

# MOH CLINICAL PRACTICE GUIDELINES 3/2005

## Glaucoma



Ministry  
of Health

National Committee  
on Ophthalmology

### Executive summary of recommendations

Details of recommendations can be found in the main text at the pages indicated.

### Diganosis of glaucoma and screening

Glaucoma is defined as an optic neuropathy with characteristic changes in the optic nerve head and visual field. Raised intraocular pressure (IOP) is the main risk factor for the development and progression of this disease.

**C** Patients suspected of having glaucoma should undergo the following three baseline tests:

- IOP measurement by Goldmann Applanation Tonometry
- Disc documentation, preferably by photography
- Perimetry

(pg 13)

**Grade C, Level IV**

**B** The visual acuity and IOP are neither specific nor sensitive enough in themselves to be effective diagnostic or screening tools. (pg 13)

**Grade B, Level IIa**

**GPP** IOP measurements should be combined with disc and visual field examination for greater sensitivity and specificity. (pg 13)

**GPP**

**C** IOP measurement, disc appearance and perimetry should be monitored during follow-up. (pg 14)

**Grade C, Level IV**

**B** Routine population screening for glaucoma is **not** recommended at this stage. However, high-risk individuals such as first degree relatives of a glaucoma patient, age  $\geq 65$  years and elderly Chinese females (who are at risk of angle closure glaucoma) may be considered as target populations for case detection programmes. (pg 21)

**Grade B, Level IIa, IIb**

## Management of glaucoma

The goal of treatment in glaucoma is to maintain useful visual function and the patient's quality of life at a sustainable cost.

**A** IOP lowering is the only clinically effective approach in the management of glaucoma. (pg 15)

**Grade A, Level Ia**

**C** The target IOP is an estimate of the mean IOP achieved with treatment that is expected to prevent further optic nerve damage. An individualised target IOP range should be set for every glaucoma patient. (pg 15)

**Grade C, Level IV**

**C** The first line of treatment in Primary Open Angle Glaucoma is medical therapy and the choice of the drug depends on the target IOP, the safety profile of the drug, patient acceptance and cost. (pg 17)

**Grade C, Level IV**

**A** The first line of treatment in Primary Angle Closure Glaucoma is a laser iridotomy. A laser iridotomy is also required for the fellow eye. Supplemental medical therapy may also be required. (pg 17)

**Grade A, Level Ib**

**C** In the emergency setting of **acute angle closure glaucoma**, additional systemic drugs like osmotic diuretics and oral/parenteral carbonic anhydrase inhibitors may be employed to rapidly reduce the IOP to avoid permanent, devastating nerve damage. (pg 17)

**Grade C, Level IV**

**A** In Open Angle Glaucoma, laser trabeculoplasty may be used as an adjunct to medical therapy. (pg 20)

**Grade A, Level Ia**

**C** Surgery is indicated in patients who fail or are unable to comply with medical therapy and may be combined with cataract removal for enhanced visual rehabilitation. (pg 21)

Grade C, Level IV

**C** Trabeculectomy is the primary surgery of choice in medically uncontrolled glaucoma. (pg 21)

Grade C, Level IV

**GPP** Patients who have undergone glaucoma surgery should be advised that there is a lifelong need to be aware of symptoms of infection, which include blurring of vision, pain, redness, discharge and swelling. (pg 21)

GPP

**C** Steroid eye drops are a frequently unrecognised cause of glaucoma. They should only be used as short-term therapy and IOP monitoring is vital in such patients. (pg 4)

Grade C, Level IV

### Clinical Features of the Primary Glaucomas

	Acute Angle Closure Glaucoma	Primary Open Angle Glaucoma & Chronic Angle Closure Glaucoma
<b>SYMPTOMS</b>		
	<ul style="list-style-type: none"> <li>• Painful red eye</li> <li>• Blurring of vision, haloes</li> <li>• Severe headache, nausea and vomiting</li> <li>• History of similar episodes in the past, which were aborted spontaneously with sleep</li> <li>• The patient is frequently an elderly Chinese lady</li> </ul>	<ul style="list-style-type: none"> <li>• Usually asymptomatic till advanced stages of the diseases</li> </ul>
<b>SIGNS</b>		
Visual Acuity	Decreased	Normal / decreased in advanced stages
Conjunctiva	Injected	Normal
Cornea	Hazy in symptomatic eye	Clear

	<b>Acute Angle Closure Glaucoma</b>	<b>Primary Open Angle Glaucoma &amp; Chronic Angle Closure Glaucoma</b>
<b>SIGNS</b>		
Anterior Chamber	Shallow in both eyes Positive “eclipse sign” (nasal iris not illuminated by light shone from the temporal side, see Fig.1 in main text page 12)	Deep in both eyes
Gonioscopy	Closed angles	POAG - open angles; CACG - closed angles
IOP	Much higher than 21 mmHg and the eye may feel harder than fellow eye on digital palpation	Usually higher than 21 mmHg
Pupil	Mid-dilated in symptomatic eye	Relative Afferent Pupillary Defect (RAPD) if asymmetrical involvement
Optic disc	<ul style="list-style-type: none"> <li>• May be difficult to examine due to hazy cornea.</li> <li>• Can be normal, hyperemic or cupped if there have been previous neglected attacks</li> </ul>	<ul style="list-style-type: none"> <li>• Vertical cup disc ratio <math>\geq 0.7</math> in a normal-sized disc</li> <li>• Increase in cup disc ratio over time</li> <li>• Asymmetry in cup disc ratio <math>\geq 0.2</math> between the 2 eyes</li> <li>• Flame-shaped haemorrhages that extend across the disc margin (splinter haemorrhages)</li> <li>• Focal loss of neuroretinal rim (notching)</li> </ul>
<b>Visual Field</b>	<p>If glaucomatous nerve damage has been sustained perimetry shows defects that are consistent with nerve fibre layer loss and these include:</p> <ul style="list-style-type: none"> <li>• Temporal island</li> <li>• Central island in advanced glaucoma</li> <li>• Nasal step</li> <li>• Paracentral or arcuate scotomas</li> </ul>	