A survey of attitudes of glaucoma subspecialists in England and Wales to visual field test intervals in relation to NICE guidelines

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ABSTRACT

Objectives: To establish the attitudes of glaucoma specialists to the frequency of visual field (VF) testing in the UK, using the NICE recommendations as a standard for ideal practice.

Design: Interview and postal survey.

Setting: UK and Eire Glaucoma Society national meeting 2011 in Manchester, UK, with a second round of surveys administered by post.

Participants: All consultant glaucoma specialists in England and Wales were invited to complete the survey.

Primary and secondary outcome measures:
(1) Compliance of assigned follow-up VF intervals with NICE guidelines for three hypothetical patient scenarios, with satisfactory treated intraocular pressure and (a) no evidence of VF progression; (b) evidence of VF progression and (c) uncertainty about VF progression, and respondents were asked to provide typical follow-up intervals representative of their practice; (2) attitudes to research recommendations for six VF in the first 2 years for newly diagnosed patients with glaucoma.

Results: 70 glaucoma specialists completed the survey. For each of the clinical scenarios a, b and c, 14 (20%), 33 (47%) and 28 (40%) responses, respectively, fell outside the follow-up interval recommended by NICE. Nearly half of the specialists (46%) agreed that 6 VF tests in the first 2 years was ideal practice, while 16 (28%) said this was practice ‘not possible’, with many giving resources within the NHS setting as a limiting factor.

Conclusions: The results from this survey suggest that there is a large variation in attitudes to follow-up intervals for patients with glaucoma in the UK, with assigned intervals for VF testing which are, in many cases, inconsistent with the guidelines from NICE.

INTRODUCTION

Visual field (VF) testing, in the form of standard automated perimetry, is the most frequently performed investigation for the functional assessment of patients with primary open-angle glaucoma (POAG) in the UK.1 The aim of VF testing is to detect functional deficit in patients with suspected disease and monitoring of patients with established POAG.2

The frequency of VF tests over a given period for a patient with POAG is governed by the clinician’s estimate of the likelihood and speed of progression of disease, which in turn may depend on the level of intraocular pressure (IOP) control and stage of disease.
as well as other factors such as the age of the patient and degree of VF reliability. Test intervals are essentially a risk/benefit trade-off: an interval which is too long may allow timely detection of progressive VF loss to be missed while multiple tests at short-test intervals in patients at low risk of progression may mean unnecessary extra visits and use of hospital resource. Although some published guidelines regarding the frequency of VF testing are available, these vary considerably. Results from statistical modelling suggest that six VF tests in 2 years (ie, approximately 1 every 4 months) in newly diagnosed patients may be necessary to allow detection of patients who may be progressing ‘rapidly’ in terms of VF loss. The National Institute of Clinical Excellence (NICE) has recognised the current lack of evidence regarding the frequency of monitoring intervals for patients with POAG and recommended future research in this area of study to substantiate current practice. Indeed, recent research has focused on the optimum number and interval between VF tests for patients.

Given that POAG accounts for a major proportion of ophthalmology workload, with an estimated one million outpatient visits in the UK annually, the frequency of testing has important implications for resource management and service delivery, as well as cost in the outpatient setting.

We undertook a national survey to establish the attitudes of glaucoma subspecialists to the frequency of VF testing, using NICE recommendations as a benchmark, and also sought to investigate perceived barriers to frequent VF testing of patients with glaucoma.

**MATERIALS AND METHODS**

The current study was undertaken as part of a larger National Institute for Health Research (NIHR)-funded project to evaluate factors governing VF test intervals in clinical practice. The current study was needed in order to infer the extent to which actual VF intervals and frequencies of glaucoma subspecialists to the frequency of VF testing, using NICE recommendations as a benchmark, and also sought to investigate perceived barriers to frequent VF testing of patients with glaucoma.

**Survey population**

The questionnaire was administered to all UK glaucoma consultants by two methods to ensure maximum response: (1) by hand at the UK & Eire Glaucoma Society (UKEGS) Meeting in December 2011 in Manchester or (2) by post, with a self-addressed prepaid envelope, in February 2012. All responses were carried out by self-completion of the questionnaire and were collected anonymously and then combined to form one dataset. All glaucoma specialists, identified from a list provided by the Royal College of Ophthalmologists (n=150), were sent the postal survey. Specialists who had previously completed the survey at UKEGS were requested not to respond again. This study was reviewed and approved by the City University London School of Health Science Research and Ethics committee.

**Questionnaire design**

The questionnaire consisted of five questions. Questions 1–3 were used to gather information of the grade and location of work (England and Wales) of the responders and to identify consultants with a subspecialist interest in glaucoma. Question 4 described three distinct situations designed to simulate common clinical scenarios. For patients with POAG who were being monitored on treatment and attending a follow-up assessment, responders were asked to assign typical follow-up assessment intervals for a patient with IOP deemed to be at (or below) ‘target IOP’ and

- a. No evidence of VF progression and no change in treatment
- b. Evidence of VF progression and change of treatment
- c. Uncertainty about VF progression and no change of treatment

These scenarios were chosen to reflect the clinical situations which have been given by NICE. Follow-up intervals of 6–12 months for the first scenario and 2–6 months for the latter two have been recommended by NICE.

The last question, question 5, was open ended; specialists were asked about their views on research that has suggested that all newly diagnosed patients would benefit from six VF examinations (every 4 months) in the first 2 years of follow-up from diagnosis in order to identify rapidly progressing patients.

**Data analysis**

For each of the patient scenarios in question 4, the follow-up interval given by each responder was compared with NICE-recommended intervals. The proportion of responses (with either the minimum or maximum interval) lying outside NICE-recommended intervals was computed (figure 1).

For question 5 (whether 6 VFs should be performed in the first 2 years for newly diagnosed patients), responses were classified into five categories for ease of reporting: ‘agree’; ‘disagree’, already represents ‘current practice’ locally; ‘not possible’ and possible ‘alternatives’ to this practice and are represented in a pie chart (figure 2).

**RESULTS**

The questionnaire was returned by 70 Consultant Ophthalmologists currently employed in England and Wales and with a self-declared specialist interest in glaucoma. From the conference, responses were obtained from 28 specialists. The remainder of the responses (42) were received through the postal survey. Figure 1 shows the follow-up intervals given by each of the responders for each of the clinical scenarios a, b and c described in question 4. For each of these, 14 (20%), 33 (47%) and 28 (40%) responses, respectively, fell outside the NICE-recommended intervals.

Question 5 was answered by 57 of the 70 specialists. Nearly half of these (26/57=46%) agreed that six VF...
tests in the first 2 years was ideal practice (figure 2), but admitted that the practicalities of this would be challenging. Example responses that fell in this category included, “Agree but practical issues found in a busy glaucoma clinic may be a hurdle to achieve this target.”

Two delegates (3%) indicated that this was already their current practice. Six specialists (11%) disagreed with the suggestion of six VF tests, while 16 (28%) said this was ‘not possible’, again listing limited ‘capacity’ or resources as a constraining factor. (The width of the 95% CI associated with these estimates, with n=57, is about ±15%.) Examples of responses that fell in the latter category included, “Totally out of touch with what is possible in the current NHS clinics with such limited capacity.” A few alternatives were suggested to the six VF tests, including alternating imaging and VF tests for detecting progression. For example, one responder stated, “Instead of function tests, structural ones: GDx (scanning laser polarimetry)/OCT would be better.”

**DISCUSSION**

The aim of the present study was to report the attitudes of glaucoma consultant subspecialists in England and
Wales to the frequency of VF testing for patients with glaucoma, by exploring the designated test intervals for patients in three clinical scenarios. The hypothesis was that clinicians would be fully compliant with NICE guidelines in their attitudes to intervals for VF testing. However, the results of the survey disprove this hypothesis. We found a wide variation in the designated test intervals, with respect to NICE recommendations. This variation in attitudes is likely to reflect differences in clinical practice, although this has yet to be established. A recent retrospective study of 100 patients conducted at a single centre found that 89% of assigned monitoring intervals were in accordance with NICE guidelines.

The variation in individual attitudes to the frequency of testing is reflected in differing recommendations for the frequency of testing in glaucoma. For example, NICE recommend VF testing at 6–12 month intervals for a patient at target IOP and a stable VF. The European Glaucoma Society (EGS) recommends three VF tests in the first 2 years for a newly diagnosed patient with glaucoma, with less specific guidance thereafter.

Given that more frequent testing is associated with a higher likelihood of identifying progression, variations in practice with regard to the frequency of testing are likely to imply inconsistencies in patient management and resource utilisation nationally. The authors estimate the cost of a single VF in an NHS setting to be in excess of 50 pounds per test. There are approximately 10 000 new cases of POAG per year. With these estimated costs, three tests per year equate to a cost of 1.5 million pounds per year for this newly diagnosed patient cohort alone. Clearly, the outpatient workload for patients with glaucoma has substantial cost implications for the NHS.

In view of the implications of frequent testing, it is unsurprising that research has focused on the frequency of testing in glaucoma. For example, Malik R, Baker H, Russell RA et al. BMJ Open 2013;3:e002067. doi:10.1136/bmjopen-2012-002067

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Contributors All authors have made substantive intellectual contributions to this study: RM drafted the manuscript; HB carried out the analysis presented in the results and acquired the data; RAR was involved in the design of the study and acquiring the data; DPC made substantial contributions to conception and design, revising and approving the final article.

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