



**National Institute for
Health Research**



Janice Krushner Memorial Lecture 2010 - Part 2

Glaucoma, NICE and the Community Optometrist Geoff Roberson, Professional Adviser, Association of Optometrists (AOP)

Good afternoon everybody. I was delighted when David Wright invited me to come and make a short presentation to you. I am a one day a week community optometrist and the rest of the time I advise other community optometrists through the AOP.

Sitting here this afternoon, listening to Mr Garway-Heath's excellent presentation, I was going through one or two things in my mind, and aside from anything that I was planning to talk about in my presentation, it occurred to me that there has been something of a disconnection between optometry (and optometrists) and the IGA in these later years. I am not quite sure why this has happened but I am convinced that it wasn't the case in the early days of the IGA and I think that it is not a good thing now. I am convinced that we should do something to try and get a better balance so that as things move

forward and there is a greater role for optometrists in the management of glaucoma, the needs of the patient are not lost in the division of professional responsibilities and financial considerations. I will be touching on these developments a little more later in my talk.

David asked me to talk about the NICE (National Institute for Health and Clinical Excellence) glaucoma guideline. The NICE glaucoma guideline created a few waves in the ophthalmic world and it has had a knock on effect which is not altogether to the good, at least in the short term. I am a community optometrist and I work for an Association that represents optometrists so I am going to present a positive message about optometrists and what we can do to help. Community optometrists work in high street optical practices. We have a set of skills that enable us to detect

glaucoma and ocular hypertension and we have all the necessary instruments to let that take place. We have a variety of ophthalmoscopic techniques to enable us to assess the optic nerve head at the back of the eye, tonometry to measure intraocular pressure and equipment to assess the visual field. In fact, high street community optometrists detect the majority of glaucoma patients in the UK. In all cases the patient is then referred to the Hospital Eye Service and comes under the care of a consultant ophthalmologist but we optometrists still come into contact with these patients at regular intervals because they come in for their routine eye examination sight test, to get their glasses altered as necessary. So optometrists already have a vital role in the story of glaucoma and the rest of this talk is about some opportunities, particularly now with the new glaucoma guideline from NICE, for optometrists to participate in a more active way in the identification and in the care of patients with glaucoma and ocular hypertension.

Turning to the NICE glaucoma guideline, I am sure you are all aware that it was published in April last year and for the first time there is a consensus view about the best way to manage glaucoma. I know that not everybody agrees with it, but there is a common view on a variety of aspects of glaucoma. Open angle glaucoma has been defined, its

diagnosis or the process in which it might be diagnosed is defined, ocular hypertension now is defined and there is a defined process for its diagnosis. Who can do what in the identification and the care of glaucoma patients has also been specified, as has the treatment that is most appropriate to the various groups. The detection, by community optometrists, of Glaucoma itself has not been overly affected by the NICE guideline. Patients can be diagnosed as having open angle glaucoma if the drainage mechanism is open, if the visual field is damaged in a characteristic way and if there is evidence of optic nerve head or nerve fibre damage and the guideline allows for some variations to this but it is about primary open angle glaucoma specifically. There are also people who we call glaucoma suspects for reasons other than raised intraocular pressure. They are identified as having one or more of the following: optic nerve head damage, retinal nerve fibre damage, a normal or a suspicious visual field and an absence of a secondary cause.

First of all I think we all have to recognise that the guideline is aimed at the diagnosis and treatment of glaucoma in a hospital environment rather than the 'case finding' or 'identification of glaucoma patients' that we optometrists do in our high street practices. However, there were some ramifications beyond the hospital environment

and these are what concern us as community optometrists. This situation was unforeseen by NICE and unfortunately the revisions that were made between the draft and the final document did not make things sufficiently clear to avoid the problems. The difficulty is all about ocular hypertension. The guideline 'created' a new group of patients, who now require formal identification, diagnosis and monitoring under consultant ophthalmologist care whereas before the guideline they were identified and monitored by optometrists. Unfortunately or fortunately, depending on the viewpoint, I and my colleagues are in a situation at the moment, where we are required to refer far more low risk patients to ophthalmologists for a diagnosis and monitoring than was the case hitherto and this is adding to the stresses on a system that is already struggling to cope with the number of glaucoma patients under its care.

The Guideline also specifies particular instruments and techniques, which is understandable for the purpose of standardisation, but this places a considerable cost burden on optometrists, so there are a number of different factors to be considered if we are to find a safe and cost effective way forward.

Well, as I said at the beginning, I am going to highlight the skills

and abilities of optometrists in this presentation. There are pressures on ophthalmology clinics, waiting times are under pressure, particularly for follow up appointments and the fact that glaucoma is a disease that is predominately one of older age groups means that with the ageing population, there are going to be more patients with glaucoma as the years go by.

There are about 10,500 optometrists in the UK to be found in convenient locations around the country because we need to place ourselves where patients are able to come and see us with the minimum of difficulty and we have some important skills and valuable equipment. I also think it is fair to say that we are keen to help, not just in resolving the problem created by the NICE guideline, but in the identification and care of glaucoma patients in general. However, none of what I am going to suggest would, in any way, detract from the fact that the care and treatment of glaucoma patients will and should be led by ophthalmologists.

So I will call what I am going to talk about next 'Spend to Save'. As I said, the guideline has identified a large group of patients who up until now have not needed formal diagnosis and monitoring but who are now going in the hospital system and it is going to cost more money.

The question is therefore what is the best way of allocating those funds? In the first instance I think we can do a lot to reduce the number of patients that are reaching hospitals and who are clogging up out-patient appointments by minimising the number of false positive referrals that are based on intraocular pressure alone, but it is going to require some money to do this. We need to make sure that community optometric practices are using the specific tonometer that is identified in the guideline, the Goldman tonometer. There will also need to be some funding for them to take repeated measurements of intraocular pressure because the guideline requires that for the identification of ocular hypertension, the pressure has to be elevated on a sustained basis so one measurement is not going to meet the requirements of the guideline. So if there was sufficient money to fund the tonometers and to fund the people to take repeated measures in the community, this would minimise the number of false positive referrals to hospital departments and also, perhaps, provide an opportunity to keep an eye on the patients where they fall into a little bit of a grey area, those who haven't got clearly elevated pressure, but over which there is a little bit of concern. Models of good practice exist around the country and fortunately some areas had schemes of this sort before the guideline was published. Others have

set schemes up since the publication and there are excellent examples of good practice around the country. At the moment we are just talking about case finding, identifying those that might have glaucoma or ocular hypertension and then referring them into the hospital system. But there is a single competency that is required for the diagnosis of open angle glaucoma that is not possessed by optometrists and that is the technique of gonioscopy, which allows the eye specialist to assess the drainage angle in the front of the eye near the root of the iris where the fluid inside the eye drains away. I think it is entirely feasible for optometrists, who are suitably trained and have the skills and confidence, to carry out this procedure in community practice but there is a training element and again that would require some funding. Once the formal diagnostic process is over, community optometrists do have all the competencies that are identified in the guideline as being required for the on going monitoring of ocular hypertensive patients. So the worst case in this model would be that the patient has to go to the hospital to be diagnosed, but then can be discharged in the community for on going monitoring, only going back to the hospital if there are clear signs of glaucoma developing. In essence these low risk patients could be retained in the community and not have to go to hospital until they have clear signs of glaucoma developing.

Moving a bit further forward and looking a little but further into the future, the next possibility is that optometrists could actually monitor patients who have glaucoma, those who have been diagnosed and are being treated, but are stable. Their condition is not worsening so we are talking about patients who are compliant with their medication, whose eye pressure is within the required range and whose visual field defects are not getting worse. In that situation a suitably trained optometrist could look after these patients in the community and again there are models of good practice which already exist. So to summarise, we need to spend more money to care for our patients who are at risk of developing glaucoma or who have glaucoma already simply because there are more patients. It is a question of persuading the people who pay the money that this is a good investment, because it will save money in the long run. In the first instance, it is possible to make a big and relatively short term improvement to the situation to reduce the number of false positive referrals to hospital departments, by providing for optometrists in the practices to use the identified tonometer and to repeat the measures. Looking forward we have the possibility of community optometrists formally diagnosing ocular hypertension and monitoring it on an ongoing basis and then perhaps something more

adventurous, the monitoring of stable glaucoma patients. As I have said before, I am not suggesting that any of this is done outside the supervision and the ongoing monitoring of consultant ophthalmologists, but there is capacity in the community to undertake these tasks; there are people who have skills and training that lend themselves to undertake these roles. In many cases there will be an additional training burden, but I believe it does provide a solution and it is convenient for the patient which is something we shouldn't forget. Service users, those of you who are members of the International Glaucoma Association who have glaucoma, have a powerful voice in your local areas. Health commissioners, primary care trusts, health boards in Scotland and Wales listen to patients. You have an opportunity, if you feel it is appropriate, to become involved and persuade local commissioners that there are solutions to the problems that currently exist and I think that we all need to make sure that all the resources in an area are properly funded and utilised to everybody's benefit.

**Thank you very much for
your attention.**

Janice Krushner Memorial Lecture 2010

Questions & Answers

Part 1. Q&A session with DF Garway-Heath MD FRCOphth, IGA Professor of Ophthalmology for Glaucoma and Allied Studies, UCL (Presentation reported in the Spring 2010 edition of the IGA News)

Q1. What research have you done which could help people born with congenital glaucoma?

A1 None of my research is actually directed towards congenital glaucoma, i.e. the form of glaucoma which typically affects children. One of the projects which could have an indirect potential benefit is the Moorfields Motion Displacement Test (MDT) (See IGA News Spring 2010). We are currently considering changing the test moderately so that it can be done by children because it is an easy test: children these days are used to using computers and a computer mouse and we could turn it into a game.

Therefore this technology could be used for tracking glaucoma in children with congenital glaucoma. Most of the congenital glaucoma research though is done by Professor Peng Khaw at Moorfields and his colleagues.

Q2. Are you able to change the size of the lines or increase the density or brightness of the lines appearing on the screen in the MDT?

A2 Potentially yes, but we actually don't do that for a particular reason: by keeping them at high contrast lines (bright lines), it means that the test is not affected very much by cataract. The way that we test the sensitivity of the retina is with the magnitude of the displacement so people with very high sensitivity can detect very subtle wobbling, while for those with reduced sensitivity you need to move the line further before it is perceived. So that is how we modify the stimulus.

Q3. How long does the test take on your laptop?

A3 The test for case findings (i.e. to answer the question: 'does someone have glaucoma or not?') is very quick, it takes 90 seconds per eye.

Q4. Are you generally approved for DVLA or driving tests?

A4 For using this test? It is something that we have got on the list of things to do but there are one or two things higher up the list at the moment but it is a very good question.

Q5. On the test where potentially the patient is a cheat and moves the eye around, is there any sort of automated detection of it that doesn't wobble where they actually move the eye to?

A5 Again a very good question. At the moment we don't have any mechanism for identifying what we call losses of fixation where someone moves their eye about. Now in conventional visual field testing, although that is measured, it is not a very good indicator of reliability therefore even if patients do move their eyes around a bit it doesn't mean that the test is unreliable. Part of our plan for research with this instrument is to relate eye movements to reaction times, the time it takes to press the button when there is a movement, and we believe that there will probably be a link between patients looking around and reacting more slowly. So we are going to do that in a more indirect way.

Q6. I have pseudo-exfoliative glaucoma – is there any research being done into the causes of pseudo-exfoliation?

A6 Yes absolutely. Just last year in fact or may be the year before a new gene was found so it is now possible to screen people for susceptibility for pseudo-exfoliation. It won't tell us which patients with pseudo-exfoliation will go on to get glaucoma but it is getting part of the way there and also

the research grant that has been awarded to Colm O'Bryan looking at this tissue susceptibility factor but specifically for pseudo-exfoliation.

Q7. It sounds as if you may be thinking of a cure for it.

A7 No cure as yet but the first job, if you like, in research is to identify the cause. That has largely been done. The gene defect has been identified so the research into a cure leads from identifying the cause.

Q8. If the research identifies the gene, can you actually do something about that?

A8 Not yet. People are looking into gene therapy and methods of replacing damaged cells/damaged genes so that is something that may be in the future. It isn't there yet.

Q9. Cataracts were mentioned a short while ago, do we know if people with glaucoma are at greater risk or less risk of developing cataracts? If you have already got glaucoma is surgery available?

A9 I think that you have two questions there, so I will deal with the cataract question first. The answer is yes, patients with glaucoma are a little more likely to get cataracts or they get cataracts sooner and that is largely related to the treatments for glaucoma. So using eye drops for glaucoma, which are essential,

can lead to a slightly increased risk of cataract; surgery for glaucoma leads to an increased risk as well but unfortunately there is no other way of controlling the pressure in the eye so we have to use one or the other.

Regarding your question about surgery for glaucoma: yes, in some people if the eye drops are not succeeding in keeping the pressure at a level that the Clinician believes is a safe level then surgery is often a very good option.

Q10. You said one of the risk factors in glaucoma is low blood pressure - can eye drops affect this?

A10 Yes, they can do. The effect on eye pressure is greater than the effect on blood pressure and in most people it is not a problem, but in people we identify as having low blood pressure then we may consider not using a beta blocker in those people. We need to actually measure the blood pressure throughout a 24 hour period to identify people who have low blood pressure. As I say, for most people it is not a problem.

The people that we need to investigate further, if you like, are people who are continuing to lose a bit of vision despite eye pressure that seems to be at an adequate level. So in that case if we think the eye pressure is controlled but patients are still getting worse then measuring the

blood pressure is the next thing we do.

Q11. Can I ask your opinion on laser trabeculoplasty? I saw one Consultant who thought no, it was not a good idea. I have got normal pressure glaucoma with quite a lot of field vision loss. And then I saw another Consultant who was terribly enthusiastic and said I must do it. So I am now being left with two opinions and what should I do?

A11 I don't know. It is a difficult one. In some people the laser is useful but it doesn't work in everybody. It is a fairly harmless procedure so it is uncommon for laser to cause the pressure to go up. So it is a relatively benign procedure to do and if it works it is helpful but it does tend to wear off. Some of the new forms of laser treatment can be repeated such as Selective Laser Trabeculoplasty (SLT). The evidence base isn't very strong and we have recently received an application for a clinical trial to compare laser treatment with drops to see which is more effective and perhaps how they might be used together. So I haven't really answered your question but you know it is a relatively harmless procedure so if you were to go with the opinion that it is a good idea you are unlikely to come to harm as a result of that even if it doesn't work.



Q12. Can one become an organ donor for lungs and kidneys etc if one has pseudo-exfoliative glaucoma?

A12 As far as I am aware, yes. Not for cardio vascular things though so probably not heart but other organs probably.

Q13. Please could you explain 'canaloplasty', would this be available instead of a second trabeculectomy for pseudo-exfoliative glaucoma when drops and laser have failed.

A13 Well, probably not. Canaloplasty is a technique where the drainage system of the eye is expanded by forcing in some viscous fluid. It is probably not useful after conventional glaucoma surgery. It may work as first glaucoma surgery but it probably doesn't work as well as conventional glaucoma surgery trabeculectomy.

Q14. When taking Cosopt and Xalatan in one eye, what type of rash can one get and what is the best tablet to take for daily headaches due to the medication?

A14 I think the answer is if you are getting a rash from your drops you need to go back to your Ophthalmologist to see if they can give you different drops and hopefully you won't need to take the headache tablets either then. I won't say which drops are most likely to be causing it.

(If you are experiencing any side effects which could be related to your eye drops, please don't hesitate to contact the IGA Sightline on 01233 64 81 70)

Q15. Is there any research into alternative things? For example taking Ginkgo Biloba has been said to help...

A15 There is none ongoing that I am aware of at the moment. There is one publication from Luciano Quaranta in Brescia Northern Italy that has looked at Ginkgo Biloba in glaucoma. It is said to improve blood flow and it also has substances in it that are quite good for nerve tissues so the rationale is reasonable. It may improve visual function a little bit but no one has looked at it in progressive to see whether or not it changes the rate of change of glaucoma so it is really an unanswered question. There are some people who are very keen on it. Bob Rich in New York goes around the world telling everybody that he takes it himself and it is relatively harmless. You shouldn't take Ginkgo Biloba if you are also taking aspirin or anything else that may thin the blood but if you are not taking anything that thins the blood then Ginkgo Biloba probably does no harm and may do some good but there is no evidence.

Q16. During this lecture a few years ago, by another Professor, we were told that a small piece

of dark chocolate every day improved glaucoma which is very good news...

A16 Actually I think he probably misled you with a small piece of dark chocolate. It is actually 7 kilos a day. (Audience laughing)

Part 2. Q&A session with Geoff Roberson, Professional Adviser, AOP.

Q1. How much are the views you expressed in your talk, your own views and how much are they the views of the Association of Optometrists. Were you taking an official stand today?

A1 I believe the two are largely coincidental. I do believe, and I have spent 30 odd years measuring intraocular pressure, checking visual fields and identifying people with glaucoma, that I can contribute more to the whole process. I don't think that every optometrist is going to want to be involved, particularly in the diagnosis and monitoring of stable glaucoma patients, but I think there are sufficient Optometrists who would be interested and have the skills and inclination to become involved. These are therefore my personal views but they are largely coincidental with the views of the Association of Optometrists (AOP) so I am speaking for both myself and for the AOP.

Q2. You said in your presentation: 'if the eye pressure is in the required range': what is the required range?

A2 The required range for a patient with glaucoma is the pressure at which no further deterioration in the visual field occurs. This is commonly called the target pressure and it is set and revised by the ophthalmologist who is responsible for the individual concerned and it is a figure that is different for every glaucoma patient. The normal range for intraocular pressure in a healthy eye is 10 to 21mm Hg, but there are forms of glaucoma where the pressure never rises above 21mm Hg (normal tension glaucoma) and other people whose optic nerve can survive pressures above 21mm Hg without suffering any deterioration of their visual field (people with ocular hypertension). Therefore it is impossible to give a simple answer to your question except that the required range differs from individual to individual.

Q3. Do you see these NICE guidelines being revised at all because it is causing enormous problems in our hospital? The queue has been added to but the priority is given to the new patients because the targets set are that they apparently must meet those in a certain time and the regular patients have gone to the back of the queue.



A3 Well I don't know, I am not an expert on NICE and how they work. My understanding is that guidelines are reviewed after a two year period. It doesn't mean that they will be revised, but that the group that drafted them is reconvened and the guidelines are reviewed and if there have been some changes or there is new evidence in the meantime then the content will be revised.

Q4. What is the percentage of people with Ocular Hypertension seen by local Optometrists who go on to develop glaucoma?

A4 Professor Garway-Heath: it depends largely on the level of intraocular pressures, the higher the pressure the greater the risk of going on to develop glaucoma but it is in the order of 5%. It is a small proportion.