



Diagnosis and management of dementia in general practice

BACKGROUND The assessment and management of dementia has changed in the past 5 years with the introduction of new drugs to combat dementia. In addition, services available for patients with dementia and the means of accessing these services is constantly changing.

OBJECTIVE This article discusses the assessment and management of dementia using two case studies. The case studies raise issues about screening and accessing the new drugs for a patient with early dementia, care planning, and the involvement of the carer for a patient with more advanced disease.

DISCUSSION As the population ages, dementia is an increasingly important part of general practice. It is important general practitioners are aware of early detection issues, and understand basic screening as well as the possibility of accessing new treatments and community management for patients with dementia.

The following case studies are presented as a discussion of two dementia cases between a general practitioner and a psychogeriatrician. The first patient, Elizabeth, is an early presentation; and the second patient, Mary, a later presentation.

GP's case 1 – Elizabeth

Elizabeth, aged 75 years, is well apart from controlled type 2 diabetes. Three years ago, while caring for a difficult elderly relative, she presented with forgetfulness. She scored a normal 27/30 on the Mini-Mental State Examination (MMSE), but 12/30 (in the depressed range) on the Geriatric Depression Scale (GDS). She responded well to counselling, 6 months of an antidepressant, and the acquisition of a pet. The relative went into a nursing home.

Several months ago, Elizabeth complained that a forgotten saucepan had burnt on the stove and that she kept losing her keys. During a 75+ health assessment the practice nurse scored her GDS normal (5/30), but her MMSE showed impairment (23/30). Otherwise the health assessment was normal, as was my neurological examination, cardiac examination and auscultation for carotid bruits, but she demonstrated labile hypertension, 145/90 falling to 135/90. I told Elizabeth that the assessment confirmed a memory problem and that there was treatment available if this proved to be Alzheimer disease (AD).

I arranged: thyroid function tests, full blood count,



Dimity Pond,

BA, MBBS, FRACGP, PhD, is Professor and Head, Discipline of General Practice, School of Medical Practice and Population Health, University of Newcastle, New South Wales.

Henry Brodaty,

AO, MBBS, FRACP, FRANZCP, MD, is Professor of Psychogeriatrics, University of New South Wales, and Director, the Academic Department of Old Age Psychiatry, Prince of Wales Hospital, Sydney, New South Wales.

folate and B12 levels (to exclude reversible causes), mid stream urine, chest X-ray (to help exclude delirium), and an electrocardiogram (in case she needed a cholinesterase inhibitor in the future, as sick sinus syndrome and heart block may contraindicate these medications) (*Table 1, 2*) – all of which were normal. Elizabeth drinks rarely, does not smoke, and is not taking any memory impairing drugs. Her regular renal and liver function tests, lipids, sugars and HbA1c were normal.

Elizabeth booked into the local memory clinic, returning with a request for calcium and phosphate levels, and a computerised tomography (CT) brain scan – which were normal. I asked that her niece, whom she trusts and who is a registered nurse, accompany her. Later, I will link her to Alzheimer’s Australia (see *Resources*) and discuss enduring power of attorney, enduring guardianship and her will (*Figure 1*).

Table 1. Common regimens for dementia

Donepezil

One step titration:
 Start with 5 mg P/C mane or nocte
 After 1 month increase to 10 mg/day P/C
 If side effects occur at any stage, reduce to half the dose and try to increase again later

Rivastigmine

Three step titration:
 Start with 1.5 mg bd P/C for 2 weeks (or 4 weeks if easier)
 Increase monthly to 3 mg bd, 4.5 mg bd, 6 mg bd
 If side effects occur at any stage, reduce to previous level. May revert to higher level after a further month, aim for at least 3 mg/bd

Galantamine

One step titration:
 Start with 8 mg prolonged release capsule (PRC) i mane (or 4 mg immediate release bd) for 1 month
 Increase after 1 month to 16 mg PRC i mane (or 8 mg immediate release bd)
 If side effects, go back one level

Side effects

More common:
 Gastrointestinal (mainly nausea, vomiting, diarrhoea)
 Muscle cramps
 Dizziness
 Insomnia
 Nightmares
 Others: see product information

Side effects are dose dependent. Few people develop side effects on the lowest doses of these compounds. Drop outs in trial for side effects are as low as 10%

Contraindications: active peptic ulcer, caution with asthma, bradyarrhythmias, heart block, healed peptic ulcer (unless on PPI as well).

The author(s) take no responsibility for the information presented
 Doctors should check prescribing manuals for complete information
 Reproduced with permission: South East Sydney Division General Practice

Table 2. Investigations for memory loss

Routine

Full blood count (FBC)
 Erythrocyte sedimentation rate (ESR)
 Liver function test (LFT)
 Calcium
 Thyroid function
 B12, folate
 CT scan of brain without contrast
If indicated (* recommended)

Chest X-ray*
 Fasting blood sugar levels (BSL)
 Lipid study*
 Fasting homocysteine level
 Electrocardiogram (ECG)*
 Mid stream urine (MSU)*
 Serology

Special investigations

Electroencephalogram (EEG)
 Magnetic resonance imaging (MRI)
 Positron emission tomography (PET)
 Apolipoprotein E (E4 status confers increased risk)
 Neuropsychological assessment

Specialist’s comment

In the first presentation, it is unclear whether Elizabeth has normal aging, mild cognitive impairment (MCI), early dementia or cognitive impairment associated with depression. Mild cognitive impairment is a diagnosis in evolution. It is still controversial and represents the phase between normality and early dementia. About 12% of MCI patients per year develop dementia, usually AD.¹ Trials of drugs to treat MCI and prevent conversion are underway but as yet are not proven. Warning signs to differentiate early dementia from normal aging include:

- short term memory loss even with effort, and
- cognitive impairments which:
 - are progressive
 - occur in other cognitive domains (eg. difficulty with word finding or understanding concepts), and
 - interfere with the activities of daily life.

Differentiation of depression from dementia can also be difficult:

- is there a past or family history of depression
- are the depressive symptoms pervasive (every day)
- are there associated vegetative symptoms (sleep, appetite, weight)
- are there depressive thoughts (feelings of failure, guilt, burden)?

Elizabeth appears to have clear evidence of depression

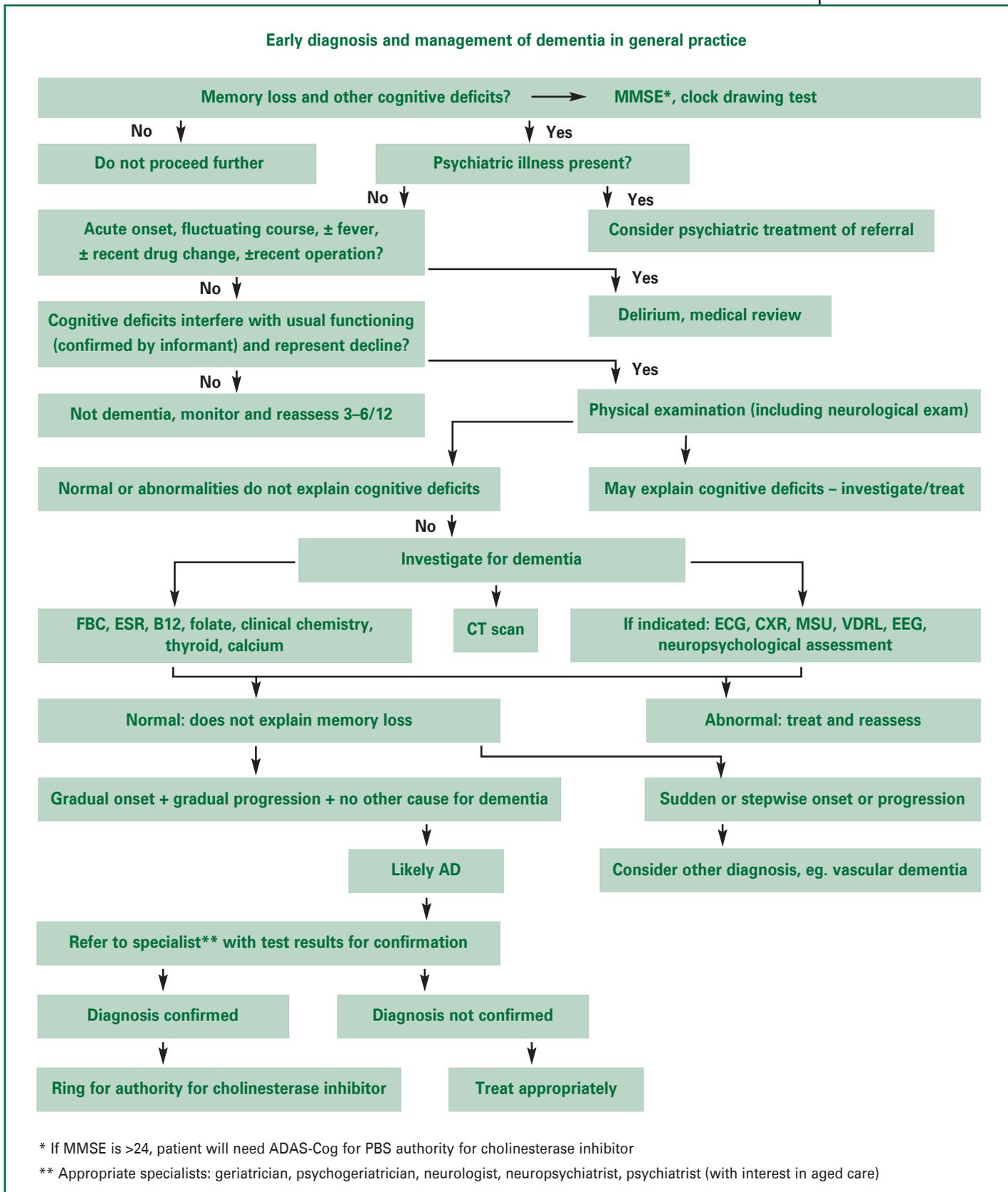


Figure 1. Early diagnosis and management of dementia in general practice
 Reproduced with permission: South East Sydney Division of General Practice

and it is more conservative and treatable to proceed with this provisional diagnosis. If this is the first episode of depression, my practice is to check for B12 deficiency, thyroid abnormalities and calcium excess, as these can cause depression as well as dementia. However, she has reason to be depressed, and the plan of management outlined is very appropriate.

At the subsequent consultation it is apparent that Elizabeth's memory loss is worsening and early dementia is likely. The most common cause is AD, although given the risk factors of diabetes and labile hypertension, vascular dementia (VaD) is also possible. In 20% of dementias, the two conditions coexist. Reversible causes of dementia are rarely found but must always be looked for. Current Pharmaceutical Benefits Scheme (PBS) rules for cholinesterase inhibitor prescription require confirmation of diagnosis by a specialist physician or psychiatrist (Table 3). For a typical presentation, memory clinic referral may not be necessary, and consultation with a geriatrician, psychogeriatrician or neurologist can confirm the diagnosis. There is slim evidence for any benefit of vitamins E and C,^{2,3} and if fasting homocysteine levels are high, for folic acid 0.5 mg per day preferably with vitamin B12 added.⁴ I use 500 mg each of vitamin E and C, although the only treatment trial in AD used a dose of 2000 IU/day (1 IU=1 mg of vitamin E approximately). Many patients wish to try alternative remedies. There is very weak evidence for ginkgo biloba,⁵ but I don't rou-

tinely prescribe it unless on patient request. Vitamin E can interfere with warfarin metabolism and ginkgo biloba can increase the risk of bleeding.

There were no findings to suggest any other cause of dementia. The insidious onset and gradual progression pointed to a diagnosis of AD. The CT scan does not provide a definitive diagnosis: it may be normal or show age related changes. It is useful for excluding other causes of dementia such as tumour or normal pressure hydrocephalus. My practice is to request a CT scan without contrast unless I suspect a tumour or a vascular lesion.

I would bring in a trusted relative and discuss the sensitive issues of finances, a will and driving. Unless the patient is clearly unsafe on the road, my practice is to prepare the patient to relinquish driving gradually; eg. restricting driving to familiar routes in the day time. It is useful to remind patients to attend appointments and to set up systems to ensure compliance with medications, eg. blister packs. Finally, I would also recommend that when they contact Alzheimer's Australia they inquire about the 'Living with memory loss' program which is a 7 week course for the person with early dementia and the principal supporter (see Resources).

GP's case 2 – Mary

Mary, aged 85 years, lives with her daughter Robyn. She suffers from hypertension, chronic renal failure and osteoarthritis, but has managed well in a small flat until recently. She has had two small strokes over the past 4 years and became significantly more dependent on Robyn after the second. The aged care assessment team (ACAT) diagnosed moderate dementia, recommended that Mary visit the community centre once a week to give her daughter some respite, and reviewed the flat – removing loose rugs and installing shower rails. Her history of step wise decline and vascular risk factors indicate a vascular aetiology for her dementia precluding her from PBS listed antidementia drugs.

At this visit, they are concerned about Mary's worsening osteoarthritis as she requires more help with showering and dressing. Robyn also worries that Mary is more forgetful and has occasional urinary incontinence. I note the toll this is taking on Robyn's own health and mental wellbeing, and commence a care plan for Mary. After discussion we agree to home care assistance and extra respite care. They agree to a visit from the local incontinence sister.

I initiate a domiciliary medication management review (DMMR), establish a blister pack program and

Table 3. Australian PBS criteria for acetyl cholinesterase inhibitor prescription for AD

For commencing treatment and first 6 months

- Diagnosis of AD
- Confirmed by a specialist
- MMSE score recorded; if this is over 24 then patient will require Alzheimer Disease Assessment Scale testing, cognitive subscale (ADAS-cog) – this usually requires referral
- Not eligible if MMSE score is <10

For continuing treatment beyond 6 months

- Improvement on MMSE of at least 2 points OR
- if initial MMSE was >24, then improvement on ADAS-cog of at least 4 points (lower score is better on ADAS-cog)

Special cases requiring specialist letter

- Limited education (<6 years) or illiterate
- Development disability
- Cultural and linguistic diverse background rendering MMSE invalid
- Aboriginal or Torres Strait Islander unable to complete MMSE
- Severe aphasia out of proportion to cognitive deficit
- Significant sensory impairment precluding an MMSE

discuss with Robyn how to monitor Mary's pill taking. Our practice nurse makes the DMMR, home care and incontinence appointments, and talks to the community centre about respite. I write referrals for each of these providers, and ask for a written summary of each plan of action to be incorporated in the care plan with the help of the practice nurse.

Mary and Robyn are happier at their next visit. Home care comes in three times a week for showering and a volunteer comes once a fortnight and spends an afternoon with Mary – allowing Robyn and her husband some time to themselves. I implement recommendations from the DMMR. The incontinence sister has organised incontinence aids. With Mary and Robyn, I review the revised care plan and sign off on it.

Specialist's comment

In many ways, Australia leads the world in the provision of community based services and this case exemplifies beautifully a system that is working well. By linking Robyn and Mary to home based services, Mary can remain relatively independent in her own home. I would also link Robyn to Alzheimer's Australia (see *Resources*), which offers counselling and training programs for carers of people with any type of dementia. Enduring power of attorney and enduring guardianship should be canvassed. Robyn is stressed, and this often has knock-on effects on her own family as her husband and children feel neglected and start to resent Robyn's focus on her mother. It might be useful to bring in the family to see how they can all pull together to help.

The question of cholinesterase inhibitors is controversial. The PBS only allows these medications for people with mild to moderate AD. However, there are double blind placebo controlled trials of donepezil[®] and galantamine⁷ demonstrating benefit for people with vascular dementia especially when there is a mixed AD/VaD aetiology. Often both pathologies are visible at autopsy of patients with dementia in old age.

Conclusion

Assessment and management of dementia is an important aspect of aged care. Assessment involves the often difficult distinction between normal aging, mild cognitive impairment, early dementia and the cognitive impairment associated with depression, delirium or drugs. Use of dementia screening instruments, depression screening instruments, and tests for reversible causes of cognitive impairment and delirium

are important steps in the diagnostic process. For patients with established dementia the GP has a pivotal role in community care and carer support.

Summary of important points

- GPs should ensure they consider the four 'Ds' when considering differential diagnosis in a patient with memory loss: dementia, delirium, drugs and depression.
- An evidence based assessment of dementia should include the use of a dementia screening instrument, a depression screening instrument, and a series of tests for reversible causes of cognitive impairment and delirium.
- The GP should work with the carer. They can provide important information and may also be in need of monitoring for fatigue, stress and depression.

Resources

Care of dementia guidelines available at:
www.racgp.org.au/dementia or www.health.nsw.gov.au.
 Alzheimer's Australia
 Phone 1800 639 331 or www.alzheimers.org.au.
 Alzheimer's Disease International: www.alz.co.uk.
 Alzheimer research updates: www.alzforum.org.
 International Psychogeriatric Association:
www.ipa-online.org.
 Conflict of interest: Professor Brodaty has been a consultant and sponsored speaker for Pfizer, Janssen-Cilag and Novartis.

References

1. De Carli C. Mild cognitive impairment: prevalence, prognosis, aetiology and treatment. *Lancet Neurology* 2003;2:15–21.
2. Berman K, Brodaty H. Vitamin E in Alzheimer's disease and other neurodegenerative disorders. *CNS Drugs* 2004; in press.
3. Tabet N, Birks J, Grimley Evans J. Vitamin E for Alzheimer's disease. *Cochrane Database of Systematic Reviews* 2000;4:CD002854.
4. Religa D, Winblad B. Therapeutic strategies for Alzheimer's disease based on new molecular mechanisms. *Acta Neurobiologiae Experimentalis* 2003;63:393–396.
5. Le Bars PL, Kieser M, Itil KZ. A 26 week analysis of a double blind, placebo controlled trial of the ginkgo biloba extract EGb 761 in dementia. *Dement Geriatr Cogn Disord* 2000;11:230–237.
6. Malouf R, Birks J. Donepezil for vascular cognitive impairment. *Cochrane Database of Systematic Reviews* 2004;1:CD004395.
7. Erkinjuntti T, Kurz A, Gauthier S, Bullock R, Lilienfeld S, Damaraju CV. Efficacy of galantamine in probable vascular dementia and Alzheimer's disease combined with cerebrovascular disease: a randomised trial. *Lancet* 2002;359:1283–1290.

Email: dimity.pond@newcastle.edu.au

AFP