

Prescribing for older people

The chronological age of 65 is widely accepted as a definition of an elderly or older person in developed countries. It is recognised that this is somewhat arbitrary and may not be appropriate in all world populations;¹ the term 'elderly' describes a heterogeneous population in terms of constitution, quality of life, and life-expectancy.

Approximately one-fifth of people in Wales are aged 65 or older,² and this proportion is rising. Of these people, 86% report taking regular prescribed medication for a year or more, and in those aged over 75 the percentage is even higher.³

Polypharmacy

The concurrent use of multiple medications or 'polypharmacy'^{4,5} (usually considered as the use of at least four or five medicines)⁵ is common and often problematic in elderly patients. It is understood that ageing is associated with a greater burden of disease and there are, indeed, instances where appropriate therapy is under-used in elderly patients.⁶ Elderly patients are often those at highest risk for significant morbidity or mortality and, therefore, are calculated to be among those patients that can benefit most from many, often preventative, therapies.

Less well understood, however, is the incremental benefit that a medicine may confer when added to existing therapy.⁷ Evidence of benefit for most medicines is obtained from clinical trials in which patients with multiple morbidities taking large numbers of medicines, including elderly patients, are under-represented. Many clinical guidelines and standards stipulating medicines use are routinely applied in practice to elderly patients, despite weaker supporting evidence for such use. One concern is the failure of the evidence to identify adverse drug events (ADEs)⁸ and drug interactions⁹ in these patients. Available evidence also often fails to inform patients and prescribers about the impact that a medication regimen has on quality of life, and on personal and social factors, such as support needs. Thus, it can be difficult to assess the burden of treatment and possible benefits in older people.

Appropriate medicine use?

At what point does introducing and/or continuing a treatment, become counterproductive?¹⁰ Polypharmacy is often complicated by the administration of more medicines than is clinically necessary.^{4,11} This is also referred to as 'overprescribing',¹² and is an example of 'inappropriate' medicine use.^{11,12} Appropriate prescribing may involve prioritising therapies and deciding, with an individual, what is most important to them. This may necessitate a shift from focusing on 'what is the matter' with a patient to 'what matters' most.¹³

A patient-centred approach:

'what is the matter' or 'what matters'?

Sensitivity to age discrimination and narrow treatment perspectives can lead to decisions to treat disease or to try to prevent future disease that may be unnecessary or unwelcome. Providing treatments for some diseases can be viewed as selecting for other causes of death,¹⁰ which highlights the importance of decision making and the communication of risks and benefits between doctors and patients. Prescribing for the elderly is also managed within the context of healthcare systems that potentially amplify rather than minimise some risks.

What follows is a discussion of good prescribing practice, specifically in relation to elderly patients. Key points for consideration are listed and their relevance is illustrated using antipsychotic therapy as an example. Tools that facilitate medication review and appropriate prescribing in older patients are also discussed.

Before starting therapy...

While clinicians should 'beware of ageism' and investigate, within reason, treatable disease,¹⁴ they should be mindful of the manifestations of ageing.¹⁵ Diagnoses may be more difficult in older people – non-specific presentations are common (e.g. confusion associated with minor illness), as are atypical presentations (e.g. myocardial infarction without chest pain). Deterioration can be faster and recovery slower in elderly patients.¹⁴

The possibility that a patient may be experiencing ADEs related to existing medication/s should be considered (see discussion below). Alternatively, symptoms may be caused by a failure to take prescribed medications appropriately, or at all.

Before initiating a medicine, non-pharmacological measures should be optimised. Are there avoidable triggers for symptoms?¹⁶ Are there personal, social, or environmental factors that can be addressed? For example, have sleep hygiene measures (avoiding daytime naps, getting up at the same time each day, etc.) been reviewed before prescribing medicines for insomnia?

Good prescribing practice

Use drugs that are familiar

Prescribers are advised to limit the range of drug preparations they use to those with which they are thoroughly familiar.¹⁵ The BNF lists available medicines, and those considered 'less suitable for prescribing' are noted and should be avoided.

Use the lowest effective dose¹⁷

Titrate up from low doses slowly. Doses in the elderly are often substantially lower than in younger adults because pharmacokinetics and pharmacodynamics alter with age. Factors such as increased body fat and reduced lean body mass, reduced body water, and lower serum albumin concentration may affect initial drug distribution.

Other significant factors that will affect doses of ongoing treatment include:

- reduced renal function
- reduced hepatic function
- reduced haemostatic reserve
- increased sensitivity / changes in drug receptors.

Anticipate drug interactions

Potential interactions between drugs should be screened for, as should 'drug-food', 'drug-alcohol', and 'drug-herbal' interactions.⁹ Be alert to the use of over-the-counter medicines, complementary products, old prescriptions or out-of-date medicines, and 'shared' medication.

Although interactions may not always be associated with adverse outcomes, many probably go unrecognised or are attributed to other causes (see the discussion on page 3 about prescribing cascades). Polypharmacy can be associated with complex networks of interactions, but many common interactions are identifiable.

Examples include:

- interactions involving drugs that have a narrow therapeutic range or a steep dose-response curve (e.g. digoxin and warfarin).
- interactions between drugs that are inhibitors or inducers of cytochrome P450 isoenzymes (e.g. ciclosporin, clarithromycin, and phenytoin), and drugs that are substrates of these enzymes.
- additive or synergistic interactions, such as NSAIDs and clopidogrel (bleeding), or ACE inhibitors and potassium-sparing diuretics (hyperkalaemia).
- antagonistic drug interactions (e.g. levodopa and dopamine antagonists).

Be alert to ADEs

Adverse drug events can be the result of interactions between drugs or, more frequently, 'drug-disease' or 'drug-patient' interactions.⁹ Common ADEs that are often not attributed to medication include confusion, constipation, hypotension, and falls. Some ADEs may occur as a result of one or more contributing factors.

The impact of potential harm from ADEs cannot be underestimated. Severe ADEs account for 5–17% of hospital admissions for elderly patients⁶ and are associated with significant morbidity and mortality. Less severe ADEs can also be detrimental as they reduce quality of life and may adversely affect patient concordance, they may limit the choice of available therapies, and can cause diagnostic confusion.

Monitor therapy

Prescribing responsibility extends to monitoring medicines use, especially given the potentially harmful effects of medicines commonly prescribed for older people. The 1000 Lives Plus campaign in Wales has identified anticoagulants, opioids, insulins, thiazide diuretics, NSAIDs, and antipsychotics in dementia (see page 4) as the drugs that represent 'areas of greatest harm and greatest opportunity for improvement'.¹⁸ Guidance is available on reducing prescribing errors and promoting safe practice for these medicines.^{18,19,20} Drugs which are deemed suitable for prescribing in primary care only under 'shared-care' agreements (e.g. amiodarone, methotrexate, leflunomide) should have monitoring requirements specified in pre-defined protocols.²⁰

Stopping medicines: sometimes 'less is more'

In principle, the initiation of a medicine should be considered as a trial – discontinuation is always an option. In support of the 'less is more' theory, stopping medicines is often feasible in elderly patients with no adverse consequences.¹¹ Stopping medicines is discussed in a number of WeMeReC Resources.*

Avoid the prescribing cascade

When ADEs are misinterpreted as new disease and treated with new medication, a 'prescribing cascade' is established.⁹ Consider the elderly patient with urinary incontinence caused by an acetylcholinesterase inhibitor such as donepezil, who is treated with an anticholinergic drug; or the patient with confusion caused by an anticholinergic drug, who is subsequently treated with an antipsychotic. The additional treatment has the potential to further complicate the patients' clinical picture and compound their risk. In circumstances where a medicine is not efficacious or ADEs are complicating therapy, a strategy of substitution is preferred.

Promote concordance

Various approaches have been used to optimise prescribing and reduce inappropriate medicines use, but good communication with the patient is vital.^{12,17,21} Up to half of patients don't take their medicines 'as expected'.⁶ Prescribers should be aware that even with relatively straightforward regimens there is evidence that patients, particularly those with limited literacy, will struggle to establish efficient or appropriate timings for taking medicines.²² Patients should be provided with clear instructions – simple verbal and/or written instructions in an appropriate language. Directions to take medicines 'prn' or 'as required' are not helpful.¹⁶ Where necessary, prescriptions for such use should be accompanied by information about the indication, dose, frequency, and duration of therapy.

The use of devices, the convenience of containers, and storage requirements should also be considered and discussed when arranging supply. Compliance aids, such as multicompartiment dosing boxes are useful for some patients; however, there is evidence of over-reliance on these when, in many instances, they are not appropriate.²³ In some areas, Medication Administration Records are preferred to monitored dosage systems for use in patients' homes.

Prescribers should be aware that healthcare outcomes can be affected by patients' confidence in self-management, their management of pain, psychosocial problems, nutritional status, environment, and factors such as financial status. A socioeconomic gradient exists in the incidence and prevalence of almost all categories of disease.²⁴ Additional risks that are common in the elderly and may hinder treatment include:

- loss of dexterity
- impaired sight / hearing
- confusion / dementia / depression
- reduced mobility.

Involve carers where reasonable

Informal (family and friends) or formal carers can play an important role in supporting medicines use.⁶ Clarifying roles and lines of communication, and ensuring consistency in the provision of care is an area that frequently presents challenges.²⁵

Recognise system weaknesses

Risk factors for inappropriate prescribing that are associated with systems of care include:^{6,17}

- discharge from hospital / facility in last four weeks
- multiple doctors / health professionals
- need for carers / residential care
- changes to medicines in last three months
- repeat prescribing.

These risk factors highlight the significance of interfaces between primary care, secondary care, home or residential care, and between individual health professionals – points where care can become fragmented, and where good communication and documentation are most needed, but often lacking. Barriers to best practice can be related to a variety of personal, environmental, cultural, and organisational factors. More evidence is required for methods that improve prescribing, and investment in successful interventions is needed. As well as promoting the safe and appropriate use of medicines, systems that support good prescribing practice can reduce waste and, as a consequence, potentially avoidable costs.²⁶

There is increasing focus on structured approaches to improve prescribing including the development of incident reporting systems,⁸ and the review of procedures in facilities such as nursing homes.¹⁶ To date, there is some evidence of benefit associated with certain models of multiprofessional and specialist geriatric services, pharmacist care, prescriber education, and computerised decision support systems.^{12,21} It is recognised, however, that applying or adapting these for use in different settings or across international boundaries can be difficult.

Repeat prescribing and medication review

Following good practice when issuing repeat prescriptions, (i.e. making authorisation checks and undertaking medication review) is essential in providing care for the elderly.⁶ Features of good repeat prescribing systems and the application of the 'NO TEARS' tool for reviewing medication have been discussed in a previous WeMeReC publication.*

* Resources available at www.wemerec.org

Stopping medicines.

WeMeReC bulletin (January 2010) and e-notes series.

Medication review for the 10 minute consultation.

WeMeReC bulletin (November 2005).

Tools to assess prescribing in the elderly

Numerous tools have been developed, specifically, to help identify inappropriate prescribing in the elderly.^{12,21} Examples from North America include the Improved Prescribing in the Elderly Tool (IPET), and the widely cited Beers criteria, which has undergone several revisions, the last being in 2003. These criteria have been adapted for use in several countries with some substantial improvements²⁷ that enable clinical medication reviews to be undertaken more consistently and efficiently.

In Ireland, two sets of criteria have been developed to assess whether medicines have been inappropriately prescribed or omitted: the Screening Tool of Older Person's Prescriptions (STOPP) and the Screening Tool to Alert doctors to Right Treatment (START).²⁸ The STOPP and START criteria are comprehensive, organised, and referenced, and early studies suggest that they are applicable to a variety of settings.²⁷ As with any tools, however, their validity is affected by the local availability and cost of medicines, relevant clinical practice guidelines, and the emergence of new evidence and treatments.

Illustration The atypical antipsychotics, quetiapine, olanzapine, and risperidone, are the most commonly prescribed antipsychotics in Wales.²⁹ In older people, antipsychotics are associated with an increased risk of serious ADEs and, therefore, they are not recommended for mild to moderate psychosis in the elderly.¹⁵ These medicines are not licensed for dementia-related psychosis and/or behavioural disturbances. (Risperidone does have a limited short-term indication for Alzheimer's dementia.)

Most patients would be started on these agents in consultation with specialists, but a clinical assessment is needed to ensure that any co-existing conditions are optimally managed and other causes are excluded. Episodes of confusion can be precipitated by illness such as urinary tract infection, or medication such as anticholinergic or antidepressant therapy. The context of altered behaviour also needs to be taken into account. Are there other potential triggers? Are the patient's basic needs being met? Are carers involved?

Elderly patients with dementia have an increased risk of stroke and death when taking antipsychotics. Older patients are also at higher risk of postural hypotension, changes in temperature regulation, extrapyramidal effects, and anticholinergic effects, making them particularly susceptible to ADEs such as dangerous falls. (Risperidone carries a black triangle indicating that all ADEs, not just serious events, should be reported via the Yellow Card Scheme.)

Caution is advised when prescribing these medicines for patients with co-existing disease, including cardiovascular disease, and hepatic or renal impairment. There is also the potential for interactions with many other medicines with serious consequences. Recommended doses are lower in the elderly: the initial dose for risperidone is half the usual adult dose and is even lower in patients with Alzheimer's dementia. Any use of antipsychotics in older patients should be reviewed regularly. If stopping therapy after long-term use, gradual withdrawal is required in order to prevent acute withdrawal symptoms or rapid relapse.

References

1. World Health Organisation (WHO). Definition of an older or elderly person. www.who.int
2. Statistical Directorate, Welsh Assembly Government. Population of Wales an overview. 2009. www.statswales.wales.gov.uk
3. Welsh Assembly Government. Welsh Health Survey 2009.
4. Hajjar ER et al. Polypharmacy in elderly patients. *Am J Geriatr Pharmacother* 2007; 5: 345-351.
5. Payne RA, Avery AJ. Polypharmacy: one of the greatest prescribing challenges in general practice. *Br J Gen Pract* 2011; 61: 83-84.
6. Welsh Assembly Government. Medicines and older people. In: National Service Framework for Older People in Wales. March 2006.
7. Warburton RN. What do we gain from the sixth coronary heart disease drug? Not much: guidelines must consider cost effectiveness. *BMJ* 2003; 327: 1237-1238.
8. Cresswell KM et al. Adverse drug events in the elderly. *Br Med Bull* 2007; 83: 259-274.
9. Mallet L et al. The challenge of managing drug interactions in elderly people. *Lancet* 2007; 370: 185-191.
10. Mangin D et al. Preventative health care in elderly people needs rethinking. *BMJ* 2007; 335: 285-287.
11. Garfinkel D, Mangin D. Feasibility study of a systematic approach for discontinuation of multiple medications in older adults. Addressing polypharmacy. *Arch Intern Med* 2010; 170: 1648-1654.
12. Spinewine A et al. Appropriate prescribing in elderly people; how well can it be measured and optimised? *Lancet* 2007; 370: 173-184.
13. Wasson J. Multiple health problems in elderly people. Adapting what is known. *BMJ* 2008; 336 (Suppl): 950-951.
14. Longmore M, Wilkinson IB, Rajagopalan S. Thinking about medicine. In: Oxford handbook of clinical medicine. 7th Ed. Oxford, Oxford University Press, 2007: 14.
15. BNF 61. British Medical Association, Royal Pharmaceutical Society. British National Formulary. Pharmaceutical Press, March 2011. www.bnf.org
16. National Prescribing Service. Drug use in the elderly. Prescribing practice review: for general practice. July 2004; 26.
17. National Prescribing Service. Medicines and older people: an accident waiting to happen? *NPS News* 2004; 34.
18. 1000 Lives Plus. The 'how to guide' for improving medicines management. April 2010. www.1000livesplus.wales.nhs.uk
19. National Patient Safety Agency. Medication Safety. www.npsa.nhs.uk
20. All Wales Medicines Strategy Group. www.awmsg.org
21. Kaur S et al. Interventions that can reduce inappropriate prescribing in the elderly. *Drugs and Aging* 2009; 26: 1013-1028.
22. Wolf MS et al. Helping patients simplify and safely use complex prescription regimens. *Arch Intern Med* 2011; 171: 300-305.
23. Athwal D et al. Compliance aids: an elephant in the room. *Pharm J* 2011; 286: 75-76.
24. Wright N et al. Moving beyond single and dual diagnosis in general practice. Many patients have multiple morbidities, and their needs have to be addressed. *BMJ* 2003; 326: 512-514.
25. Oboh L. Working to reduce medication risks as a champion of elderly care. *Clinical Pharmacist* 2009; 1: 491-192,495.
26. York Health Economics Consortium, University of York, School of Pharmacy, University of London. Evaluation of the scale, causes and costs of waste medicines. 2010.
27. Levy HB et al. Beyond the Beers criteria: a comparative overview of explicit criteria. *Ann Pharmacother* 2010; 44: 1968-1975.
28. Gallagher P et al. STOPP (Screening Tool of Older Person's Prescriptions) and START (Screening Tool to Alert doctors to Right Treatment). Consensus validation. *Int J Clin Pharmacol Ther* 2008; 46: 72-83.
29. CASPA (Comparative Analysis System for Prescribing Audit). Prescribing Services. <http://howis.wales.nhs.uk/sitesplus/955/page/44868>