



# Treating dementia

*Alisa M Crouch, Advanced Trainee in Geriatric Medicine, Princess Alexandra Hospital, Brisbane*

## Summary

**With increasing numbers of elderly patients, general practitioners are uniquely placed to investigate and treat dementia. Screening tests can be used, but a thorough history and physical examination are usually needed to make the diagnosis. Other conditions such as delirium and depression should be excluded. Both pharmacological and non-pharmacological treatments are important, depending on the particular problems facing the patient and their carer. The treatment of concurrent chronic disease may need to be modified as dementia progresses.**

Key words: Alzheimer's disease, cholinesterase inhibitors, memory.

*(Aust Prescr 2009;32:9–12)*

## Introduction

The prevalence of dementia approximately doubles with every five years of age beyond the age of 65. By 2050, the estimated number of new diagnoses in Australia will reach 175 000 annually compared with 45 700 in 2001.<sup>1</sup>

General practitioners are often the first point of contact for patients or families who have concerns about memory and cognitive function. They are also in a unique position to suspect the diagnosis of dementia when a patient presents with other problems.

The variation in presentation can make diagnosis of cognitive impairment or early dementia difficult. However, early diagnosis may enable planning for the future, decrease anxiety with appropriate education and allow consideration of treatment.

A multinational survey of carers for people with Alzheimer's disease showed a delay of 12 months from first symptoms to diagnosis, including a delay of four months in making an appointment. In the Australian component of this survey, 30% of patients were diagnosed by their general practitioners. In 93% of the Australian cases, general practitioners were the first point of contact.<sup>2</sup>

## Diagnosis

The diagnosis of dementia is made on clinical assessment using formal criteria.<sup>3</sup> These include a history of the gradual onset of impairments in two or more cognitive domains, which cause difficulty in everyday function. These impairments should not be attributable to another cause, such as a drug effect or

depression. Cognitive domains which are commonly impaired include memory, language and decision-making ability.

A detailed history with a collateral history from family and friends is essential in making the diagnosis, determining a pattern of progression and assessing any impact on daily living. As this is a time-consuming process, a screening test is often used to determine whether this is necessary.

The most commonly used screening test is the Folstein Mini-Mental State Examination (MMSE). Its validity has been demonstrated in many populations, however in patients of non-English speaking background the Rowland Universal Dementia Assessment Scale (RUDAS) may be more appropriate. The Mini-cog and General Practitioner Assessment of Cognition tests also have reasonable sensitivity and specificity and may take less time to administer.<sup>4</sup>

## Differential diagnoses

It is worth deliberately excluding other conditions that may appear to cause cognitive impairment such as delirium, depression and the adverse effects of some drugs such as antipsychotics. The clinical features of these conditions are usually different from those of dementia when considered closely (see Table 1). Blood tests to help exclude illnesses mimicking dementia would include measurement of full blood count, biochemistry, thyroid stimulating hormone, vitamin B<sub>12</sub> and

Table 1

### Alternative causes of cognitive impairment

Condition	Clinical features
Delirium	Disorder of attention Fluctuation of symptoms over hours Recent onset (usually days to a few weeks)
Depression	Low mood is predominant feature May have biological features of mood disturbance May be motivated to improve performance on testing for a short time Often coexists with dementia May have history of depression
Drug effects	Common offenders are: <ul style="list-style-type: none"> <li>• anticholinergics</li> <li>• sedatives and hypnotics</li> <li>• antipsychotics</li> <li>• analgesics</li> </ul> Usually cause features of delirium, but the duration of symptoms may be very long

Table 2

**Subtypes and features of dementia**

Dementia subtype	Important features
Alzheimer's dementia	Clinical diagnosis requires memory impairment and impairment of language, executive function, motor function (dyspraxia) or agnosia
Vascular dementia	Stepwise progression, associated with physical signs of stroke or history of transient ischaemic attack
Mixed dementia	Most commonly mixed Alzheimer's disease and vascular dementia
Dementia with Lewy bodies	Progressive dementia with at least two of the three features of fluctuating cognition, visual hallucinations, and Parkinsonism Falls common Severely intolerant of the adverse effects of antipsychotic drugs Some evidence for benefit from cholinesterase inhibitors
Parkinson's disease with dementia	Ability to function can also be related to adequacy of dopa replacement and is often worse in 'off' periods May be part of a spectrum of disease with dementia with Lewy bodies
Frontotemporal dementia	Younger patients (less than 65 years of age) Family history of frontotemporal dementia often found 'Dysexecutive syndrome' with change in behaviour and personality common Delusions common Also includes progressive fluent and nonfluent aphasia types Memory relatively spared Mini-Mental State Examination unreliable Deteriorates with use of antipsychotics
Post-traumatic	History of injury with consistent imaging Not progressive Appears to increase the risk of later developing Alzheimer's type dementia
Toxic encephalopathy (e.g. alcohol)	History of toxin exposure

folate. A CT scan of the brain is useful in excluding conditions that may be amenable to treatment, such as subdural haemorrhage and normal pressure hydrocephalus. Although there may be reversible elements for many with abnormal tests, reversible causes of dementia are extremely rare (less than 1.5%).<sup>5</sup>

**Identify the type of dementia**

There is no 'cure' for most dementias. However, if the diagnosis includes information about the subtype of dementia (see Table 2) it allows a patient and their family to:

- access information that may help them deal with functional difficulties
- benefit from specific treatments (for example cholinergic therapies)
- avoid drugs known to aggravate problems (for example, anticholinergics, and antipsychotics in dementia with Lewy bodies)
- make plans for the future.

There is a good correlation between the clinical diagnosis of Alzheimer's disease and the neuropathology at autopsy. This association is less certain with other subtypes of dementia, but

even a putative diagnosis may allow a patient and carer to make sense of the patient's symptoms. An example is the severe fluent aphasia seen in a younger patient with frontotemporal dementia.

**Assessment and planning**

Assess how the patient and their carer are coping and what formal and informal supports and help are available. This assessment can be time consuming and a home visit (perhaps by associated nursing or allied health staff) may be an efficient way of getting this information. Reimbursement for gaining collateral information may be included in a comprehensive health assessment which may be reimbursed under Medicare\*. If there are areas of need identified, an Aged Care Assessment Team (ACAT) evaluation may enable access to a range of services.

People with dementia may be irritable and aggressive. They can experience delusions and hallucinations. Look for challenging behaviours as they are common and burdensome. They warrant a specific assessment and management approach.<sup>6</sup>

\* Medicare Benefits Schedule – Items 700 and 702 [www9.health.gov.au/mbs](http://www9.health.gov.au/mbs) Search for 700 and 702 [cited 2009 Jan 13]

Ask about the making of wills, enduring powers of attorney and advance health directives. If these arrangements are not in place and the patient is competent to make these decisions they should be encouraged to do so. If capacity to perform these actions has been lost, the carer may have to apply for these powers through guardianship legislation.

Give the patient information about managing their disease and consider referring them to a local patient support organisation. Education of the carer can be invaluable.

Ask if the patient is still driving. The ability to drive safely is affected by many factors including visuospatial attention, switching of attention between tasks, and judgement. These are difficult to assess in a routine medical assessment. A specialist off-road and on-road assessment may be required. There may be state-funded access to these assessments, but the waiting lists can be very long and legal requirements vary from state to state.

Incontinence, increased nocturnal activity, impaired mobility<sup>7</sup> and aggressive behaviour increase the burden on carers. These problems are also predictors of nursing home placement within one year, independent of the level of cognitive impairment.

## Referral

Sending the patient to a memory clinic or specialist (geriatrician, psychiatrist or neurologist) may be required to access some treatments or to confirm the diagnosis. Offer referral if the diagnosis is in doubt, if the patient is young, the presentation is unusual or if requested by the patient or the family.

## Non-drug therapy

Monitor the patient's general health and other chronic conditions, especially vascular risk factors, to optimise health and independence. Should there be unexpected changes in cognition or behaviour, reconsider the possibility of incident delirium or depression. Other problems that can cause aggravated behaviours or distress in patients with dementia include pain, constipation, reduced vision and hearing loss.

Psychosocial interventions for carers, such as teaching them specific problem-solving skills, are more effective if the patient is also involved. Other factors that appear to be important include structured individual counselling, involvement of the extended family and consistent professional long-term support. These interventions can help to reduce the psychological burden and can reduce the need for institutional care of the patient. However, there is little impact on the carer's overall burden.<sup>8</sup> Interventions that do not improve outcomes include single interviews and interventions not associated with long-term contact such as short educational programs and support groups alone.

There is some evidence for the cost-effectiveness of community-based occupational therapy aimed at improving the patient's

daily function.<sup>9</sup> Cochrane reviews have found no supportive evidence for the use of aromatherapy, music therapy, transcutaneous electrical nerve stimulation (TENS) or bright light therapy.

In practice, maintaining cognitive, physical and social activity appears to help in improving quality of life for the patient and reducing the burden of care. This burden is also improved by education about symptom progression, burden management and enabling appropriate access to services including respite care. Local patient support organisations can be useful resources for this. It is also important that carers maintain a relationship with their own general practitioner so that their own needs are addressed.

## Drug therapy

Dementia is a progressive disease. Drug treatment at best only slows the decline in cognitive function.

### *Cholinesterase inhibitors*

The drugs available in Australia are donepezil, galantamine and rivastigmine (also now available in a topical formulation). Patients must meet specific criteria to be eligible for subsidised treatment under the Pharmaceutical Benefits Scheme (PBS).

There is a statistical benefit of cholinesterase inhibitors in mild to moderate Alzheimer's disease, however the clinical benefit remains uncertain and all the studies are short term.<sup>10</sup> There is no evidence that one drug has a benefit over another. Many specialists switch to another cholinesterase inhibitor if there is no efficacy or tolerance of the first. If required, a trial of memantine may then be appropriate.

A study of patients taking one of several cholinesterase inhibitors (donepezil, tacrine and rivastigmine) showed improvement in cognition and function at one year and delay in nursing home placement.<sup>11</sup> However, some randomised controlled trials have shown the drugs do not delay placement.

There is also some evidence for the efficacy of cholinesterase inhibitors in vascular dementia and dementia with Lewy bodies.<sup>12,13</sup> The drugs have not been approved for these indications.

Common adverse effects include nausea, vomiting and diarrhoea. These are less troublesome with dose titration. Other adverse effects include bronchoconstriction (particularly in patients with asthma), bradycardia, cramps and vivid dreams.

### *Memantine*

Memantine is a non-competitive antagonist of the N-methyl D-aspartate (NMDA) receptor. It is available on the PBS and may be an alternative for those patients unable to tolerate cholinesterase inhibitors.

Placebo-controlled trials have shown benefit in patients with moderate to severe Alzheimer's disease. Memantine has

been used in combination with cholinesterase inhibitors in clinical trials. As with the cholinesterase inhibitor studies, the outcomes measured do not translate easily into clinical practice. Memantine requires dose titration over a month to minimise the adverse effects of agitation, hallucination and headache. It may also increase the risk of seizure activity. Memantine is excreted in the urine and is probably not suitable for use in those with renal impairment.

### **Other drugs for dementia**

Hundreds of different drugs are currently in various stages of clinical testing including vaccines and monoclonal antibodies against amyloid protein. There is no consistent evidence of efficacy or safety for drugs such as vitamin E, selegiline, vitamin B<sub>12</sub> or ginkgo biloba.

### **Disease progression**

While the patient's functional state is still intact, treatment of chronic conditions can improve symptoms and life expectancy. As dementia progresses the benefits are reduced and the need for investigations or therapy should be discussed with the carer. A previously completed advance health directive can be very valuable to guide therapy.

Timing of cessation of drug therapy for dementia is controversial, but should be considered if the patient is completely dependent in their care needs. Cessation should be discussed with the patient's family, particularly as they may notice some deterioration in the patient's functional abilities.

### **Conclusion**

Most cases of dementia are diagnosed on clinical assessment. Excluding treatable causes of cognitive impairment is vital. Management of the patient and their care needs should be individualised. Consider the needs of the carers as well as the patient themselves. Early education and planning for future events can assist both the patient and their support network.

*Thanks to Dr Shanthy Kanagarajah, consultant geriatrician, for guidance and editorial assistance. Thanks also to Dr Olivia Williams, general practitioner, and Dr Georga Cooke, trainee in general practice, for feedback on earlier versions of this article.*

### **References**

1. Access Economics Pty Ltd. Dementia estimates and projections: Australian States and Territories. 2005. [www.alzheimers.org.au/content.cfm?infopageid=1926](http://www.alzheimers.org.au/content.cfm?infopageid=1926) [cited 2009 Jan 13]
2. Wilkinson D, Stave C, Keohane D, Vincenzino O. The role of general practitioners in the diagnosis and treatment of Alzheimer's disease: a multinational survey. *J Int Med Res* 2004;32:149-59.

3. Diagnostic and statistical manual of mental disorders (DSMIV-TR). 4th ed. Text revision. Washington (DC): American Psychiatric Association; 2000.
4. Brodaty H, Low LF, Gibson L, Burns K. What is the best dementia screening instrument for general practitioners to use? *Am J Geriatr Psychiatry* 2006;14:391-400.
5. Larson EB, Kukull WA, Katzman RL. Cognitive impairment: dementia and Alzheimer's disease. *Annu Rev Public Health* 1992;13:431-49.
6. Byrne GJ. Pharmacological treatment of behavioural problems in dementia. *Aust Prescr* 2005;28:67-70.
7. Hope T, Keene J, Gedling K, Fairburn CG, Jacoby R. Predictors of institutionalization for people with dementia living at home with a carer. *Int J Geriatr Psychiatry* 1998;13:682-90.
8. Brodaty H, Green A, Koschera A. Meta-analysis of psychosocial interventions for caregivers of people with dementia. *J Am Geriatr Soc* 2003;51:657-64.
9. Graff MJ, Vernooij-Dassen MJ, Thijssen M, Dekker J, Hoefnagels WH, Rikkert MG. Community based occupational therapy for patients with dementia and their care givers: randomised controlled trial. *BMJ* 2006;333:1196. doi:10.1136.
10. Qaseem A, Snow V, Cross JT, Forciea MA, Hopkins R, Shekelle P, et al; American College of Physicians/American Academy of Family Physicians Panel on Dementia. Current pharmacologic treatment of dementia: a clinical practice guideline from the American College of Physicians and the American Academy of Family Physicians. *Ann Intern Med* 2008;148:370-8.
11. Lopez OL, Becker JT, Wisniewski S, Saxton J, Kaufer DI, DeKosky ST. Cholinesterase inhibitor treatment alters the natural history of Alzheimer's disease. *J Neurol Neurosurg Psychiatry* 2002;72:310-4.
12. Malouf R, Birks J. Donepezil for vascular cognitive impairment. *Cochrane Database of Systematic Reviews* 2004, Issue 1. Art. No.: CD004395. DOI: 10.1002/14651858.CD004395.pub2.
13. Wild R, Pettit TA, Burns A. Cholinesterase inhibitors for dementia with Lewy bodies. *Cochrane Database of Systematic Reviews* 2003, Issue 3. Art. No.: CD003672. DOI: 10.1002/14651858.CD003672.

### **Further reading**

NSW Department of Health. Care of patients with dementia in general practice: Guidelines. North Sydney: NSW Department of Health; 2003. [www.racgp.org.au/guidelines/dementia](http://www.racgp.org.au/guidelines/dementia) [cited 2009 Jan 13]

Administration guide for the Rowland Universal Dementia Assessment Scale (RUDAS). [www.immigration.govt.nz/NR/rdonlyres/8EA84EB6-390C-49FB-9FC4-BF3484B0FD97/0/RUDASAdministrationguide.pdf](http://www.immigration.govt.nz/NR/rdonlyres/8EA84EB6-390C-49FB-9FC4-BF3484B0FD97/0/RUDASAdministrationguide.pdf) [cited 2009 Jan 13]

Alzheimer's Australia: see [www.alzheimers.org.au](http://www.alzheimers.org.au)

*Conflict of interest: none declared*