Controversies in geriatric medicine

Deciding on driving cessation and transport planning in older drivers with dementia

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1. Introduction

Driving has become an almost indispensable part of everyday life for older Europeans, with falling use of public transportation and increasing personal affluence leading to greater access to the personal car [1]. These trends are particularly noticeable in rural areas, where the proportion of older people tends to be higher, and where public transport access may be least well developed [2].

Despite increasing levels of age-related disease and disability, older drivers compensate and adapt to their changing circumstances, and are the safest demographic group on the roads, with even the oft-quoted increased crash rate per kilometre disappearing when allowance is made for mileage travelled [3]. This, and an increasing awareness of the negative effects of driving cessation [4,5], have led to a significant attitudinal shift among clinicians to consider mobility as the primary concern in driving assessment, with due regard to safety to the same extent as other demographic groups [6].

Geriatricians in Europe have been undertaking research and developing expertise in developing guidelines for assessment and advice for older drivers who present to their clinical services, and in particular for the common syndromes of syncope [7], stroke [8], dementia [9] and Parkinson’s disease [10]. The skill-set of geriatricians contains many of the important elements required for this complex and individualized assessment, bearing in mind that those who require assessment of driving will have complex presentations, and often multiple morbidity: indeed, it may well be that another aspect of their health (vision, seizures) is of more significance to driving than their dementia [11].

In addition, it is hoped that the relatively broad approach to Comprehensive Geriatric Assessment (CGA) means that geriatricians will better understand the limitations of a predominantly cognitive approach to driving ability, and of the need to develop better approaches based on function and behaviour. Building on Comprehensive Geriatric Assessment, useful information can be determined by the multidisciplinary team, but the availability of on-road testing is critical to appropriate assessment of driving in those with dementia. The development of both present and future planning of driving and transport should be viewed as a collaborative process with patients and their families.

2. Approach and resources

2.1. History and examination

A systematic inclusion of a question on transport and driving is now mandatory in CGA of patients with memory problems [14], and should identify whether or not the patient drives [15], and this is important in view of the relatively low assessment of driving in primary care [16]. The overall assessment should include the usual elements of CGA, not with the specific view that findings in any one
area (specifically in cognition) will determine medical fitness to drive, but rather that the overall gestalt assessment by the clinician will give a sense of the patient’s general capabilities. The relatively poor clinical utility of cognitive scales in determining fitness to drive [17] relates to their lack of congruity to current models of driving behaviour and capabilities [18]. Again, this does not mean that cognition should not be assessed, but rather that such measures should be integrated with other factors in the CGA, including an assessment of insight/anosagnosia, judgment skills and strategic thinking.

The patient’s own assessment of driving should be assessed, and a promising approach in this regard is the Adelaide Self-Efficacy Scale [19]. It is encouraging that self-assessed driving skills and a promising approach in this regard is the Adelaide Self- and strategic thinking.

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including an assessment of insight/anosagnosia, judgment skills measures should be integrated with other factors in the CGA, that cognition should not be assessed, but rather that such overall health and addressing other driving-relevant conditions including an assessment of insight/anosagnosia, judgment skills measures should be integrated with other factors in the CGA, that cognition should not be assessed, but rather that such approach supported by the promising overall assessment may be more helpful than the specific tests posed by the computer and the most useful result in an overall assessment, the most useful result in an overall assessment, and the patient is graded depending on their performance. Whilst drivers with dementia tend to perform at a significantly lower level in this type of on-road test [39], a significant minority will perform at an acceptable level. The main drawback of on-road testing is the availability, and geographical spread, of the testing centres in various European centres. A current European Union research project, (AGILE www.agile.iao-fraunhofer.de/indexi.html) is seeking to provide more standard-ized protocols for on-road testing. A particular challenge for many older people is that most health services or health insurance schemes do not cover the cost of on-road assessments, and it is a cause of potential concern that some may lose their mobility through concerns over affordability of on-road testing. It is also worth noting that the driving assessment should not be considered purely as directed towards driving safety only, but may have a therapeutic element as well, by appropriate advice, equipment and rehabilitation. There is also some preliminary data that cholinesterase inhibitors may improve driving relevant cognitive function [24].

Clinical assessment up to now has tended to dwell on deficiencies on the operational level, i.e. whether an illness affects the subject’s appreciation of distracting stimuli or the reaction time to a hazardous situation. This emphasis is misguided: reaction time (a measure which is an integral part of operational tasks) is shortest in the 15–25 year age-group, the group with the highest accident rate. It is very likely that decisions at a strategic and a tactical level are much more important in causing accidents. Older drivers are known to use strategic and tactical measures widely to avoid delay, stress and risk by driving less at night and during bad weather, avoiding rush hours and unfamiliar routes, etc. [33–35].

The application of these three levels of function can be of practical help in decision-making. At a strategic level, we would look for evidence of inappropriate planning of trips or lack of selective use of cars. Poor planning, poor judgment, lack of insight and impulsivity affect both strategic and tactical levels. Impulsivity is attributed to disinhibition and/or cognitive impairment. Factors which interfere with the operational level include inadequate visual scanning of the environment, poor visual tracking, slowness in acting and confusion when more complex acts have to be carried out.

5. On-road testing

If the diagnosis is one of mild cognitive impairment [36], there is no evidence currently that driving skills are compromised [37], and an on-road test is not usually indicated in the absence of other driving-relevant illness. For those with a diagnosis of Alzheimer’s disease, there should be a low threshold for an on-road test. This is generally seen as the gold standard in the assessment of an ageing driver [38]. This test involves assessment on a predetermined test route in a dual-control vehicle. Amongst other things, road position sense, response to road signals, and awareness of other road users is assessed and the patient is graded depending on their performance. Whilst drivers with dementia tend to perform at a significantly lower level in this type of on-road test [39], a significant minority will perform at an acceptable level. The main drawback of on-road testing is the availability, and geographical spread, of the testing centres in various European centres. A current European Union research project, (AGILE www.agile.iao-fraunhofer.de/indexi.html) is seeking to provide more standard-ized protocols for on-road testing. A particular challenge for many older people is that most health services or health insurance schemes do not cover the cost of on-road assessments, and it is a cause of potential concern that some may lose their mobility through concerns over affordability of on-road testing. It is also worth noting that the driving assessment should not be considered purely as directed towards driving safety only, but may have a therapeutic element as well, by appropriate advice, equipment and rehabilitation. There is also some preliminary data that cholinesterase inhibitors may improve driving relevant cognitive function [24].

6. Approach and longitudinal testing

Clinicians must make an immediate decision on whether the patient is fit to continue driving whilst further assessment is

<table>
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<th>Table 1</th>
<th>Hierarchical scheme of driving assessment.</th>
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<td>Level of task performance</td>
<td>Level of risk</td>
</tr>
<tr>
<td>Strategic</td>
<td>Accepting risk</td>
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<tr>
<td>Tactical</td>
<td>Taking risk</td>
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<tr>
<td>Operational</td>
<td>Dealing with acute danger</td>
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arranged. All decisions and actions should be documented clearly in the patient’s notes. As for all progressive diseases, re-evaluation should occur regularly: for dementia, it is our practice to arrange. All decisions and actions should be documented clearly in the patient’s notes

7. Driving cessation

A point will come where driving cessation occurs, and in general this process occurs with varying inputs from the patient, the family and physician [45]. In my own experience, it is uncommon for this to be a very significant problem for the clinician, with much of the discomfort often falling on family members [46]. It is also probably a good idea to maintain the dialogue on eventual cessation on all visits, using the modified Ulysses contract alluded to above: this approach is also probably a reasonable group average [9], but which has not specifically been shown to be effective for dementia. This advice may not be mirrored by the formal driving licence, but should be followed as good clinical practice.

8. Conclusion

As a result of a significant amount of research in the last two decades, geriatricians have now a much clearer view of the assessment of driving and transport for those with dementia. Building on CGA, useful information can be determined by the multidisciplinary team, but the availability of on-road testing is critical to appropriate assessment of driving in those with dementia. The development of both present and future planning of driving and transport should be viewed as a collaborative process with patients and their families.

Conflicts of interest

None.

References