

## SHORT REPORT

# Evaluation of the management of optic neuritis: audit on the neurological and ophthalmological practice in the north west of England

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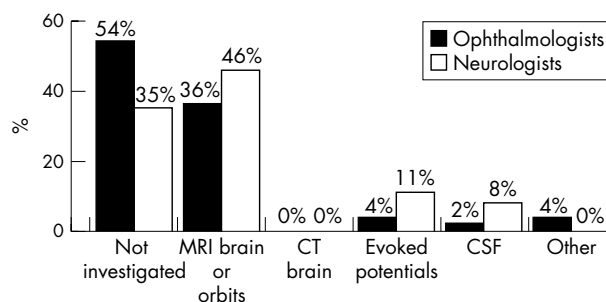
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The management of acute optic neuritis by neurologists and ophthalmologists in the north west of England was assessed in the light of the Optic Neuritis Treatment Trial (ONTT) recommendations. A questionnaire on a fictitious case of typical unilateral optic neuritis was mailed to all consultant ophthalmologists and neurologists working in the North West and Merseyside Health Authorities. They were then asked to comment on management of the case. Fifty two out of 86 ophthalmologists and 20 out of 28 neurologists replied. The overall response rate was 63%. Sixty five per cent of neurologists and 46% of ophthalmologists would investigate a typical case of acute optic neuritis further. Forty six per cent of neurologists and 36% of ophthalmologists were likely to arrange MRI of the brain or orbit. Significantly more neurologists (55%) than ophthalmologists (9%) chose to treat with intravenous methylprednisolone ( $p < 0.005$ ). Significantly more ophthalmologists (64%) than neurologists (32%) chose not to give steroids ( $p < 0.025$ ). Oral prednisolone alone was rarely selected for treatment. Respondents were more likely to discuss multiple sclerosis with the referring doctor than with the patient. Only 32% of ophthalmologists and 20% of neurologists would clearly mention the possibility of improvement to the patient. Clear differences in practice between ophthalmologists and neurologists remain. A consensus on practice guidelines on the issues raised might be useful.

Optic neuritis is a common cause of visual loss in young adults and is also often the first manifestation of multiple sclerosis. In one study<sup>1</sup> 75% of patients presenting with optic neuritis progressed to clinically definite multiple sclerosis<sup>2</sup> within 15 years. The ophthalmologists may thus be the first to consider a diagnosis of multiple sclerosis.

Recent studies, particularly from the Optic Neuritis Study Group, have helped clarify the natural history and treatment of optic neuritis.<sup>3–6</sup> These studies have shown that, compared with oral prednisolone or placebo, treatment with intravenous methylprednisolone (IVMP) results in more rapid recovery of vision but without long term difference in visual acuity. Moreover, there was a higher rate of recurrence of optic neuritis in the oral prednisolone treated group. Subsequent development of clinically definite multiple sclerosis was delayed for up to 2 years in patients treated with IVMP. There was no difference in the incidence of clinically definite multiple sclerosis at 3 years when treated patients were compared with the placebo group. Practice parameters on the use of steroids in acute monosymptomatic optic neuritis have now been established in the United States.<sup>7</sup>

Despite widespread publication of the ONTT results, it was our view that ophthalmologists and neurologists in the United Kingdom continue to vary markedly in their approach to the treatment of acute unilateral optic neuritis. To clarify the



**Figure 1** Investigations chosen by the two groups of responders.

situation, we undertook a survey of the treatment of optic neuritis comparing the practice among ophthalmologists and neurologists in the north west of England.

## METHODS

The names and addresses of practising consultant ophthalmologists and neurologists in the various North West and Merseyside Health Authorities were obtained from the databases of the Royal College of Ophthalmologists and Association of British Neurologists. Respective departments in individual hospitals were then contacted to make sure every potential respondent had been traced.

A questionnaire (enclosed as appendix) posing a clinical vignette on a fictitious patient similar to cases in the Optic Neuritis Study was mailed to the consultants who were then asked to comment on investigation and management of the case presented. Eighty six ophthalmologists and 28 neurologists were mailed. To improve response rates, the same questionnaire was remailed to all consultants after 4 weeks. All replies were anonymous.

Statistical analyses were made using  $\chi^2$  test results.

## RESULTS

Fifty two (60%) ophthalmologists and 20 (71%) neurologists replied. The overall response rate was 63%.

### Investigation

Sixty five per cent of neurologists and 46% of ophthalmologists would investigate a typical case of acute unilateral optic neuritis further (fig 1). Forty six per cent of neurologists and 36% of ophthalmologists were likely to arrange MRI of the brain or orbit. More neurologists (19%) than ophthalmologists (6%) would examine the CSF or test visual evoked potentials.

**Abbreviations:** ONTT, Optic Neuritis Treatment Trial; IVMP, intravenous methylprednisolone

Thirty four per cent of ophthalmologists said they would refer the patient to their neurologist or neuro-ophthalmologist colleagues for further opinion, compared with only 5% of neurologists who would refer to a neuro-ophthalmologist.

### Treatment

Many more neurologists (55%) than ophthalmologists (9%) chose to treat the patient with intravenous methylprednisolone ( $p < 0.005$ ). Only 9% of neurologists and 4% of ophthalmologists would follow this with a course of oral steroids. No neurologist and only one ophthalmologist would use oral prednisolone alone.

Sixty four per cent of ophthalmologists chose not to give steroids at all compared to only 32% of neurologists ( $p < 0.025$ ).

### Information to patient and referring doctor

Seventy per cent of neurologists and 61% of ophthalmologists would use "inflammation" to describe the nature of the condition to the patient. When directly asked, 40% of neurologists but only 6% of ophthalmologists ( $p < 0.025$ ) said they would or possibly would discuss multiple sclerosis with the patient. This compared to 70% of neurologists and 55% of ophthalmologists who would mention multiple sclerosis to the referring doctor.

In our survey, only a minority of ophthalmologists (32%) and even fewer neurologists (20%) clearly mention the possibility of improvement to the patient.

### DISCUSSION

Oral prednisolone was rarely suggested for the treatment of acute optic neuritis, consistent with the findings of the Optic Neuritis Study Group. Most ophthalmologists avoided steroids completely, whereas neurologists preferred IVMP, without any subsequent oral steroids. These results are in keeping with trends elsewhere. In a recent United States based study, 90% of ophthalmologists and 95% of neurologists reported a reduction in the use of oral prednisolone alone. In the same study twice as many neurologists as ophthalmologists preferred using IVMP, whereas 53% of ophthalmologists but only 16% of neurologists chose not to treat at least half of their patients. The more frequent use of IVMP by neurologists may reflect their desire to hasten visual recovery using a short course of a relatively risk free treatment, although other explanations have also been proposed.<sup>8</sup> It may equally reflect their familiarity with this treatment in relapsing multiple sclerosis. Neurologists, more than ophthalmologists, tend to look for other evidence of demyelination. It has been suggested that this may be due either to their tendency to see optic neuritis as an early manifestation of multiple sclerosis or to their lack of familiarity with the findings of the Optic Neuritis Study Group.<sup>8</sup>

Ophthalmologists are less inclined to discuss multiple sclerosis with the patient. This is reflected in the greater levels of referrals and may partly explain lower levels of further investigation, including MR scanning.

When compared to United States based data,<sup>8</sup> fewer practitioners from either group in our survey are inclined to request an MR scan. This may reflect a combination of different practice ethics together with the relatively restricted facilities for MR scanning in many United Kingdom centres.<sup>9</sup>

Practitioners from both groups are reluctant to clearly mention improvement to the patient. This is surprising given the excellent prognosis of this condition especially in the young.<sup>10</sup> Worries about future development of clinically definite multiple sclerosis may play a part.

Our survey was aimed to look at the current practice in managing acute optic neuritis by the respondents. A relatively small but representative cohort of respondents was assessed. Uniformity of practice was seen in the reluctance to use oral prednisolone alone. Clear differences in practice between ophthalmologists and neurologists were found on many other issues including the use of MR scanning and treatment with methylprednisolone. Although the ideal management

remains a matter of discussion, a consensus on practice guidelines on the issues raised in this audit might be useful.

### Limitations of the study

Postal questionnaire surveys of physician practice are commonly used clinical audit tools. We used this method to assess the clinicians' perceptions on aspects of patient care. Potential limitations to this method of audit include the possibility that it addresses the respondents' idealised views rather than their actual practice. Strengths of the postal questionnaire method are simplicity and convenience. A recent United States based study comparing ophthalmological and neurological practice in optic neuritis also used similar questionnaire methods.<sup>8</sup> Although a higher response rate would have countered possible non-response bias, it is unlikely that this would have substantially altered the eventual conclusions.

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### APPENDIX: QUESTIONNAIRE FOR AUDIT

A 27 year old woman comes to you with a 2 day history of unilateral visual loss. She has always been in perfect health prior to this episode. From classical history and signs you diagnose acute unilateral optic neuritis.

(1) You would (please tick):

- Treat her with IV methylprednisolone ( )
- Treat her with IV methylprednisolone followed by oral steroids (please mention dose and duration of oral steroids) ( ) \_\_\_\_\_
- Treat her with oral prednisolone only (please mention dose and duration) ( ) \_\_\_\_\_
- Treat her with steroids only if evidence of demyelination elsewhere ( )
- Not give her steroids ( )
- Others (please comment) ( ) \_\_\_\_\_

(2) You would arrange for (tick one or more, as applicable):

- MR brain ( ) MR orbits ( ) CT brain ( ) evoked potentials ( ) CSF ( ) others (please mention) \_\_\_\_\_
- Not investigate for demyelination ( )
- Any other comments on investigations \_\_\_\_\_

(3) You would refer to a: neurologist ( ) neuro-ophthalmologist ( ) none ( ) other (please mention) \_\_\_\_\_

(4) What would you tell the patient? \_\_\_\_\_

(5) Would you mention MS to the:

- Patient? Y( ) N( )
- Referring doctor? Y( ) N( )
- You are a consultant neurologist ( ) ophthalmologist ( )

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