



How well are we giving driving advice to glaucoma patients?

Yap Ngee Jin¹, Nathan Ng^{2*}

¹NHS Tayside

²NHS Lothian

*Corresponding Author:

Abstract

Background

Glaucoma is one of the most common ophthalmic conditions encountered in primary and secondary care. Glaucoma has the potential to impair driving. This audit aims to investigate how well we are giving driving advice to Glaucoma patients in the setting of the United Kingdom (UK).

Methods

Two junior doctors interviewed all glaucoma patients who attended glaucoma clinic in 4-week period on whether they had received advice regarding driving. Patients who never drove and did not respond were excluded from the analysis

Results

Of the 110 patients, we found that only 29% of patients recalled receiving any driving advice from their ophthalmologist or optometrist. A significant number of patients (33%) wanted more information.

Conclusion

Driving advice is poorly delivered to patients with Glaucoma. Simple interventions can potentially increase delivery of advice to patients.

Introduction

Glaucoma is one of the most common ophthalmic conditions encountered in primary and secondary care, accounting for up to 2% of visual impairment and 8% of global blindness¹. In the United Kingdom, glaucoma patients make up 23% of all follow-up attendances in the eye service and are therefore a significant part of an ophthalmologist's workload. These figures are expected to increase in accordance

Copyright © 2022. The Author(s). This is an open access preprint (not peer-reviewed) article under [Creative Commons Attribution-NonCommercial 4.0 International](https://creativecommons.org/licenses/by-nc/4.0/) license, which permits any non-commercial use, distribution, adaptation, and reproduction in any medium, as long as the original work is properly cited. **However, caution and responsibility are required when reusing as the articles on preprint server are not peer-reviewed.** Readers are advised to click on URL/doi link for the possible availability of an updated or peer-reviewed version.

How to Cite:

Yap Ngee Jin and Nathan Ng, "How well are we giving driving advice to glaucoma patients?". *AIJR Preprints*, 375, Version 1, 2022.

with longer life expectancies and an ageing population. Having glaucoma and glaucomatous visual field loss are potentially associated with impairment of the patient's ability to drive².

Drivers with glaucoma have been shown to be significantly less safe on the roads. When compared with drivers without glaucoma, drivers with glaucoma were found to have made more driving errors with nearly double the rate of critical errors³. It was found that lane positioning, planning was impaired. Interestingly, despite objective evidence of impaired driving, self awareness and reporting of this remained low³. The Driver and Vehicle Licensing Agency (DVLA) lays out clear rules for reporting of the condition. All drivers with glaucoma in both eyes must inform the DVLA, while commercial drivers with glaucoma in one eye must also notify the DVLA. Following which, patients will be required to have a specific driving field test to assess their ability to drive safely.

In spite of evidence showing that patients with glaucoma may have impaired driving ability and clear rules of when to notify the DVLA, it is unclear how well glaucoma patients adhere to these rules. In addition, an audit conducted in Malaysia demonstrated that glaucoma patients do not receive sufficient education regarding education on their condition and its effects on driving. In the initial audit, only 36% of drivers with bilateral visual field defects recalled being advised on the dangers of driving. This audit aims to investigate how well we are giving driving advice to Glaucoma patients in the setting of the United Kingdom (UK).

Methods

This was a cross sectional survey where we retrospectively identified patients who attended glaucoma clinic in a 4-week period in 2021. Two junior doctors interviewed all glaucoma patients from this 2-week period 2 months after their clinic appointment, on whether they had received advice regarding driving. Patients who never drove and were uncontactable were excluded, leaving 110 patients that were included for analysis. The audit was carried out in our local eye centre.

Results

Of the 110 patients, majority were still currently driving (n=70, 64%). From the interview, we found that only 29% of patients recalled receiving any driving advice from their ophthalmologist or optometrist. A significant number of patients (33%) wanted more information regarding driving.

Discussion

Glaucoma patients may be unaware if their condition is affecting their driving. They may also not know about the conditions that mandate reporting of their condition to

the DVLA. Our audit showed that a significant number of patients with glaucoma are still currently driving and that delivery of driving advice is poor.

Puvanchandra *et al*⁴ reported similar findings of poor delivery of driving advice to patients with glaucoma. Of note, they reported that only 20% of drivers with bilateral visual field defects were advised to inform the DVLA. Following their initial audit, the use of simple intervention such as a sticker prompt successfully improved delivery of advice and documentation.

Similarly, Low *et al*⁵ in Malaysia utilised adhesive labels, with junior doctor education to improve delivery of advice to patients. Their study concluded that eye doctors are inadequately identifying, advising and documenting the dangers of driving in medical notes. Following intervention with simple measures, all interviewed drivers recalled being advised about driving⁵. Findings of this study were limited by the fact that it relied on the patient's recollection and therefore prone to recall bias. It was not stated how long after followup clinic appointment were patients interviewed and whether this was standardised. If patients had been interviewed 1 month after their appointment in the intervention group while patients pre intervention were interviewed 3 months after appointment, patients post intervention will be more likely to recall having been given advice regarding driving.

The next cycle of our audit will also utilise similar simple measures to assess if delivery of driving advice can be improved. We will utilise a standardised questionnaire and time frame post clinic appointment to minimise bias.

Conclusion

Driving advice is poorly delivered to patients with Glaucoma. Simple interventions can potentially increase delivery of advice to patients.

References

1. Schuster, A. K., Erb, C., Hoffmann, E. M., Dietlein, T. & Pfeiffer, N. The diagnosis and treatment of glaucoma. *Dtsch. Arztebl. Int.* (2020). doi:10.3238/arztebl.2020.0225
2. Van Landingham, S. W. *et al.* Driving patterns in older adults with glaucoma. *BMC Ophthalmol.* (2013). doi:10.1186/1471-2415-13-4
3. Wood, J. M., Black, A. A., Mallon, K., Thomas, R. & Owsley, C. Glaucoma and driving: On-road driving characteristics. *PLoS One* (2016). doi:10.1371/journal.pone.0158318
4. Puvanachandra, N., Kang, C. Y., Kirwan, J. F. & Jeffrey, M. N. How good are we at advising appropriate patients with glaucoma to inform the DVLA? A closed audit loop. *Ophthalmic Physiol. Opt.* (2008). doi:10.1111/j.1475-1313.2008.00574.x
5. Low, A., Singh, S., Ang, E. L., Kadir, A. J. & Samsudin, A. Effectiveness of simple interventions to remind eye doctors to educate glaucoma patients about the dangers of driving. *Malaysian Fam. Physician* (2021). doi:10.51866/oa1147