

Co-Managing the Glaucoma Suspect in primary care

Key learning points

- Glaucoma is a progressive disease in which optic neuropathy occurs in association with visual field loss. If untreated, glaucoma may cause progressive blindness.
- The most important recognised risk factor is high intraocular pressure (IOP normal range 10-21mmHg). For every 1mmHg of pressure above the normal range, the risk of developing glaucoma increases by 12 per cent (1).
- 2009 NICE guidance (CG85) makes recommendations for diagnosis, monitoring and treatment of glaucoma and related conditions (2).
- Patients with possible glaucoma are called glaucoma suspects. Risk factors for developing glaucoma include ocular hypertension, a strong family history in a 1st degree relative, short sightedness, African Caribbean origin and diabetes (3).
- When glaucoma is first suspected, a referral to a consultant ophthalmologist is made to examine the eye and document optic disc appearance, corneal thickness, computerised visual field, and IOP measurement (using a Goldmann prism).
- If glaucoma is not confirmed, a glaucoma suspect is monitored with access to all previous findings. NICE recommends using the same equipment to compare results at each subsequent review.
- During monitoring, glaucoma is diagnosed if progression of disc or field damage occurs, and the patient receives treatment to lower IOP.
- The role of the GP is important here, and entails encouragement to the patient to adhere to the pathway, monitor prescription refills, assess the ability to use eye drops and any requirement for compliance aids, manage co-morbidities, ensure communication between professionals and monitor any side effects of treatment. Of course, GPSs will have a more in depth involvement in the provision of care for these patients.

Glaucoma epidemiology and blindness

- Glaucoma is common, more so in the elderly with prevalence ranging from 2 per cent at 40, to 9.7 per cent above 75 years (4).
- Worldwide, glaucoma is the commonest cause of preventable irreversible blindness. There were 60.5 million people with glaucoma in 2010, increasing to 79.6 million by 2020.
- In the UK glaucoma accounts for 10-15 per cent of CVI (certificate of visual impairment) registrations and 0.5 million live with the disease (5).
- Glaucoma is more prevalent and occurs earlier in African / Caribbean populations, tending to be more severe and difficult to treat (6).
- The disease often presents late because typical glaucoma field loss is asymptomatic until advanced disease is present. Population screening for glaucoma is not cost-effective because test results are not specific enough in the early stages of disease (7).

How is a glaucoma suspect detected in a GP setting?

- Most glaucoma suspects are detected by community optometrists at routine eye tests for glasses. Often the reason for referral to eye clinics is because IOP is measured to be above the normal range.
- Opportunistic ophthalmoscopy or fundus photography (e.g. diabetic eye screening programme images) may identify suspicious optic disc cupping (atrophy and excavation of nerve fibres on the disc rim).
- A patient with a strong family history of glaucoma may self-refer.

GP role in management of glaucoma or glaucoma suspect

- Most GPs do not have the equipment or specialist knowledge to monitor a glaucoma suspect or glaucoma patient.
- Nevertheless the GP has a key role in care of the glaucoma suspect: i) advice to patients, support within the pathway and managing co-morbidities, ii) monitoring treatment and treatment side effects.

i) Advice to patients

- Regular follow up and adherence to treatment reduces risk of sight loss progression (8).
- Nocturnal hypotension is a risk for field loss and should be avoided where possible (9).
- Diet: Currently there are no proven risks or benefits to eating specific foods (10).
- Importance of healthy lifestyle and to reduce or stop smoking (11).
- Managing co-morbidities.
- Helping with efficient communication between professionals involved in the care of glaucoma patients.
- Providing vision support for patients and co-ordinating eye care services (see NICE 2009 pp13-14 for general advice to glaucoma suspect).

ii) Monitoring treatment

- Initially, lower IOP is achieved in most patients with daily eye drops; usually monotherapy with prostaglandin analogues/prostamides. These are effective, require once daily dosing and have minimal systemic side effects that are restricted to the eye. Ocular irritation and redness may wear off after initial weeks' use, and eyelash growth with darkening of iris pigment may be reversible on discontinuing the drops.
- Topical beta blockers are today more often used as second line therapy. Both non selective and selective B blockers may be responsible for worsening of asthma. All beta blockers slow the heart rate and may cause heart-block.
- Running out of drops before the end of the month may be a reason for non-adherence with medication and is reported to be more common in those with poorer vision (12).

Information for patients

- Patient information leaflets available at <http://www.glaucoma-association.com/order-a-leaflet/available-leaflets-from-the-iga.html> International Glaucoma Association
- <http://www.rcophth.ac.uk/page.asp?section=365§ionTitle=Information+Booklets> Royal College of Ophthalmologists

Key messages for GPs and Commissioners (13)

- Shared care schemes may improve the availability of glaucoma and OHT monitoring. Gains anticipated from wider adoption of efficient and cost-effective pathways for the diagnosis and management of glaucoma and OHT include:
 - better public and professional awareness of possibility of glaucoma especially in high risk groups
 - consistent quality care at all stages with regular monitoring using standardised equipment
 - earlier diagnosis and treatment to prevent blindness due to glaucoma
 - the potential for a reduction in falls related to impaired vision.

e-Learning for Health

<http://www.e-lfh.org.uk/projects/egp/index.html>

Useful Resources

- National Institute of Health and Clinical Excellence (NICE). Glaucoma: Monitoring and treatment of OHT or suspect COAG 2014. Available at www.nice.org.uk/guidance/cg85
- NICE guidance for glaucoma suspect: <http://www.nice.org.uk/guidance/CG85/IFP/chapter/Monitoring-and-treatment-for-people-with-ocular-hypertension-or-suspected-glaucoma> accessed 17/8/2014
- Useful clear explanation of glaucoma and ocular hypertension <http://www.patient.co.uk/doctor/glaucoma-and-ocular-hypertension> accessed 17/8/2014
- Trials and Guidelines for glaucoma suspect
 - 1. Normal tension glaucoma study (NTGS 1998): Found significant reduction in glaucoma damage in 'normal IOP' patients with progressing glaucoma if treated compared to control over 4 years
 - 2. Ocular hypertension treatment study (OHTS 2002): Found less development of glaucoma loss in patients with IOP over 21mmHg randomised to treatment compared with control over 5 years
- Recommended app: "Gone" – iPad application for training in identification of glaucomatous changes in optic discs

People involved in creating this resource:

Miss Gilli Vafidis, Consultant Ophthalmologist

Dr Waqar Shah, RCGP Clinical Champion in Eye Health

Russell Young, CEO, International Glaucoma Association


Lesley-Anne Baxter, Outgoing chair BIOS, Trustee Vision 2020, Vice chair AHPF

Jo Mullin, Director of Policy and Strategy, College of Optometrists

Bernie Chang, Chair of Professional Standards, The Royal College of Ophthalmologists

References

1. Predictors of long-term progression in the Early Manifest Glaucoma Trial. Leske MC, Heijl A, Hyman L, Bengtsson B, Dong L, Yang Z. *Ophthalmology*. 2007;114:1965–72.
2. Glaucoma: diagnosis and management of chronic open angle glaucoma and ocular hypertension <http://guidance.nice.org.uk/CG85/Guidance/pdf/English>
3. NICE commissioning guides [CMG44] Published date: March 2012.
4. Prevalence of open-angle glaucoma in Australia. The Blue Mountains Eye Study. Mitchell P, Smith W, Attebo K, Healey PR. *Ophthalmology* 1996;103(10):1661-9.
5. The number of people with glaucoma worldwide in 2010 and 2020. Quigley HA, Broman AT. *Br J Ophthalmol* 2006;90:262-267.
6. Primary open-angle glaucoma in blacks: a review. Racette L, Wilson MR, Zangwill LM, Weinreb RN, Sample PA. *Surv Ophthalmol* 2003;48(3):295-313.
7. The clinical and cost effectiveness of screening for open angle glaucoma: a systematic review and economic evaluation. Burr JM, Mowatt G, Hernández R, Siddiqui MA, Cook J, Lourenco T, Ramsay C, Vale L, Fraser C, Azuara-Blanco A, Deeks J, Cairns J, Wormald R, McPherson S, Rabindranath K, Grant A. *Health Technol Assess*. 2007;11:1-190.
8. Medical management of primary open-angle glaucoma: Best practices associated with enhanced patient compliance and persistency. Kulkarni SV, Damji KF, Buys YM. *Patient Prefer Adherence*. 2008 Feb 2;2:303-14.
9. Nocturnal hypotension: role in glaucoma progression. Graham SL, Drance SM. *Surv Ophthalmol*. 1999 Jun;43 Suppl 1:S10-6.
10. Dietary factors and the risk of glaucoma: a review. Bussel II, Aref AA. *Ther Adv Chronic Dis*. 2014, Vol. 5(4) 188–194.

- 
11. The importance of alcohol abuse and smoking in the evolution of glaucoma disease. Chitoroiu SM, Pop de Popa D, Ștefăniu GI, Secureanu FA, Purcărea VL, Malaxa N, Davila C. Journal of Medicine and Life 2013;6:226-229.
 12. Prevalence of self-reported early glaucoma eye drop bottle exhaustion and associated risk factors: a patient survey. Moore DB, Walton C, Moeller KL, Slabaugh MA, Mudumbai RC, Chen PP. BMC Ophthalmology 2014, 14:79
 13. Commissioning better eye care Glaucoma. Clinical commissioning guidance from The College of Optometrists and The Royal College of Ophthalmologists 2013.