



Wandering in people with dementia: effectively integrating medicines into management

BY DR ANDREW STAFFORD

An 84-year-old female resident of a residential care facility (RCF) was referred for a residential medication management review (RMMR). The RMMR was requested as the resident had been wandering much more frequently than usual, and staff were finding managing her behaviour to be increasingly challenging.

The resident's medical history was significant for the following:

- anaemia
- dementia
- depression
- gastric ulcer (15 years ago)
- lacunar stroke (three years ago)
- lung cancer (right partial pneumonectomy eight years ago).

Her medications were as follows:

- aspirin 100 mg in the morning
- calcium carbonate/colecalciferol 1500 mg/12.5 mcg at night
- docusate and senna 50/8 mg two at night
- dothiepin 75 mg at night (increased from 25 mg six months ago)

- esomeprazole 20 mg at night
- Centrum multivitamin in the morning
- olanzapine 2.5 mg at night (changed from risperidone three weeks ago)
- paracetamol SR 665 mg two when required for shoulder pain (less than once per fortnight)
- salbutamol 100 mcg inhaler used when required (used daily after showering).

The RCF staff reported that her wandering commenced a few months ago, and at the time of the RMMR she was spending most of the day walking seemingly without purpose throughout the RCF. She was frequently going into the rooms of other residents and, three weeks prior to the RMMR, caused a

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LEARNING OBJECTIVES

After reading this article, pharmacists should be able to:

- Recognise the incidence and risks of wandering in elderly patients with dementia
- Identify potential medicine- and non-medicine-related causes of wandering in patients with dementia
- Discuss the potential for optimisation of medicine management which could reduce the incidence of wandering and associated risks.

Competency standards (2010) addressed: 2.2, 2.3, 6.1, 6.2, 7.1.

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great disturbance by entering a room where another resident was dying in the presence of their family. At this time, she was taking risperidone for the wandering, but that was changed to olanzapine because of a lack of response to risperidone. Staff commented that the olanzapine did not seem to be any more effective than the risperidone.

The only other change to her medication regimen in the 12 months before the RMMR was an increase in the dose of dothiepin (from 25 mg daily) around six months prior, following a Cornell score of 15 at her annual assessment. Her score for the Mini Mental State Examination (MMSE) at this time was 16/30.*

She had been assessed for many common precipitants for her changed behaviour, with infection, pain and constipation all being excluded. Changes to her environment did not greatly improve her behaviour, and staff believed that she did not appear to be wandering from boredom. Results of blood tests performed a fortnight before the RMMR are shown in Table 1. At this time, her blood pressure was 108/55 mmHg, pulse 73 bpm, and she weighed 53 kg.

Assessment

Although a number of issues were identified in this RMMR, this paper will only discuss the management of the resident's wandering as this was the reason for the RMMR referral. Wandering is a frequently occurring behavioural disorder in people with dementia, and is reported to affect 17–63% of people with dementia at some time.³ The term describes a constellation of behaviours that are generally accepted to involve locomotion without an apparent purpose. Wandering is often described in terms of other behavioural symptoms associated with dementia, such as non-aggressive agitation and

Table 1. Laboratory results from two weeks ago

Test	Reference range	Result (two weeks ago)
Electrolytes		
• Sodium	136–145 mmol/L	133
• Potassium	3.5–5.3 mmol/L	4.1
• Urea	2.9–8.2 mmol/L	6.3
• Creatinine	40–95 micromol/L	121
Full blood picture		
• Haemoglobin	115–165 g/L	98
• Red cell count	4.0–5.5 x10 ¹² /L	2.7
• Mean corpuscle volume	80 – 100 fL	106
• Red cell distribution width	9.0 – 15.0%	14.8
• White cell count	4.0–11.0 x10 ⁹ /L	7.3
• Platelets	150–400 x10 ⁹ /L	277
Iron studies		
• Serum iron	9–30 micromol/L	14
• Ferritin	30–300 microgram/L	226
• Vitamin B12	156–672 pmol/L	198 pmol/L
• Holotranscobalamin	25–165 pmol/L	21 pmol/L
• Serum folate	>12.0 nmol/L	44.9 nmol/L
Thyroid function tests		
• TSH	0.40–4.00 mU/L	3.34
Blood sugar level		
• Fasting	4.0–7.0 mmol/L	5.8

restlessness, although in strict terms wandering is a distinct construct.⁴

The aetiology of wandering is largely unknown, with potential influences hypothesised to include pathophysiological changes (e.g. disrupted parietal lobe function and spatial perception), psychosocial factors (e.g. internal discomfort from pain or constipation) and environmental precipitants (such as an inability to wayfind).³ Wandering is associated with several adverse outcomes for people with dementia, including an increased risk of falls, injury and weight loss.³

Wandering has been described as one of the most challenging and problematic behavioural changes associated with dementia.⁴ Current management guidelines recommend an initial assessment to identify potential causes of the behaviour, based on a strong understanding of the person

with dementia and identification of causative factors for wandering.⁴ In this case, many common contributors have already been excluded, such as pain, constipation and inappropriate environment. Interestingly, depression is associated with increased wandering,³ so it is possible that for the resident in this case, depression may have been contributing if her antidepressant therapy was inadequate.

An investigation of potential drug-induced causes of changed behaviour in a person with dementia is considered to be essential in most situations.⁴ In this case, there was a high probability that several medicines were either causing or exacerbating the resident's wandering. Of particular note is the use of dothiepin for depression. As with other tricyclic antidepressants (TCAs), dothiepin possesses anticholinergic activity, which is

*The Cornell Scale for Depression in Dementia (CSD) is designed to assess for the presence of depression in older people with dementia whose ability to communicate their basic needs is maintained. Depressive symptoms are suggested by a total score of 8 or more. The Mini Mental State Examination (MMSE) is an assessment of cognitive function and provides an indication of the severity of cognitive impairment. People with mild Alzheimer's disease typically score at least 21 on the MMSE, 10–20 for moderate disease, and 9 or less for severe disease.¹²

associated with an increased risk of confusion and cognitive impairment in older people,⁵ particularly those with pre-existing dementia.

The resident's wandering worsened following the increased dothiepin dose, which increased suspicion that dothiepin was primarily responsible for the resident's changed behaviour.

A second potential cause was that the wandering was associated with untreated vitamin B₁₂ deficiency. Whilst the most common manifestation of vitamin B₁₂ deficiency is megaloblastic anaemia, vitamin B₁₂ is also necessary for the development and maintenance of myelination of neurons of the central nervous system (CNS).⁶ Central neurological symptoms of vitamin B₁₂ deficiency include altered mental status, cognitive defects and a constellation of psychological symptoms sometimes referred to as 'megaloblastic madness' (depression, mania, irritability, paranoia, delusions and emotional lability).⁶

Whilst the resident's total vitamin B₁₂ level was within the reference range, her holotranscobalamin level (often referred to as 'active B₁₂') was low, which is consistent with vitamin B₁₂ deficiency.⁷ Holotranscobalamin is considered to be a much more sensitive laboratory marker of early B₁₂ deficiency than total B₁₂ levels, as circulating levels decline much more quickly than total levels in deficiency states. Most Australian pathology laboratories now report holotranscobalamin levels in all patients with total B₁₂ levels of less than 200 pmol/L to assist in the interpretation of low and low-normal total B₁₂ results. Holotranscobalamin levels below 25 pmol/L are considered to indicate vitamin B₁₂ deficiency.⁷ In this resident's case, her low holotranscobalamin level, macrocytic anaemia and neurological symptoms are strongly suggestive of vitamin B₁₂ deficiency.

Vitamin B₁₂ deficiency is caused by either inadequate dietary intake or malabsorption.⁶ Inadequate intake most

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frequently occurs in people who eat a vegan or vegetarian diet, or a diet low in meat and dairy products. Malnutrition can occur in people with dementia who wander, as the person's constant movement may interrupt eating,³ which may result in vitamin deficiencies if nutrition is not appropriately managed. There are a number of potential causes of vitamin B₁₂ malabsorption, including autoimmune gastritis (pernicious anaemia), gastric bypass surgery and atrophic gastritis.⁸ Medicines such as metformin and proton pump inhibitors (PPIs) have also been associated with causing vitamin B₁₂ deficiency,^{6,8} and this resident's use of esomeprazole may have contributed to her deficiency.

A related concern regarding this resident's medicine management is the use of antipsychotic treatment as part of the management strategy for her wandering. Firstly, wandering is not considered to be a behaviour that justifies the use of antipsychotic medicine.⁴ Although it may be perceived by others as annoying, wandering is unlikely to cause harm to others, and can be managed through basic behavioural techniques or environmental changes. These strategies avoid exposing people to adverse effects associated with medicines used for behavioural symptoms of dementia such as antipsychotics. Of particular concern with the use of antipsychotics for wandering is that antipsychotic use is associated with causing akathisia,⁹ a feeling of motor restlessness that may exacerbate wandering behaviour. Furthermore, as the onset of akathisia may be delayed by several days, the association between the worsening

wandering and antipsychotic use may not be recognised.⁴ For the resident discussed in this case study, there seems to be little justification for the use of olanzapine, as it is ineffective at best and may actually be aggravating the target behaviour.

Recommendations

A number of recommendations were made in the RMMR report to optimise this resident's medicine management. In consideration of the potential for dothiepin to exacerbate the resident's wandering, it was suggested to withdraw dothiepin and commence sertraline. Although there is a lack of evidence of clear benefit of antidepressants for people with dementia,^{10,11} it was considered that antidepressant treatment was desirable due to the potential for depression to be affecting the resident's behaviour. As sertraline may cause syndrome of inappropriate antidiuretic hormone secretion (SIADH) and the resident had existing mild hyponatraemia,⁹ intermittent monitoring of her serum sodium level was also suggested.

Further recommendations included the cessation of olanzapine through a dose-tapering regimen, based on its lack of effectiveness and potential to exacerbate wandering. Commencement of parenteral vitamin B₁₂ supplementation was also advised; whilst it would have been ideal to cease esomeprazole, this was not considered to be appropriate due to the resident's history of a gastric ulcer and ongoing antiplatelet therapy.

Conclusion

There are many ways by which medications may influence the behavioural and psychological symptoms of dementia (BPSD), and optimising medicine management for any person with dementia requires a comprehensive understanding of both their medicines and medical conditions. RMMRs for people with dementia provide an opportunity to comprehensively assess this important aspect of their care, with the potential to improve quality of life through harm minimisation and optimisation of benefits.

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QUESTIONS

1. Which ONE of the following tests is used to screen for depression in people with dementia?
 - a) Mini Mental State Examination (MMSE).
 - b) Cornell Scale for Depression in Dementia (CSDD).
 - c) Behaviour Rating Scale for Dementia (BRSD).
 - d) Hierarchic Dementia Scales - Revised (HDS-R).
2. Which ONE of the following statements regarding wandering is the MOST appropriate?
 - a) Wandering is rarely observed in people with dementia.
 - b) Wandering is synonymous with non-aggressive agitation.
 - c) Wandering may be precipitated by inappropriate environment.
 - d) Wandering is generally straightforward to manage with antipsychotics.
3. By which ONE of the following mechanisms is dothiepin LEAST likely to cause or exacerbate wandering?
 - a) Antidepressant effect.
 - b) Central anticholinergic effects.
 - c) Induction of constipation.
 - d) Sedative activity.
4. Which ONE of the following laboratory tests is LEAST useful for identifying B₁₂ deficiency in a person with clinical signs of deficiency?
 - a) Active B₁₂.
 - b) Haemoglobin.
 - c) Mean corpuscle volume (MCV).
 - d) Serum B₁₂.
5. A 78-year-old with advanced dementia is admitted to an RCF because his family can no longer manage his incessant wandering. Which ONE of the following statements regarding his management is the LEAST appropriate?
 - a) His weight should be monitored to ensure he is adequately nourished.
 - b) His risk factors for falls should be identified and managed.
 - c) His medicines should be reviewed to identify potential drug-induced causes of wandering.
 - d) He should be physically restrained to prevent disturbance to other residents.



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