

Deprescribing in action: relieving carer burden with HMR

BY DR ANDREW STAFFORD

An 85-year-old gentleman was referred for a home medicines review (HMR). The HMR was requested as he had recently been commenced on a *Websterpak* dose administration aid to assist his wife (as primary carer) manage his medicines.

The referring general practitioner (GP) wanted to ensure that it was being used correctly. The referral also requested that the pharmacist comment on potential options to reduce the gentleman's medicine burden. The patient's medical history was significant for the following:

- Alzheimer's disease
- gastro-oesophageal reflux disease (GORD)
- hypertension
- ischaemic heart disease ('mild' myocardial infarction (MI) 23 years ago)
- overactive bladder
- peripheral artery disease
- type 2 diabetes
- vitamin B₁₂ deficiency.

His medications, as per the HMR referral, were as follows:

- aspirin EC 100 mg each morning
- cholecalciferol 25 mcg each morning
- esomeprazole 20 mg each morning
- hydroxocobalamin 1000 mcg/mL s/c injection every 3 months
- glimepiride 1 mg each morning
- metoprolol 50 mg half twice daily
- risperidone 500 mcg at night
- simvastatin 10 mg at night
- solifenacin 5 mg at night

The patient's wife also attended the HMR interview. Her major concern was that her husband was becoming increasingly reluctant to take his medicines.

The risperidone was introduced around a month ago to manage his agitation around taking his medicines.

The patient's wife had only administered the risperidone for approximately one week, before ceasing it herself because she felt that it was ineffective for managing his behaviour, and she associated it with causing a number of adverse effects. She believed that it made her husband excessively drowsy – so much so that he experienced urinary incontinence because he did not wake up, and he fell out of bed three times that week which had never happened before. Her concern was that his incontinence was worsening, such that he now wore pads at all times. He had experienced urge incontinence for many years which had been adequately controlled with solifenacin until recently. However, he was now finding that he had reduced time between experiencing an urge to urinate and losing urine, and had several episodes of incontinence throughout the day.

Aside from this, the medicines in the *Websterpak* dose administration aid were given as intended, although the patient regularly refused to take many of them.

From their perspective, his cardiovascular conditions were not causing any issues as he was able to mobilise without anginal pain or claudication. Both the patient and his wife recalled him experiencing two episodes of mild hypoglycaemia in the past month, which were appropriately managed with no adverse outcomes. His GORD symptoms were well controlled, although previous attempts at ceasing esomeprazole resulted in a return of symptoms.

Results of blood tests performed a month before the HMR are shown in Table 1. At this time, his blood pressure was 138/57 mmHg, pulse 54 bpm, and he weighed 85 kg.

Assessment

This article provides an overview of the considerations made regarding the two primary concerns of the patient's carer, i.e. her husband's reluctance to take his medicines and his continence management.

Medicine administration

The principles of behavioural strategies to encourage people with dementia to take their medicines are generally no different to techniques employed to assist them perform other activities of daily living.¹ These have been described extensively elsewhere.^{2,3} Briefly, a person-centred approach should be utilised, involving identification of the probable reasons for behaviours that occur during medicine administration, and addressing these reasons using an individualised plan.⁴ Techniques utilised may involve the use of simple, appropriate language and tone, simple instructions, appropriate non-verbal cues, and not arguing.

Medicine burden

A second aspect to reducing the burden of medicine administration for people with dementia and their carers is minimisation of the number of medicines taken.⁵ This was particularly important in this case, given the patient's reluctance to take medicines.

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LEARNING OBJECTIVES

After reading this article, pharmacists should be able to:

- Identify drug-related problems (DRPs)
- Develop a systematic and holistic approach to evaluate and address these DRPs
- Adopt best practice to make clinically sound recommendations to help resolve DRPs and achieve optimal patient care outcomes.

Competency standards (2010) addressed: 1.3, 2.1, 2.2, 2.3, 4.2, 6.3, 7.1, 7.2.

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To achieve this aim, the concept of deprescribing was utilised. Deprescribing has been defined as *'the systematic process of identifying and discontinuing drugs in instances in which existing or potential harms outweigh existing or potential benefits within the context of an individual patient's care goals, current level of functioning, life expectancy, values, and preferences'*.⁶ For the patient discussed in this case, the potential for each medicine to be discontinued was reviewed in consideration of its potential benefits and toxicities, the patient's life expectancy, and the patient and his wife's wishes.

There is considerable variation in the estimated life expectancy of a person with Alzheimer's disease, with published data ranging from 3–12 years.⁷ The man discussed in this case study had moderate dementia and it was assumed that he may live for around five years. The following summary considers the issues regarding his medicine regimen in terms of his anticipated life expectancy and duration of treatment.

Metoprolol

Australian guidelines currently recommend that a beta-blocker should be prescribed for most patients after an MI unless contraindicated (level I evidence, grade A recommendation).⁸ However, there is debate as to the appropriate duration of beta-blocker treatment post-MI in patients with normal left ventricular function who are not experiencing angina, or who require beta-blocker treatment for hypertension or dysrhythmia.⁹ A recent systematic review of the evidence for beta-blocker use post-MI identified that beta-blockers reduce total mortality, re-infarction and sudden cardiac death mainly within the first three years of use, with the majority of benefit occurring in the first year.⁹ As the man discussed in this case had a single event over 20 years ago, and did not appear to have issues with left ventricular dysfunction (i.e. no history of pulmonary oedema), no myocardial ischaemia or arrhythmias, it was considered that metoprolol could potentially be withdrawn.

Aspirin

Similarly, Australian guidelines recommend that all patients should take 75–150 mg daily post-MI indefinitely unless contraindicated (level I evidence, grade A recommendation).⁸ However, there is little evidence to guide the optimal duration of aspirin following an MI, and there is evidence that aspirin cessation is associated with an increased risk of MI when used for secondary prevention.¹⁰ Consequently, there were less compelling arguments to cease aspirin at this time.

Simvastatin

Current guidelines recommend that statin therapy should be given to all patients post-MI irrespective of the patient's cholesterol level.⁸ There is considerable evidence that older people benefit similarly from statin treatment as younger people.^{11,12} However, it is notable that the patient discussed in this case study was taking a very low dose of simvastatin, whilst a dose of 20–40 mg

would be more appropriate based on recent US guidelines.¹³ If minimising medicines was not a focus of this HMR, it may have in fact been considered appropriate to increase the statin dose despite his current lipid profile. However, as there is no evidence nor plausible reason that cardiovascular risk would be substantially increased with statin cessation for the patient in this case, simvastatin was also be considered for potential discontinuation.

Cholecalciferol

Current Australian guidelines recommend that people over the age of 70 who receive less than the optimal level of sun exposure should receive at least 800 IU of vitamin D per day as part of a fracture risk management plan.¹⁴ However, there is some debate as to the benefits of vitamin D supplementation, with a recent meta-analysis finding that vitamin D supplementation without calcium reduces the relative risk of hip fracture by less than 15%, which is not considered to be

Table 1. Laboratory results from two weeks ago

Test	Result (four weeks ago)	Reference range
Electrolytes		
• Sodium	138	136–145 mmol/L
• Potassium	4.8	3.5–5.3 mmol/L
• Urea	6.8	2.9–8.2 mmol/L
• Creatinine	110	40–120 micromol/L
Full blood picture		
• Haemoglobin	110	130–180 g/L
• Red cell count	3.5	4.0–5.5x10 ¹² /L
• Mean corpuscular volume	76	80–100 fL
• Red cell distribution width	15.2	9.0–15.0%
• White cell count	6.2	4.0–11.0x10 ⁹ /L
• Platelets	184	150–400x10 ⁹ /L
Thyroid function tests		
• TSH	3.12	0.40– 4.00 mU/L
Blood glucose studies		
• Fasting BGL	10.2	4.0–7.0 mmol/L
• HbA1c	48	<48 mmol/mol
Lipid profile		
• Total cholesterol	3.6	<5.5 mmol/L
• HDL-cholesterol	1.2	>0.9 mmol/L
• Triglycerides	1.6	<2.0 mmol/L
• LDL-cholesterol	1.7	<3.4 mmol/L
Other		
• 25-hydroxyvitamin D ₃	104 nmol/L	>50 nmol/L

clinically significant.¹⁵ In consideration of the relatively small benefit of cholecalciferol supplementation, it too was identified as a medicine that could potentially be ceased.

Glimepiride

Whilst the general HbA1c target for people with diabetes is ≤ 53 mmol/mol, there are a number of factors that influence the appropriateness of stringent blood glucose control and treatment targets. The relatively limited life expectancy of the patient discussed in this case, in addition to the potentially severe adverse outcomes resulting from an episode of hypoglycaemia, indicate that a target HbA1c of somewhat greater than 53 mmol/mol would be acceptable.¹⁶ As his most recent HbA1c was < 53 mmol/mol, it was likely that adequate glucose control could be achieved without glimepiride.

Incontinence

Urinary incontinence, particularly urge incontinence, is very common in people with dementia, and its prevalence increases as dementia progresses.¹⁷ As with people who do not have dementia, management strategies for urinary incontinence are multi-factorial and may involve behavioural, physical, pharmacological, and occasionally surgical techniques.¹⁸ Dementia presents particular challenges with urge incontinence management, as several effective and frequently used interventions either require the use of cognitive abilities that are diminished in dementia (e.g. bladder training), or may exacerbate cognitive impairment (urinary antimuscarinics).¹⁷

For the man reviewed in this HMR, the lack of effectiveness of solifenacin, coupled with administration difficulties and potential adverse cognitive effects provided good reasons to cease it. However, as this would possibly exacerbate his urinary incontinence, an alternative management strategy needed to be formulated. In terms of pharmacological management, mirabegron is considered to be less

likely to affect cognitive function than antimuscarinics,¹⁹ although currently there is no data regarding its use in people with dementia. As its effectiveness is approximately equivalent to antimuscarinics, and minimising medicines was a priority for the review, it was not considered to be an appropriate management option.

The most commonly used behavioural approaches for continence management for people with dementia involve prompted and timed voiding.¹⁷ Both approaches generally rely on carer assistance, and focus on preventing urine loss rather than restoring normal bladder function. In prompted voiding, the person with dementia is regularly asked whether they need to urinate, whereas timed voiding involves presenting the person to the toilet at regular intervals. As both techniques require vigilance on behalf of the carer, a number of adaptations have been developed to reduce this additional burden, such as the use of programmable alarms and timers.¹⁸

Recommendations and outcomes

To assist the wife with her husband's regular refusal to take medicine, a referral to the Dementia Behaviour Management Advisory Service (DBMAS) was made. A DBMAS team member promptly reviewed the man and provided his wife with a number of strategies to assist her to manage his behaviour. Following this positive interaction, it was suggested to the GP that risperidone was unnecessary at this time.

After a discussion with the man, his wife and the GP, a number of options were reviewed to minimise the man's medicine burden. It was suggested that metoprolol and glimepiride be ceased, and his blood pressure and HbA1c monitored after two weeks and three months, respectively, to ensure that no adverse outcomes resulted from these accepted changes. Based on his recent lipid profile, simvastatin was also ceased as it was felt that it was not conferring substantial clinical benefit.

The man's wife expressed a strong preference to continue aspirin, and it was recommended that a soluble dosage form be trialled to see if the man was more amenable to a solution over a tablet. Whilst liquid preparations of cholecalciferol are available, it was decided to also cease cholecalciferol as his recent vitamin D level was well above the recommended minimum. The man's wife was also instructed on how to disperse esomeprazole tablets, should the man be more receptive to liquids.

To assist with continence management, the GP referred the man to a continence advisory service. It was also recommended that a withdrawal of solifenacin be trialled, based on its lack of effectiveness and potential to exacerbate his cognitive impairment.

Conclusion

Medicine management is frequently challenging for older people, and the balance between the benefits and risks associated with pharmacotherapy changes as medical conditions progress. HMRs provide an ideal opportunity to ensure that all medicines taken are aligned with a person's current goals of therapy, and can substantially assist in alleviating the burden associated with medicine management for older people.

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QUESTIONS

- Mrs Rose is an 84-year-old woman with moderate dementia. She has recently started to refuse a number of medicines that she has taken for several years when her husband attempts to administer them to her. Which ONE of the following is the MOST appropriate initial strategy to resolve this issue?**

 - Explain in detail to her the benefits that each medicine provides.
 - Identify the potential reasons for her changed behaviour.
 - Commence a low dose of risperidone.
 - Cease all medicines that are regularly refused.
- Which ONE of the following strategies is MOST consistent with the concept of deprescribing?**

 - Discontinuing all medicines with high risk of adverse effects.
 - Ceasing all medicines that do not provide symptomatic benefit.
 - Discontinuing medicines with an unfavourable risk-benefit ratio.
 - Ensure that every medical condition is treated strictly according to current guidelines.
- Which ONE of the following statements regarding the secondary prevention of myocardial infarction (MI) in older people is the LEAST appropriate?**

 - There is no evidence that discontinuation of aspirin post-MI is associated with an increased risk of adverse outcomes.
 - Most of the benefits resulting from beta-blockers administered post-MI are realised within the first three years of use.
 - The risk of poor outcomes associated with hypoglycaemia generally outweighs the benefit of stringent blood glucose control (HbA1c ≤53 mmol/mol).
 - Statins are generally as beneficial for secondary prevention of MI in older people as in younger people.
- Considering the risk-benefit ratio and in light of no adverse effects to the patient, in which ONE of the following scenarios is the strategy of deprescribing the medicine cited LEAST likely to be of value?**

 - A 96-year-old woman with a 15-year history of Alzheimer’s disease whose only medicine is alemdronate for primary prevention of osteoporosis.
 - A 68-year-old woman with newly diagnosed type 2 diabetes whose only medicine is rosuvastatin for hypercholesterolaemia.
 - A 62-year-old man with metastatic small cell lung cancer who is taking ramipril for hypertension.
 - A 74-year-old man with no significant medical history whose only medicine is low-dose aspirin.
- Which ONE of the following statements regarding urinary incontinence in people with dementia is the MOST appropriate?**

 - Bladder training is an effective management strategy in advanced dementia.
 - Prompted voiding requires minimal commitment from carers to be effective.
 - Mirabegron has been shown to be safe and effective in people with dementia.
 - Multi-factorial strategies are generally more effective than single interventions.

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