

In this article...

- How different kinds of medicines are used in dementia care
- Why nurses are well placed to support safe and effective medications management
- How to assist family carers with medicines administration as the condition progresses

Dementia 3: the use and management of medicines in dementia care

Key points

Nurses need up-to-date knowledge of the main types of psychotropic medicines used in dementia care

These include anti-dementia drugs, antidepressants, anxiolytics, hypnotics and antipsychotics

Nurses need to be familiar with strategies to support compliance with medications

Family carers also have a significant part to play in safe medication management and often need support with this

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Abstract Modern dementia care embraces biological, psychological and social domains, and the disease is commonly referred to as a biopsychosocial condition. Biologically, dementia is caused by different diseases, each of which results in damage to nerve cells and transmitter pathways. This third article in a series on dementia considers the medical aspects of a biopsychosocial approach to the care of a person with dementia and discusses common treatments used for cognitive symptoms, non-cognitive symptoms and other medical conditions that occur alongside dementia. It also examines the effect of polypharmacy on people with dementia, as well as some of the challenges involved in medicines administration in this patient group, such as covert administration of medicines and non-adherence.

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Dementia is widely accepted as being a condition that spans biological, psychological and social domains, and is commonly referred to as a biopsychosocial condition (Kitwood, 1997). The approach advocated by Kitwood (1997) focused on findings from social psychology that family and other people, the environment and culture can have a profound effect on the person with dementia. When basing dementia care on such an approach, issues like behaviour are seen as attempts to communicate a need, and mean care staff have to understand a person's underlying need as the basis for any treatment or intervention. This article considers the medical aspects of care and treatment of a person with dementia; psychosocial interventions will be discussed in subsequent articles in this series.

From a biological standpoint (medical model), dementia is caused by different diseases that each result in damage to the

nerve cells and transmitter pathways. In the past, the medical model of dementia prevailed, with decline considered inevitable and the changes in a person's behaviour and presentation as unconscious, neurological events (Sandilyan and Denning, 2019). There are three areas of importance when considering the medical management of dementia – namely, the treatment of:

- Cognitive symptoms;
- Non-cognitive symptoms;
- Other medical conditions that occur alongside dementia.

Treatment of cognitive symptoms

Finding treatments for dementia over recent decades has largely concentrated on Alzheimer's disease (AD) (Jones, 2021). AD is responsible for approximately 75% of all cases of dementia, either on its own or mixed with another dementia (Sandilyan and Denning, 2019). The disease features the abnormal deposition of insoluble 'plaques'

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of a fibrous protein called amyloid and twisted fibres called neurofibrillary tangles in the brain (Taylor and Underwood, 2021); these build up and interfere with the normal functioning of brain cells. There is also a deficiency of the neurotransmitter acetylcholine, which is important for learning and memory (Attems and Jellinger, 2021), and symptoms worsen over time.

Current practice in the treatment of AD is guided by the National Institute for Health and Care Excellence's (2018) recommendations. The medications used most often are the three acetylcholinesterase inhibitors (AChEIs) that are licensed for use in mild-to-moderate AD:

- Donepezil (Aricept) – this may be beneficial for people with mild, moderate and severe AD, and is associated with improvement in both cognitive function and activities of daily living (Birks and Harvey, 2018). The dosage can be increased if it is well tolerated. Donepezil is also available in an orodispersible form, which is useful for people with dementia who develop swallowing difficulties as their illness progresses;
- Rivastigmine (Exelon) – this may be beneficial in mild-to-moderately severe AD. As with donepezil, if it is well tolerated, the dosage can be increased, although side-effects of nausea and vomiting can be more frequent (Jones, 2021). Transdermal patches are available; these can help with compliance and are better tolerated than the oral preparation. Rivastigmine is also licensed for mild-to-moderate stages of dementia with Lewy bodies and for Parkinson's disease dementia (Birks et al, 2015);
- Galantamine (Reminyl) – this may be beneficial in mild to moderately severe AD. An extended-release preparation is available, which enables a regimen of a single daily dose, which helps with compliance.

Treatment can switch from one AChEI to another, largely where there is an intolerance to one (Jones, 2021). While the advent of AChEIs in the late 1990s was well received by families affected by dementia – who often place a great hope on the effectiveness of these medications – it was found that they were either not well tolerated (Table 1 lists common side-effects) or they were not suitable for a significant number of people (Sandilyan and Denning, 2019) – evidence for their efficacy in slowing cognitive deterioration was mixed (Attems and Jellinger, 2021).

Table 1. Common side-effects of AChEIs and memantine

Medication	Common side-effects
Donepezil ^a	<ul style="list-style-type: none"> • Nausea • Vomiting • Diarrhoea • Loss of appetite • Weight loss • Frequent urination • Difficulty controlling urination • Muscle cramps
Rivastigmine ^a	<ul style="list-style-type: none"> • Nausea • Vomiting • Diarrhoea • Stomach pain • Loss of appetite • Weight loss
Galantamine ^a	<ul style="list-style-type: none"> • Nausea • Vomiting • Diarrhoea • Dizziness • Headache • Decreased appetite • Weight loss
Memantine	<ul style="list-style-type: none"> • Constipation • Headache • Hypertension

^aAChEI. AChEI = acetylcholinesterase inhibitor.
Source: Electronic Medicines Compendium

“Families affected by dementia often place a great hope on the effectiveness of acetylcholinesterase inhibitors”

A fourth medication, memantine, has a different mode of action; being an N-methyl-D-aspartate receptor antagonist, it helps to protect against excess action of the excitatory transmitter, glutamate. Memantine is used for moderately severe to severe AD, either alone or in combination with an AChEI; its side-effect profile differs from that of AChEIs (Table 1).

Using AChEIs in clinical practice

Nurses need to be familiar with the possible side-effects of AChEIs, as they are well placed to:

- Observe for these;
- Monitor the efficacy of the medication.

The most common side-effects are usually due to cholinergic effects on the gastrointestinal system. However, although rare, there are more serious side-effects of which health professionals should be aware, such as heart attack (Sandilyan and Denning, 2019).

All AChEIs have an alerting, attentional effect, which can give rise to sleep disturbance, nightmares or even hallucinations (Cooke et al, 2006). There is often a balance to be struck to try to optimise tolerance – as an example, giving an individual the medication in the morning, rather than in the evening, can mitigate against sleep disturbance. However, conversely, night-time administration may mitigate against other unwanted side-effects, such as dizziness.

AChEIs can slow the heart rate, so memory assessment clinics may routinely obtain electrocardiograms before prescribing AChEIs. It is important to avoid prescribing these medications if a person's pulse is <50 beats per minute, as they may experience hypotension and syncope (Jones, 2021).

In the early days of the use of these drugs, it was proposed that they delayed the rate of cognitive decline and transition into institutional care, and increased survival rates, but there is little evidence to substantiate this. What is found useful is that their alerting, attentional effect causes the person with dementia to be more focused and spontaneous (Sandilyan and Denning, 2019).

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Alzheimer's disease

There is current interest in anti-amyloid immunotherapies and two monoclonal antibodies – aducanumab and lecanemab – have been approved by the US Food and Drug Administration for use in the treatment of AD, but not yet in the UK. Of these two agents, only lecanemab has been shown to have any statistically significant effects on cognition (van Dyck et al, 2023). However, these effects fall short of being clinically relevant and, at any rate, monoclonal antibodies require regular supervised infusions and have some potentially serious side-effects, so it is hard to see them becoming part of routine treatment in the near future (Mead and Fox, 2023).

Rivastigmine is licensed in the UK for mild-to-moderately severe dementia in people with Parkinson's disease and AChEIs are often used to treat dementia with Lewy bodies, though this is not a licensed treatment (Birks et al, 2015). Several other treatments have been proposed, such as immunotherapies and monoclonal antibodies, but most lack good evidence for their claims (Sandilyan and Dening, 2019).

Treatment of non-cognitive problems

Dementia may also give rise to a range of symptoms affecting a person's psychological state, behaviour and biological functions; these symptoms are often referred to as the behavioural and psychological symptoms of dementia (BPSD) (Bishara, 2021). BPSD may be subdivided into:

- Mood symptoms;
- Psychosis;
- Behaviour changes;
- Biological symptoms (which include sleep and appetite) (Spector and Orrell, 2010).

In discussing the treatment of BPSD, it is important to emphasise that non-pharmacological approaches should be considered first, such as:

- Trying to understand the cause of the problem;
- Allowing the person to explore their feelings;
- Offering suitable support;
- Enhancing their social contact and activities, wherever possible.

Psychotherapeutic approaches, based on improving communication and encouraging people to talk safely about their experiences with dementia, are very important (Cheston, 2022). Psychosocial approaches to supporting and caring for people with dementia and their families will be discussed in later articles in this series.



Symptoms of dementia may be treated with a range of medications

Mood and psychological problems

Depression and anxiety are the most common mood symptoms in people with dementia, and may occur in half or more of those who have been diagnosed with the disease and cause a lot of distress for both the person with dementia and their families (Bennett and Thomas, 2014). Depression may be an early sign of dementia and can precede obvious cognitive changes; however, it may also arise as a consequence of receiving a diagnosis or because of negative thoughts about the future (Bennett and Thomas, 2014).

Antidepressant treatment is usually considered if the depression is:

- Of at least moderate severity and is persistent, with perhaps feelings of hopelessness about the future;
- Limiting the person's day-to-day functioning.

The most commonly used drugs are serotonin reuptake inhibitors, such as sertraline. However, it appears that antidepressants may be less effective in depression associated with dementia than for depression occurring without dementia (Dudas et al, 2018), and people with dementia tend to experience more side-effects. Also, depressive symptoms often resolve spontaneously without treatment (Banerjee et al, 2011). However, antidepressants may also be useful in treating emotionalism – also known as emotional lability; this is when a person experiences strong/exaggerated emotions and may, for example, be moved to weeping for little or no reason at all. This state is relatively common in – but not limited to – vascular dementia.

Anxiety is often associated with depression and may improve with the resolution of depressive symptoms. Medical treatments for anxiety are far from satisfactory (Kwak et al, 2017). They include:

- Benzodiazepines (for example, diazepam), which may be effective for short-term use;
- Antipsychotic drugs, which can cause unacceptable side-effects (for example, dizziness);
- Antidepressants, which may be helpful if the person is also moderately to severely depressed.

Psychosis

The term psychosis refers to:

- Delusions;
- Hallucinations;
- Misidentifications.

Visual hallucinations are characteristic of dementia with Lewy bodies, but psychotic symptoms may occur in any form of dementia (Aarsland, 2020). They result from impaired processing and recall of sensory and other information. For example, if a person has moved an item to what appears to be a safe place and forget that they have done so, they may develop a fixed belief that the item has been stolen and/or there have been intruders in the house. Alternatively, images on television, or reflections from mirrors or windows, can be misinterpreted as being unwanted people in the room.

Sometimes hallucinations may simply be associated with sensory impairment (hearing, vision) without there being any significant cognitive impairment. This is known as Charles Bonnet syndrome, and is

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named after the 18th-century Swiss philosopher who described his grandfather's experiences. It is important because the condition is not dementia and it does not require drug treatment (NHS, 2022).

In general, hallucinations do not respond well to antipsychotic treatment, and delusions and misinterpretations only require medical treatment if they are causing a lot of distress or there are associated risks – for example, of violence if a person sees their spouse or children as imposters (Bishara, 2021).

Risperidone and olanzapine are probably the most commonly used antipsychotic drugs globally (Bishara, 2021). However, there has been much concern about the prescribing of antipsychotic drugs as they have many side-effects, such as sedation and falls, as well as increasing the risk of stroke or death (Bishara, 2021). In relation to these drugs, it is, therefore, important to:

- Be cautious when prescribing;
- Use the lowest possible dosage;
- Look to discontinue treatment after a few weeks, if possible (Bishara, 2021).

Behaviour changes

Changes in a person's behaviour commonly occur, probably more so with increasing severity of dementia (Cloak and Al Khalili, 2022). They may include:

- Agitation;
- Apathy;
- Verbal and/or physical aggression;
- Walking about;
- Vocal behaviour, such as shouting;
- Sexual disinhibition.

Agitation is a combination of excessive – often undirected – motor activity and subjective distress, and can be associated with aggressive behaviour. The most important aspect of managing agitation is to try to establish whether there is any underlying cause, for example depression, pain or other medical condition (Harrison Denning, 2020). Drug treatments for agitation are problematic (Carrarini et al, 2021). Antipsychotic drugs have modest effectiveness and, as mentioned, side-effects limit their usefulness.

Apathy is common in dementia and persists throughout its course. Apathy is partly cognitive, partly emotional and partly motivational in nature, and its presence is associated with worse outcomes for people with dementia (Denning et al, 2022). Apathy is also immensely frustrating and distressing for carers, as they may think the person with dementia is being wilfully inactive. As with most other symptoms of dementia, the most useful approaches are

psychosocial interventions, especially encouraging a person to be as active as possible, so medical treatments have a limited place (Ruthirakuhan et al, 2018).

Biological symptoms

Changes in eating and appetite are most usefully managed by supportive interventions, including the input of dietitians and speech and language therapists, who can provide swallowing assessments (Abdelhamid et al, 2016).

Patterns of sleep change become more marked in people with dementia, with daytime sleepiness and less sleeping at night. The management of sleep problems may involve simple measures, such as increasing the person's daytime activities, reducing daytime naps and avoiding their having caffeinated drinks late in the day (Zhao et al, 2018). Over-the-counter herbal remedies can be tried. Hypnotic drugs, such as zopiclone, are effective for short periods, but tolerance may develop and the drugs may have side-effects, such as over-sedation and falls; however, zopiclone is often a medication that can be inappropriately prescribed (O'Mahony et al, 2015).

Managing medical illness in dementia

It is important to be aware that most people with dementia are aged >75 years and many of them will have other illnesses or long-term conditions. Sometimes, as with arthritis, this is merely coincidental but, with other disorders, there may be a close relationship to the cause of the dementia – for example, ischaemic heart disease is likely to be found alongside vascular dementia (Snowden et al, 2017).

Physical health problems and dementia can interact in various ways. For example, pain can lead to depression, leading to lower wellbeing and quality of life (Harrison Denning, 2020); this can contribute to developing delirium in an acute illness, which, in turn, leads to increased morbidity and mortality (Koskas et al, 2021). Lastly, the more conditions a person has, the more medication they are likely to be prescribed, which increases the risk of side-effects and

“Antidepressant treatment is usually considered if the depression is of at least moderate severity and is persistent, or if it is limiting the person's day-to-day functioning”

drug interactions, alongside the possibility of their taking the wrong dose or forgetting to take any medication altogether (O'Mahony et al, 2015; Duerden et al, 2013).

The principles of managing multimorbidity and medications in people with dementia include:

- Having a clear care plan that is available to those involved;
- Keeping matters as simple as possible (Welsh, 2019).

Dementia, multimorbidity and their associated medications will be further explored in a later article in this series. However, nurses are in a prime position to support safe, effective care in medications management for people with dementia and their family carers.

Medication management: the nurse's role

The nurse's role in medication management for people with dementia can be varied. It ranges from supporting the person with dementia to take their medications safely (for example, perhaps using assistive technology to support taking the prescribed dose at the right time), through to observing for the efficacy of a medication or for any negative side-effects.

A good working knowledge of medications, their indications and actions will enable nurses to discuss medicines with the person who has dementia, as well as with their family members and carer, confidently (Lim and Sharmeen, 2018).

Polypharmacy

Polypharmacy (the use of five or more different medications) and potentially inappropriate medication use are widespread in the older population, and more so in people with dementia (Varghese, 2022). Polypharmacy can be either appropriate or problematic:

- Appropriate polypharmacy – prescription of multiple medicines from which the patient derives benefit, that is, the therapeutic effects help them maintain an optimal quality of life;
- Problematic polypharmacy – multiple medicines are inappropriately prescribed (perhaps with no consideration to the effect each has on the other) and a person does not derive adequate therapeutic benefit (Duerden et al, 2013).

Nurses are ideally placed to undertake regular assessments – enhanced by a medication tool such as the Screening Tool of Older Persons' Prescriptions (O'Mahony et al, 2015), as well as involvement of the person with the diagnosis, carers and

family members, and the wider multidisciplinary team – to ensure comprehensive medication management.

Compliance and deception

Whether it is ever ethically defensible to administer medications covertly to people with dementia is a complex and contentious issue. Medicines administered in this way may be hidden in food, drinks or given through a feeding tube without the knowledge or consent of the person who is receiving them.

When a person has mental capacity to make the decision about whether to take a medicine, they have the right to refuse it. Medication compliance in people with dementia requires a good working relationship between the person with the diagnosis, the family carer, prescriber and often a nurse who may be assigned to monitor the efficacy of any medication. The relationship involves an open approach and an honest discussion about medications, such as the administration schedule, the intended benefits and any possible side-effects (Yap et al, 2016).

In some people with dementia, symptoms such as reduced capacity for comprehension may mean they fail to take their medicines. In cases when it is determined that a person does not have capacity to make the treatment decision, but it is in their best interests to take the medicine, health professionals may decide to administer it in a disguised form, such as crushed in food, to support compliance (Yap et al, 2016). However, such approaches require discussion and agreement across all stakeholders, especially the family carers of the person with dementia.

Supporting family carers

Supporting a family member of a person who has dementia with safe medication management can be challenging for both the person with the diagnosis and the family carer. The carer may feel challenged by a change in their role as dementia progresses, especially in relation to responsibility for the safe administration of medicines; equally, they may be uncertain about when and how to take over medication management. It may be borne out of a need to maintain safety when the person with dementia forgets to take medicines or takes more than the prescribed amount. At the same time, a family carer may be uncertain about how to maintain the independence/protect the autonomy of the person with dementia for as long as possible, while also preserving their dignity.

All of these issues can be difficult for family members and have the potential to cause conflict, as trying to support compliance can cause carer distress if such management feels onerous (While et al, 2013), and often health professionals can be unaware of this burden. Nurses can support family carers in medication management by offering information on medications and their actions and mechanisms on how to improve compliance.

Conclusion

Medical treatments form an important part of a biopsychosocial response to caring for people with dementia. Health and social care staff must have good knowledge about the various medications that may be prescribed and their beneficial effects, be able to administer them safely and look out for any potential adverse effects, and provide information and guidance to achieve compliance.

Family carers also have a significant role to play in safe medication management for their relative with dementia. As such carers can often feel a great sense of burden and anxiety when managing their relative's medication, they need knowledgeable and timely support. Nurses are in an ideal position to be able to provide this. **NT**

● The fourth article in this series will discuss using a person-centred approach to support the management of risks associated with dementia.

References

- Aarsland D (2020) Epidemiology and pathophysiology of dementia-related psychosis. *Journal of Clinical Psychiatry*; 81: 5, AD19038BRIC.
- Abdelhamid A et al (2016) Effectiveness of interventions to directly support food and drink intake in people with dementia: systematic review and meta-analysis. *BMC Geriatrics*; 16: 26.
- Attens J, Jellinger KA (2021) Neuropathology. In: Denning T et al (eds) *Oxford Textbook of Old Age Psychiatry*. Oxford University Press.
- Banerjee S et al (2011) Sertraline or mirtazapine for depression in dementia (HTA-SADD): a randomised, multicentre, double-blind, placebo-controlled trial. *The Lancet*; 378: 9789, 403-411.
- Bennett S, Thomas AJ (2014) Depression and dementia: cause, consequence or coincidence? *Maturitas*; 79: 2, 184-190.
- Birks JS et al (2015) Rivastigmine for Alzheimer's disease. *Cochrane Database of Systematic Reviews*; 9: CD001191.
- Birks JS, Harvey RJ (2018) Donepezil for dementia due to Alzheimer's disease. *Cochrane Database of Systematic Reviews*; 6: 6, CD001190.
- Bishara D (2021) Psychopharmacology. In: Denning T et al (eds) *Oxford Textbook of Old Age Psychiatry*. Oxford University Press.
- Carrarini C et al (2021) Agitation and dementia: prevention and treatment strategies in acute and chronic conditions. *Frontiers of Neurology*; 12: 644317.
- Cheston R (2022) *Dementia and Psychotherapy Revisited*. McGraw Hill.
- Cloak N, Al Khalili Y (2022) *Behavioral and Psychological Symptoms in Dementia*. StatPearls Publishing.
- Cooke JR et al (2006) Acetylcholinesterase inhibitors and sleep architecture in patients with Alzheimer's disease. *Drugs & Aging*; 23: 6, 503-511.
- Denning T et al (2022) The struggle of apathy in dementia. *Aging & Mental Health*; 26: 10, 1909-1911.
- Dudas R et al (2018) Antidepressants for treating depression in dementia. *Cochrane Database of Systematic Reviews*; 8: CD003944.
- Duerden M et al (2013) *Polypharmacy and Medicines Optimisation: Making it Safe and Sound*. The King's Fund.
- Harrison Denning K (2020) Recognising pain in dementia: what has changed? *Nursing and Residential Care*; 22: 6.
- Jones RW (2021) Pharmacological treatment of dementia. In: Denning T et al (eds) *Oxford Textbook of Old Age Psychiatry*. Oxford University Press.
- Kitwood T (1997) *Dementia Reconsidered: The Person Comes First*. Open University Press.
- Koskas P et al (2021) Factors influencing length of hospital stay in an acute psychogeriatric unit. *Psychogeriatrics*; 21: 4, 478-482.
- Kwak YT et al (2017) Anxiety in dementia. *Dementia and Neurocognitive Disorders*; 16: 2, 33-39.
- Lim RH, Sharmeen T (2018) Medicines management issues in dementia and coping strategies used by people living with dementia and family carers: a systematic review. *International Journal of Geriatric Psychiatry*; 33: 12, 1562-1581.
- Mead S, Fox NC (2023) Lecanemab slows Alzheimer's disease: hope and challenges. *The Lancet Neurology*; 22: 2, 106-108.
- National Institute for Health and Care Excellence (2018) *Donepezil, Galantamine, Rivastigmine and Memantine for the Treatment of Alzheimer's Disease*. NICE.
- NHS (2022) Charles Bonnet syndrome. *nhs.uk* (accessed 24 February 2023).
- O'Mahony D et al (2015) STOPP/START criteria for potentially inappropriate prescribing in older people: version 2. *Age and Ageing*; 44: 2, 213-218.
- Ruthirakuhan MT et al (2018) Pharmacological interventions for apathy in Alzheimer's disease. *Cochrane Database of Systematic Reviews*; 5: CD012197.
- Sandilyan MB, Denning T (2019) Medical treatment and management of patients with dementia. In: Harrison Denning K (ed) *Evidence Based Practice in Dementia for Nurses and Nursing Students*. Jessica Kingsley.
- Snowden MB et al (2017) Dementia and co-occurring chronic conditions: a systematic literature review to identify what is known and where are the gaps in the evidence? *International Journal of Geriatric Psychiatry*; 32: 4, 357-371.
- Spector A, Orrell M (2010) Using a biopsychosocial model of dementia as a tool to guide clinical practice. *International Psychogeriatrics*; 22: 6, 957-965.
- Taylor J-P, Underwood BR (2021) Alzheimer's disease. In: Denning T et al (eds) *Oxford Textbook of Old Age Psychiatry*. Oxford University Press.
- Van Dyck CH et al (2023) Lecanemab in early Alzheimer's disease. *The New England Journal of Medicine*; 388: 1, 9-21.
- Varghese D (2022) *Polypharmacy*. StatPearls Publishing.
- Welsh T-J (2019) Multimorbidity in people living with dementia. *Case Reports in Women's Health*; 23: e00125.
- While C et al (2013) Medication management: the perspectives of people with dementia and family carers. *Dementia*; 12: 6, 734-750.
- Yap AF et al (2016) Systematic review of the barriers affecting medication adherence in older adults. *Geriatrics and Gerontology International*; 16: 10, 1093-1101.
- Zhao C et al (2018) Dietary patterns, physical activity, sleep, and risk for dementia and cognitive decline. *Current Nutrition Reports*; 7: 4, 335-345.