Improving Clinical Practice in the Management of Glaucoma

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In glaucoma clinics and GP practices, physicians need to take care that they do not harm their patients through mis-diagnosis and inappropriate interventions, argues The International Glaucoma Association Outcomes Group. This article outlines several practical steps that may help improve clinical practice in the management of glaucoma [(1)].

Chronic glaucoma is an incurable asymptomatic disease in which the aim of treatment is to prevent visual impairment from the disease or to retain sightedness for the full duration of the patient's life[(1)]. Epidemiological data suggest that approximately 1 in 10 of all glaucoma patients with demonstrable optic nerve damage will suffer serious visual impairment and possibly blindness as a result of glaucomatous progression[(1)]. While many glaucoma patients will not suffer serious visual loss during their lifetime, people still go blind from glaucoma due to late presentation or sub-optimal treatment following early presentation[(2)].

The risk of blindness is of course the most important factor. Also, practical considerations related to the patient's quality of life need to be considered, for example the loss of a driving licence for a patient living in a rural community can often have a devastating effect on that person's ability to remain independent. It can therefore have an impact on quality of life far in excess of the limitations imposed by the restricted field of vision. A retrospective case control study of medical records involving 100 cases and 100 controls showed that ethnic origin, gender, referral source, presenting with intraocular pressure (IOP) and age of subjects, were independently associated with late presentation of chronic glaucoma[(3)].

Intraocular pressure reduction and visual field preservation:

Intraocular pressure remains the major modifiable risk factor in glaucoma, and the mainstay of glaucoma treatment has been to induce a sustained and substantial IOP reduction without significant or lasting side-effects. Evidence indicates that reduced levels of intraocular pressure slow the progression of glaucomatous optic neuropathy. Data from the Advanced Glaucoma Intervention Study, involving an examination of the relationship between IOP after surgical intervention for glaucoma and visual field deterioration over 6 or more years of follow-up, supports the suggestive evidence from earlier studies that achieving low levels of IOP slows the progression of glaucomatous optic neuropathy [(3)].

It has also recently been demonstrated that lOP-lowering treatment is beneficial in many, but not all patients with normal-tension glaucoma (NTG). There is a lower rate of progression of visual field loss in patients with NTG achieving a 30% reduction of IOP by medical or surgical treatment, compared with those in whom it was not lowered. It was reported that a 30% reduction in IOP from baseline significantly ($p<0.0001$) delayed progression of glaucomatous changes. Lowering IOP reduces the effect of the leading risk factor and can protect the optic nerve in some individuals. Furthermore, achieving a sustainable, long-term and large reduction in IOP is desirable, not least in reducing the frequency of follow-up examinations and reducing the likelihood of treatment switches due to inadequate lOP-lowering or intolerable ocular or systemic adverse effects [(3)].

Appropriate actions come first

A practical approach to risk management should ensure appropriate interventions suitable to address the risk of lifetime blindness or significant impairment of quality of life faced by each patient. Decision making involves both a medical dimension as well as determining the patient's best interest. Practical steps can be taken to help improve the overall quality of care of glaucoma patients [(4)].

1. Assess the risks and benefit, and do no harm

For those patients at serious risk of visual impairment, physicians need to ensure that they are properly informed so that they understand the balance of risk and benefit. More than 10% of blind registrations in the UK are due to glaucoma. However, as registration data are skewed toward visual acuity, the figures are probably an under-representation. Blindness caused by glaucoma is particularly severe as it affects the entire peripheral visual field. People blinded by glaucoma face increased mortality rates (including suicide) [(4)].

2. Listen and question, but also inform

In the case of a significant majority of patients, the diagnosis of glaucoma is all that will be remembered from the consultation at which they are given the diagnosis. Glaucoma is irrevocably associated with blindness and it is the experience of the International Glaucoma Association (IGA) that many patients assume that this is the inevitable prognosis. Many glaucoma patients have 'unspoken fears' about going blind, which they do not always present to the ophthalmologist. Such fears, whether spoken or not, need to be properly understood and addressed by physicians, otherwise patients may suffer undue stress, which in itself might exacerbate intraocular pressure (IOP) within the eye[(4)].

A well-informed patient is more likely to be a treatment compliant patient and on the whole will be less negative about their condition, which in turn is likely to lead to an improved long-term outcome. However, it is known that patients only retain at best, about a third of the information they are given during a consultation. Therefore greater use of patient information leaflets, produced by patient charities such as the

IGA and some pharmaceutical manufacturers, may help address instances of patient unease and confusion.

3. Ensure consistency and continuity of care across the Ophthalmology health-care team

Continuity of care is difficult to provide within busy eye clinics. A patient may well be seen on different visits by a host of different physicians. Each of these contacts will have a different level of experience, insight and information, with differing abilities with regard to communication. In some cases, the patient will hear a completely different message about their condition at different visits, possibly eroding patient trust and confidence. Electronic patient-record keeping and agreed doctor-patient management plans should help ensure optimal patient outcomes and facilitate the consultation process at each visit.

4. Individualise lOP-lowering strategy

Topical anti-glaucoma agents are potent medications, and many are associated with unpredictable and substantial systemic and ocular side-effects[5]. Selection of an inappropriate medication may also lead to additional prescribing by GPs for other emerging symptoms and conditions, most of which would go unlinked to an eyedrop medicine that may be causing these unacceptable side-effects. Lack of compliance has been identified as a major cause of inadequate IOP control, with up to 50% of patients failing to take anti-glaucoma medications correctly. The simpler the dosage regimen, the higher the chance of adequate compliance. However, the prime message is safety first and the provision of appropriate topical medication for those patients who need it.

Intelligent interaction and feedback

At present, it is probably fair to say that there is little or no coherence to the management approaches adopted across and within the country's eye clinics. A coherent management plan, individually tailored to each patient, should be agreed between doctor and patient. This will ensure that all treatment options have been discussed and that the doctor is aware of the particular requirements, personal circum-stances and physical and mental abilities of the patient. For example can the patient effectively self-administer the drops and remember to do so as prescribed?
An intervention plan is then structured, with frequency of visits agreed at the outset. One approach might involve development of an electronic patient record database. This is not a question of putting a computer between doctor and patient, but of using intelligent software to improve patient-doctor inter-action and improve overall quality of care by matching intervention to risk assessment.

Electronic record keeping also offers the potential for intelligent feedback. After input of certain clinical data, IT software might default to one of a set of different manage-ment plans which are linked to recognized and accepted clinical factors. The IGA Outcomes Group for example has proposed a three-level risk stratification system

based on low, medium or high risk of lifetime blindness due to glaucoma. For a low-risk patient, the recommended management plan might detail infrequent visits, minimally invasive treatment and reassuring output information for the patient about the nature of their condition and prognosis. Patients presenting with high-risk profiles would require frequent visits, frequent visual field testing and no block to triple combination topical therapy if needed to control IOP.

At each follow-up visit, the patient's current condition would be re-assessed to see if it fits with the present management plan. If it needs to be changed or adjusted, the patient's ability to comply with the treatment prescribed should be carefully considered and referral to the specialist may be advised. The goal is to move patients progressively from the high-risk level to the low-risk group as fast as possible, improving remission and discharge levels.

The objective is not to constrain physicians, but to provide confirmation of the best overall management approach which, hopefully, would allow for a more focused and consistent clinical management approach, securing appropriate individualised intervention.

Better referral information needed

Future developments might involve a web-based referral facility for general practitioners (GPs). This would provide clinics with basic data regarding the risk profiles of patients listed for referral. It would help clinics determine the appropriate waiting time for the referral appointment and the level of urgency for the referral. GPs need to detail as much referral information about the overall well-being of the patient, including any systemic medications being taken, other conditions and reported symptomatology. Ophthalmologists need to be alerted to all aspects of a patient's health.

Evidence-based management guidelines – an important first step

As the population ages, the number of people at risk from glaucoma is likely to increase rapidly. Glaucoma clinics are already growing at a fast pace with ever increasing patient numbers. Interestingly, audit evidence shows that management of newly-diagnosed patients accounts for between 10% and 20% of overall clinic activity. Appropriate detection and risk assessment can help target resources to those most likely to suffer from visual loss. Also, a better and more tolerable effect on IOP lowering earlier in treatment leads to a lower probability of treatment changes, reducing the follow-up burden related to inadequate initial IOP control or troublesome ill effects. Practitioners are reminded to choose a simple but effective initial medical treatment to maximize compliance and reduce the frequency of treatment discontinuations.

With demands for more rigorous clinical governance, it is perhaps time for ophthalmologists as a profession to embark on developing an evidence-based patient management initiative to clarify and agree simple, easy-to-follow, yet comprehensive guidelines for treating glaucoma ([5]).

Key points:

• Quality of care can be improved by focusing on more appropriate diagnosis, risk assessment and intervention/management strategy tailored to each individual patient.

• Topical anti-glaucoma agents are potent medications, and many are associated with unpredictable and substantial systemic and ocular side-effects. Selection of an inappropriate medication may also lead to additional prescribing by GPs for other emerging symptoms and conditions.

• A better and more tolerable effect on IOP lowering earlier in treatment leads to a lower probability of treatment changes, reducing the follow-up burden related to inadequate initial IOP control or troublesome and clinically significant ill effects.

• For those patients at serious risk of visual impairment, physicians need to ensure that they are properly informed so that they understand the balance of risk and benefit.

• A coherent management plan, individually tailored to each patient, should be agreed between doctor and patient, detailing clinical intervention, frequency of follow-up and treatment goal of remission.

• Electronic patient record-keeping and an integrated approach to patient care by linking risk stratification with management strategy would help provide a coherent approach to ensuring standards of care are delivered.

• It is perhaps time for ophthalmologists as a profession to embark on developing an evidence-based patient management initiative to clarify and agree simple, easy-to-follow, yet comprehensive guidelines for treating glaucoma.

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