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Dementia and driving: An approach for general practice

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Dementia and driving: An approach for general practice

Abstract

Background As our population ages, the proportion of drivers with dementia will continue to rise. Increasingly, health professionals are faced with the clinical dilemma of determining fitness to drive. Unfortunately, the management of drivers with dementia is fraught with hazards.

Objective This article attempts to provide an overview of the complex issue of driving and dementia as it relates to general practitioners in Australia. In addition, an evidence based management strategy is proposed.

Discussion When determining an individual's fitness to drive, a clinician's input may have legal, ethical, emotional and social ramifications. At present, a clear consistent national protocol detailing how one should establish fitness to drive is lacking. There is a need for research addressing how to facilitate early retirement from driving without jeopardising patient-doctor relationships.

Keywords

dementia, driving, approach, general, practice

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‘Dementia and driving: *An approach for general practice*’

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Case study

Olive, a 75 yo widow, has been attending your practice for over a decade. Three years ago, she was diagnosed with Alzheimer's disease but has remained relatively independent since. She lives with her daughter, Julie, and drives a car. Olive is compliant with her anticholinesterase medication. However, Julie reports further deterioration in her mother's memory with recent episodes of wandering. Upon questioning, you establish that Olive has been getting lost whilst driving. Furthermore, she has recently had a minor car crash and two near-misses. During your consultation with Olive, she becomes defensive, denies a history of accidents and states confidently that she is a safe driver. In your office, her MMSE is 20/30. The remainder of her examination is unremarkable. A reasonable course of management would include: (1) holding a frank, yet sensitive, discussion with Olive and her family members regarding the risks posed to her and to others in view of her dementia; (2) highlighting alternative transport options e.g. taxi subsidies, public transport; (3) explaining the necessity of driving retirement and that measures should be taken to remove her access to automobiles; (4) documenting your discussion; and (5) considering formal notification of the DLA (driver licensing authority) as per local legislative requirements.

Introduction

Driving is a deceptively complex task.¹ In 1997, Lipski argued that 'until we have better evidence about what is safe, we should not allow people with dementia to drive motor vehicles'.² Over a decade later, convincing evidence 'about what is safe' remains elusive.³ Moreover, no clear management protocols exist for Australian GPs caring for patients with dementia who drive. To complicate matters further, instructing a patient to

retire from driving may irrevocably damage a long-standing doctor-patient relationship.⁴ Snellgrove et al. established that an overwhelming majority of GPs do not wish to be responsible for the assessment of fitness to drive in people with dementia.⁵

What is dementia?

Dementia refers to a syndrome characterised by a progressive deterioration of memory and at least one other cognitive domain (e.g. language, executive function, praxis) which interferes with one's daily function and independence.⁶ There are numerous conditions which result in dementia. The commonest causes are Alzheimer's disease (60% of cases), vascular dementia (5-20% of cases), Lewy body disease and frontotemporal dementia.⁷ Other less common causes include alcoholism, Parkinson's disease, Huntington's disease, progressive supranuclear palsy and normal pressure hydrocephalus.

Scope of this issue in Australia

Meta-analysis of epidemiological data has established that the prevalence of dementia in people over the age of 65 is 6.4%.⁸ However, the incidence of new cases rises exponentially after one reaches 65 years of age. It is estimated that the number of people in Australia with dementia has reached 257,000 and will rise to 591,000 by 2030.⁹

Given the ever increasing number of older drivers¹⁰, there is a pressing need for research addressing how best to enable early retirement from driving.

What is the impact of dementia on driving skills?

Two major issues of relevance to drivers with dementia are: (1) the progressive nature of the condition; and (2) the potential for loss of insight. There is evidence that driving skills deteriorate with increasing dementia severity.¹¹ More specifically, dementia frequently leads to impaired visuospatial skills, attention, memory and judgement.¹² Driving is a complex task which requires such functions. Visuospatial skills are necessary to ensure accurate depth perception, lane alignment and overtaking. Attention and judgement are important factors when negotiating roundabouts or intersections. Memory deficits can contribute to getting lost and may result in errors whilst driving¹². The patterns of neurological deficit that occur in dementia vary depending upon the subtype.

What are the risks?

Older drivers have relatively few crashes.^{10,13} However, when the number of accidents per distance travelled is calculated, the crash risk of drivers over the age of 75 is similar to that of 16-24 year old drivers.^{13,14} It is not surprising that drivers with dementia have a significantly higher risk of car accidents compared to aged-matched cognitively normal drivers.² Two studies which compared the crash risk of individuals with dementia to cognitively normal controls determined an odds ratio ranging from 7.9 to 10.7.^{15, 16} Unfortunately, for a variety of reasons, many individuals with dementia do continue to drive after diagnosis.^{17,18} Several researchers have found that many retire from driving only after they have had one or more crashes.^{15,19,20} In addition, one study demonstrated that 80% of those who were involved in a crash continued to drive afterward, with almost 40% having at least one more crash.²¹

Driving and mild dementia

Dobbs argues that although a diagnosis of early dementia should alert a doctor to the fact that a patient may not be competent to drive, it is not sufficient reason to enforce driving retirement in all cases.²² There is evidence to support such a claim; for example, Ott and Daiello²³ found that pooled data from two longitudinal studies^{24,25} involving 134 drivers with dementia established that 69% of drivers with mild dementia and 88% of drivers with very mild dementia and could pass on-road driving assessments.

National and international guidelines

A systematic review of the available literature by the American Academy of Neurology²⁶ identified several characteristics as indicative of patients with dementia who are at increased risk of unsafe driving. These included the CDR (clinical dementia rating) score, a carer's rating of a patient's driving ability as marginal or unsafe, a history of reported traffic offences, a history of crashes, reduced driving mileage, self-reported situational avoidance, MMSE (mini-mental state examination) scores of ≤ 24 , and aggressive or impulsive personality characteristics. Interestingly, the review also determined that an individual's self-rating of driving ability was not a reliable indicator of accident risk. The review established that there is insufficient evidence to support or refute the benefit of either neuropsychological testing or interventional strategies for drivers with dementia. Unfortunately, as there is neither a test nor a historical feature that accurately quantifies driving risk, clinicians can only make 'qualitative estimates of driving risk'.²⁶ Iverson et al. concluded that patients with mild dementia are at a substantially higher risk for unsafe driving and thus should strongly consider discontinuing driving²⁶.

In 2009, the Australian and New Zealand Society for Geriatric Medicine released a position statement²⁷ which specifically addressed the topic of driving and dementia. Some of the key features of this position statement are listed in *Table 1*.

Striking a balance

The process of retirement from driving may be either voluntary or involuntary. Enabling voluntary early retirement from driving could potentially reduce crash-related morbidity and mortality. It is widely recognised that ‘autonomy for the elderly is an extremely important goal both socially and economically’.²³ Unfortunately, the transition to non-driving has been linked to increased rates of depression²⁸ and placement in residential care.²⁹ This highlights an important, yet unresolved, issue: how should society, licensing authorities and the medical profession manage the issue of retirement from driving in a judicious manner?

What are the legislative requirements for Australian GPs and their patients?

As per the Austroads guidelines, an individual must not drive if ‘there is significant impairment of memory, visuospatial skills, insight or judgment or if there are problematic hallucinations or delusions’.³⁰ Furthermore, all drivers in Australia with a condition which may impact upon his/her ability to drive are legally obliged to inform the DLA. Most adults, however, are unaware of this obligation.³¹

Both South Australia and the Northern Territory have mandatory reporting legislation in place which applies to health professionals. Discretionary reporting applies to GPs in the remaining states and territories (see *Table 2*). The Australian Medical Association³² and

Somerville et al.³³ argue that mandatory reporting, by doctors, of all unfit drivers is inappropriate for a variety of reasons (e.g. it encourages concealment of symptoms³³).

A suggested management strategy for GPs

- Raise the issue of driving with all patients with cognitive impairment
- Avoid an over-reliance on MMSE scores^{5,26}
- Acknowledge that some spouses are unreliable judges of driving skills. They may be afraid to raise their concerns with you in view of the potential consequences.
- Aim to provide an early diagnosis of dementia (if possible) as this enables individuals and their families to plan for the transition to not driving^{10,34}
- Remind your patient of his/her obligation to report his/her diagnosis to the DLA
- Direct your patient and his/her family members to reliable sources of additional information e.g. Alzheimer's Australia (see *Resources*)
- Discuss alternative forms of transport e.g. public transport, family members
- Consider discussing the potential impact an accident would have upon others
- Inform patients that should an accident occur they may face civil or criminal prosecution
- Explain that one's car or life insurance policies may be void if one drives when deemed medically unfit to do so
- Document your discussions
- Reassess dementia severity and fitness to drive every 6 months for those patients with mild dementia who are deemed safe to continue driving^{1,5,27}

- Consider an occupational therapist driver assessment referral (limited by availability and cost) which can be repeated (see *Resources*)
- If unsure as to how to proceed then refer to a Geriatrician or Neurologist

Conclusion

The complex and serious issue of driving and dementia warrants a direct, yet sensitive approach by clinicians. For many patients, licence cancellation may be indicated without on-road assessment³⁵ and accepted without complaint. However, on occasion, individuals and/or their spouses may be reluctant to fall in line with a GP's well-founded recommendations. Optimal patient management is hampered by the lack of explicit national DLA guidelines or review mechanism⁵ which health professionals can access. It would seem that, for now, GPs remain dependent upon the art and science of medicine in order to achieve a satisfactory outcome for patients and the wider community.

Resources

- Alzheimer's Australia: www.alzheimers.org.au
- Austroads: <http://www.austroads.com.au/>
- National Dementia Hotline: 1800 100 500
<http://www.alzheimers.org.au/national-dementia-helpline.aspx>
- Occupational Therapy Australia: <http://www.otaus.com.au/>

List of tables

Table 1. Selection of key features of the ANZSGM position statement²⁷

Table 1. Key features of the Australian and New Zealand Society for Geriatric Medicine position statement²⁷

- Some people with mild dementia may drive safely
- It is not reasonable to suspend a patient's licence based solely on a diagnosis of mild dementia
- A driving co-pilot is not a recognised safe practice for reducing safety risk in dementia
- An occupational therapy on-road driving test is accepted as a 'gold standard' assessment
- Neuropsychological results generally do not sufficiently or consistently correlate with on-road driving performance
- Regular review (at least 6 monthly) of safe driving capacity is required in patients who retain a driving licence in early dementia

Table 2. Legislative requirements for Australian GPs³⁰

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State/territory	Mandatory reporting	Indemnity from legal action
Australian Capital Territory	No	Yes
Northern Territory	Yes	No
New South Wales	No	Yes
Queensland	No	Yes
South Australia	Yes	Yes
Tasmania	No	Yes
Victoria	No	Yes
Western Australia	No	Yes

References

1. Drazkowski JF, Sirven JI. Driving and neurologic disorders. *Neurology* 2011;76:44-9.
2. Lipski PS. Driving and dementia: a cause for concern. *Med J Aust* 1997;167:453-4.
3. Martin AJ, Marottoli R, O'Neill D. Driving assessment for maintaining mobility and safety in drivers with dementia. *Cochrane Database of Systematic Reviews* 2009;1.
4. Odell M. Assessing fitness to drive: Part 2. *Aust Fam Physician* 2005;34:475-7.
5. Snellgrove CA, Hecker JR. Driving and dementia: General practitioner attitudes, knowledge and self-reported clinical practices in South Australia. *Australasian Journal on Ageing* 2002;21:210-2.
6. American Psychiatric Association Diagnostic and Statistical Manual, 4th edn. Washington DC: APA Press, 1994.
7. Thal LJ, Grundman M, Klauber MR. Dementia: characteristics of a referral population and factors associated with progression. *Neurology* 1988;38:1083-90.
8. Van der Flier WM, Scheltens P. Epidemiology and risk factors of dementia. *J Neurol Neurosurg Psychiatry* 2005;76:2-7.

9. Access Economics 2009. Keeping dementia front of mind: incidence and prevalence 2009-2050. Final report by Access Economics Pty Limited for Alzheimer's Association Australia.
10. Alzheimer's Australia NSW. Driving and dementia in NSW: A discussion paper. 2010. Available at <http://www.alzheimers.org.au> [Accessed 20 Sept 2011].
11. Dubinsky RM, Stein AC, Lyons K. Practice parameter: risk of driving and Alzheimer's disease (an evidence-based review). *Neurology* 2000;54:2205–11.
12. Johansson K, Lundberg C. The International Consensus Conference on dementia and driving: A brief report. *Alzheimer Dis Assoc Disord*, 1997;11:62-9.
13. Williams AF, Carsten O. Driver age and crash involvement. *Am J Public Health* 1989;79:326-7.
14. O'Neill D. The doctor's dilemma: the ageing driver and dementia. *Int J Geriatr Psychiatry* 1992;7:297-301.
15. Friedland RP, Koss E, Kumar A, et al. Motor vehicle crashes in dementia of the Alzheimer's type. *Ann Neurol* 1998;24:782-6.

16. Zuin D, Ortiz H, Boromei D, Lopez OL. Motor vehicle crashes and abnormal driving behaviours in patients with dementia in Mendoza, Argentina. *European Journal of Neurology* 2002;9:29-34.
17. Carr D, Jackson T, Alquire P. Characteristics of an elderly driving population referred to a geriatric assessment center. *J Am Geriatr Soc* 1990;38:1145-50.
18. Odenheimer G. Dementia and the older driver. *Clinical Geriatric Medicine* 1993;9:349-64.
19. Kazniak AW, Keyl PM, Albert MS. Dementia and the older driver. *Hum Factors* 1991;33:527-37.
20. Kapust LR, Weintraub S. To drive or not to drive: preliminary results from the road testing of patients with dementia. *J Geriatr Psychiatry Neurol* 1992;5:210-6.
21. Cooper PJ, Tallman K, Tuokko H, Beattie BL. Vehicle crash involvement and cognitive deficit in older drivers. *J Safety Res* 1993;24:9-17.
22. Dobbs AR. Evaluating the driving competence of dementia patients. *Alzheimer Dis Assoc Disord* 1997;11:8-12.
23. Ott BR, Daiello LA. How does dementia affect driving in older patients? *Aging Health* 2010;6:77-85.

24. Ott BR, Heindel WC, Papandonatos GD, Festa EK, Davis JD, Daiello LA, Morris JC. A longitudinal study of drivers with Alzheimer disease. *Neurology* 2008;70:1171-8.
25. Duchek JM, Carr DB, Hunt L, Roe CM, Xiong C, Shah K, Morris JC. Longitudinal driving performance in early-stage dementia of the Alzheimer type. *J Am Geriatr Soc* 2003;51:1342-7.
26. Iverson DJ, Gronseth GS, Reger MA, Classen S, Dubinsky RM, Rizzo M. Practice parameter update: Evaluation and management of driving risk in dementia. Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology* 2010;74:1316-24.
27. Australian and New Zealand Society for Geriatric Medicine, Position statement number 11: Driving and dementia. Revised 2009. Available at <http://www.anzsgm.org/posstate.asp> [Accessed 5 Sept 2011].
28. Ragland DR, Satariano WA, MacLeod KE. Driving cessation and increased depressive symptoms. *J Gerontol A Biol Sci Med Sci* 2005;60:399-403.
29. Freeman EE, Gange SJ, Munoz B, West SK. Driving status and risk of entry into long-term care in older adults. *Am J Public Health* 2009;96:1254-9.
30. Austroads. Assessing fitness to drive for commercial and private vehicle drivers: Guidelines and standards for health professionals in Australia. 3rd edn. Sydney:

Austroads, 2003. Available at <http://www.austroads.com.au/aftd/index.html>

[Accessed 10 Sept 2011].

31. Assessing fitness to drive: Interim review report. Melbourne: National Transport Commission, 2006. Available at

<http://www.ntc.gov.au/filemedia/Reports/AFTDInterimReviewReportJul06.pdf>

[Accessed 21 Sept 2011].

32. Australian Medical Association. The role of the medical practitioner in determining fitness to drive motor vehicles. Canberra: AMA, 2008. Available at

<http://www.ama.com.au/node/3021> [Accessed 1 Sept 2011].

33. Somerville ER, Black AB, Dunne JW. Driving to distraction - certification of fitness to drive with epilepsy. *Med J Aust* 2010; 192: 342-4.

34. Workman B, Dickson F, Green S. Early dementia: Optimal management in general practice. *Aust Fam Physician* 2010;39:722-6.

35. Fox GK, Bashford GM. Driving and dementia: balancing personal independence and public safety. *Med J Aust* 1997;167:406-7.