Examining patients at risk from glaucoma

Key points

- You must carry out relevant tests when examining a patient who is in the at risk groups for primary open angle glaucoma
- you will identify the majority of at risk patients during a routine eye examination
- there are key indicators for identifying patients at risk
- those with a greater than average risk include certain ethnic groups, patients with first degree relatives with glaucoma and those over 40
- there is key information to assist with your diagnosis
- there are additional procedures to include in your examination
- you should follow local protocols
- there is a additional guidance on working under the supervision of a consultant ophthalmologist
- there is additional guidance on referral of glaucoma suspects and patients with ocular hypertension.

Principles of examining patients at risk from glaucoma

128. When examining a patient who is in the at risk groups for primary open angle glaucoma you must carry out the relevant tests to determine whether the patient has the condition.[39]

129. Glaucoma can be difficult to detect in the early stages and you should keep up to date with current thinking on the pathophysiology, clinical signs and diagnostic techniques required to detect it.

Identifying patients at risk from glaucoma

130. You will identify the majority of patients who are at risk from primary open angle glaucoma during a routine eye examination. They are principally patients with one or more of the following:

    a. high IOP

    b. optic disc features suggestive of glaucoma

    c. evidence of high myopia

    d. symptoms of loss of peripheral vision.

131. Even in the absence of the symptoms in the paragraph above, patients at greater than average risk include those:

    a. in certain ethnic groups, for example African-Caribbean people

    b. with first degree relatives with glaucoma

    c. over the age of 40, the risk increases with every decade of life thereafter.

132. The signs of asymptomatic primary angle closure glaucoma are almost identical to those of primary open angle glaucoma with the exception that the anterior chamber angle is capable of closure.

133. The prevalence of angle closure glaucoma is greater than that of open angle glaucoma in people of South or East Asian descent.

Diagnostic information

134. Around 40% of patients with glaucoma have IOP below 21mmHg [40] therefore patients with an IOP that would be considered within the normal range can still have glaucoma. Similarly some patients have IOP above 21mmHg and do not have glaucoma. NICE recommends[41] that patients whose IOP by applanation tonometry is consistently or recurrently greater than 21mmHg, see para X below:

    a. have a formal diagnosis of ocular hypertension by a healthcare practitioner who has appropriate training or qualifications

    b. are monitored, as they are at greater risk of developing glaucoma.

135. Optic disc features suggestive of glaucoma would include:

    a. increase in cup/disc ratio. This is particularly significant in small discs. A large cup/disc ratio in a large disc does not necessarily mean the patient has glaucoma. You may find it useful to use grading scales to standardise your disc assessment

    b. asymmetry in cup/disc ratio

    c. changes in the colour, width or symmetry of the neuroretinal rims, particularly superiorly and inferiorly. This may be evident as notching of the neuroretinal rim

    d. disc haemorrhage

    e. peri-papillary atrophy.

136. Assessment of the central visual field may provide useful diagnostic information and complement the examination of the optic nerve head. This may be particularly important in the diagnosis of normal tension glaucoma. Although visual field examination may sometimes produce anomalous results, you should not underestimate the usefulness of baseline measures and ongoing comparisons.

137. You should be aware that patients may present with other forms of glaucoma, such as acute or sub-acute narrow angle glaucoma or secondary glaucoma, for example due to pseudoexfoliation syndrome or pigment dispersion syndrome.

Procedures to include in an examination in routine practice

138. In addition to the procedures for a routine eye examination, you should select additional ones according to the patient's clinical need. You should normally:

a. assess the optic nerve head, see para X above. This would include assessing the size of the disc

b. measure the IOP. When using non-contact tonometry you should take four readings per eye and use the mean as the result. Where pressures are high or borderline, you should repeat the test, noting the time of day of each test. In the absence of any other abnormalities you should only consider referring the patient when the mean result is >21mmHg. If the patient has not had non-contact tonometry before and the mean of four readings is >21mmHg you should take a new set of readings for the eye or eyes for which this is the case.[42] It is good practice to follow up equivocal results from non-contact tonometry with contact applanation tonometry.

c. assess the central visual field using perimetry with threshold control. Where necessary, you should repeat visual field assessment to obtain a meaningful result.

139. If you suspect the patient has glaucoma you should assess the anterior eye and angle, for example by slit lamp van Herick technique.

140. If a patient refuses to consent to tonometry, after you have explained the reason for this procedure, you should record the patient's reason for refusal. You should use your professional judgement to decide how best to manage the patient.

Community schemes

141. If you are participating in a community scheme you should follow local protocols where they differ to this guidance.

Supervision

142. The College of Optometrists and Royal College of Ophthalmologists have published guidance[43] on what is meant by the phrase 'working under the supervision of a consultant ophthalmologist' in relation to NICE guidance

Referral

143. The College of Optometrists and Royal College of Ophthalmologists have published guidance on the referral of glaucoma suspects by community optometrists. [44]

Useful information and links

College of Optometrists *Clinical Management Guidelines on Glaucoma.* Available from: http://www.college-optometrists.org/en/professional-standards/clinical_management_guidelines/index.cfm [accessed 10 Oct 2013]

College of Optometrists *Glaucoma reading list* [College members only]. Available from: http://www.college-optometrists.org/en/CPD/CPD-materials/reading-lists/glaucoma-reading-list.cfm [accessed 10 Oct 2013]

College of Optometrists and Royal College of Ophthalmologists (2013) *Commissioning better eye care, clinical commissioning guidance, glaucoma*. Available from: http://www.college-optometrists.org/en/commissioning/guidance-for-commissioners.cfm [accessed on 10 Oct 2013]

Hollands H, Johnson D, Hollands S et al. (2013) Do findings on routine examination identify patients at risk for primary open-angle glaucoma? *The Rational Clinical Examination Systematic Review* 309(19), 2035-2042. Available from: http://www.crd.york.ac.uk/crdweb/ShowRecord.asp?LinkFrom=OAI&ID=12013026476#.UkL3ZX9u7x4 [accessed 10 Oct 2013]

National Institute for Health and Clinical Excellence (2011) Quality standard on Glaucoma. Available from: http://www.college-optometrists.org/en/utilities/document-summary.cfm/docid/21FD1803-2235-460B-AD9E8264E58C2B89 [accessed 10 Oct 2013]

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[39] Sight Testing (Examination and Prescription)(No 2) Regulations 1989 para 3 (1) (a)
[40] Shah R, Wormald R (2006) *Clinical Evidence Glaucoma*
[41] National Institute for Health and Care Excellence (2009) *Diagnosis and management of chronic open angle glaucoma and ocular hypertension*, Clinical guideline 85. London: NICE. Available from: http://guidance.nice.org.uk/CG85 [accessed on 10 October 2013]

[42] College of Optometrists and Royal College of Ophthalmologists (2010) *Joint supplementary guidance on supervision in relation to glaucoma-related care by optometrists.* Available from: http://www.college-optometrists.org/en/utilities/document-summary.cfm/docid/14D0AC7E-06FC-4453-BAFBEEC13E236C21 [accessed 10 October 2013]
[43] See 4 above
[44] College of Optometrists and Royal College of Ophthalmologists (2010) *Joint guidance on the referral of glaucoma suspects by community optometrists* Available from: http://www.college-optometrists.org/en/utilities/document-summary.cfm?docid=B7251E0C-2436-455A-B15F1E43B6594206 [accessed 10 October 2013]