusted according to target intraocular pressure (IOP).
5. Prostaglandin analogues should be used as first-line treatment in glaucoma.
6. Patient education should be given to patients with glaucoma. This includes benefits & side effects of treatment, proper instillation technique of eye drop & compliance to treatment.
7. Laser iridotomy should be performed in primary angle closure disease when indicated.
8. Peripheral iridoplasty may be considered for initial treatment in acute angle closure.
9. Intraoperative Mitomycin C during trabeculectomy should be used in glaucoma patients at risk of surgical failure.
10. Glaucoma patients with blindness or low vision should be referred for vision rehabilitation which includes vocational, occupational & independent living.

This Quick Reference provides key messages & a summary of the main recommendations in the Clinical Practice Guidelines (CPG) Management of Glaucoma (Second Edition).

Details of the evidence supporting these recommendations can be found in the above CPG, available on the following websites:

Ministry of Health Malaysia : www.moh.gov.my
Academy of Medicine Malaysia : www.acadmed.org.my
Malaysian Society of Ophthalmology : www.mso.org.my

CLINICAL PRACTICE GUIDELINES SECRETARIAT
Malaysian Health Technology Assessment Section (MaHTAS)
Medical Development Division, Ministry of Health Malaysia
Level 4, Block E1, Precint 1,
Federal Government Adminstrative Centre 62590
Putrajaya, Malaysia
Tel: 603-8883 1229
E-mail: htamalaysia@moh.gov.my
CLASSIFICATION OF GLAUCOMA BASED ON ANGLE CONFIGURATION

Important risk factors in glaucoma are:
- age >40 years
- family history of glaucoma
- increased IOP
- refractive error – myopia in POAG & hyperopia in Primary Angle Closure Disease
- diabetes mellitus

POAG = primary open angle glaucoma
OHT = ocular hypertension
NTG = normal tension glaucoma
PAC = primary angle closure
PACG = primary angle closure glaucoma
CLASSIFICATION OF PRIMARY OPEN ANGLE GLAUCOMA/
OCULAR HYPERTENSION/
PRIMARY OPEN ANGLE GLAUCOMA SUSPECT

Assessment

IOP

ONH/RNFL

VF

>21 mmHg
Normal
Normal
OHT

Any
Suspicious
Normal/suspicious*
POAG suspect

Any
Damage
Defects
POAG

High IOP
Normal IOP

OHT
POAG suspect
POAG

*ONH and/or peripapillary RNFL appearance and VF changes are suggestive of, but not definitive for glaucoma

ONH = optic nerve head
RNFL = retinal nerve fiber layer
VF = visual field
CLASSIFICATION OF PRIMARY ANGLE CLOSURE SUSPECT/ PRIMARY ANGLE CLOSURE/ PRIMARY ANGLE CLOSURE GLAUCOMA

Assessment

ITC | IOP | ONH | VF
---|---|---|---
Yes (appositional) | Normal | Normal | Normal | PACS
Yes (PAS) | >21 mmHg Normal/suspicious* | Normal | Normal | PAC
Yes (PAS) | >21 mmHg | Damage | Defects | PACG

*ONH and/or peripapillary RNFL appearance is suggestive of, but not definitive for glaucoma

---

ITC = iridotrabecular contact
PAS = peripheral anterior synechiae
PACS = primary angle closure suspect
PAC = primary angle closure

---

*ONH and/or peripapillary RNFL appearance is suggestive of, but not definitive for glaucoma
CLASSIFICATION OF GLAUCOMA BASED ON ANGLE CONFIGURATION

MANAGEMENT ACUTE ANGLE CLOSURE

Patient with AAC

Medical therapy to break attack and prepare patient for LPI

View clear

Compression or ALPI to clear the view

YES

Evidence for secondary cause of AAC crisis

Definite evidence for PAC mechanism of AAC

Treat pathology of secondary AAC and lower IOP medically or surgically

Surgical iridectomy or cataract surgery ± goniosynechialysis or trabeculectomy

Unsuccessful or not possible

ALPI

Unsuccessful or not possible

Prompt LPI

Schedule iridotomy in fellow eye if chamber angle is anatomically similar

IOP controlled

Follow-up with dark room gonioscopy to assess adequacy of angle opening

IOP uncontrolled

• Dark room gonioscopy to assess other mechanism of angle closure
• Ascertain continued patency of the iridotomy
• Further medical and surgical treatment to lower IOP

AAC = acute angle closure
LPI = laser peripheral iridotomy
ALPI = argon laser peripheral iridoplasty
TREATMENT

- Medical treatment is the initial treatment of choice in glaucoma. It includes the use of topical and systemic anti-glaucoma medications that lowers the IOP.
- Choose medication(s) that:
  - provides greatest IOP lowering effects to achieve target IOP
  - has the best safety profiles e.g. least side effects, good tolerability, etc.
  - enhances compliance e.g. simple dosing regimen, minimal disruption to quality of life, etc.
  - is available and affordable
- Laser treatment is indicated when medical therapy fails, as an adjunct or as a primary treatment where appropriate.
- Surgery is indicated in glaucoma when the target IOP cannot be reached despite maximal medical therapy or when there is intolerance or non-compliance to medical therapy.
- Treatment is considered effective when the individual target IOP is achieved and there is no evidence of progression.

SAFETY PROFILES OF TOPICAL ANTI-GLAUCOMA MEDICATIONS

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<th>Safety Profiles</th>
<th>Prostaglandin Analogues/ Prostamides</th>
<th>β-blockers</th>
<th>α₂ Adrenergic agonists</th>
<th>Topical CAIs</th>
<th>Cholinergic agents (direct-acting)</th>
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</table>
| Contraindications | Relative contra-indications:  
Uveitis  
Herpes Simplex Viral keratitis  
Cystoid macular oedema  
Caution:  
Complicated intraocular surgery (e.g. posterior capsule rupture) | Bronchial asthma, chronic obstructive pulmonary disease  
Bradycardia, heart block, cardiac failure  
Relative contra-indication for β1 selective | On monoamine oxidase inhibitor therapy  
Children <2 years old due to possibility central nervous system suppression | Compromised corneal endothelium  
Sulfonamide allergy  
Severe renal impairment  
Hepatic impairment (caution) | Uveitic, neo-vascular and lens induced glaucoma  
Aqueous misdirection syndrome |
| Adverse effects | Conjunctival hyperaemia  
(usually transient and noninfectious)  
Hypertrichosis  
Eyelid skin darkening | Brady-arrhythmias  
Hypotension  
Bronchospasm | Allergy (conjunctivitis, eyelid erythema)  
Conjunctival hyperaemia  
Drowsiness | Ocular discomfort (stinging, burning, foreign body sensation)  
Allergy (conjunctivitis, eyelid erythema)  
Blurred vision | Brow ache  
Dimness of vision  
Headache |
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