

# Medication and the Older Patient: What's the Limit?



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Many seniors face a daily regimen of multiple medications. Older people consume more medications now than 10 years ago. This is related, in part, to advances in pharmacotherapy and an increase in the body of evidence supporting treatment of conditions, such as hypertension, hyperlipidemia and osteoporosis.

Both patient and physician variables increase the likelihood of medications being prescribed, perhaps without necessity, to older patients. These variables include:

- patient's expectation of a prescription,
- inadequate reporting of current medications, including over-the-counter or herbal remedies,
- failure to report adverse effects,
- automatic refills by telephone and
- multiple prescribers.

## The prescribing cascade

Treating symptoms rather than defining a diagnosis can result in failure to recognize adverse drug effects and contribute to polypharmacy. This has been coined the "drug cascade" or "domino effect" (Figure 1).<sup>1</sup>

A common example of how this phenomenon contributes to a cycle of more medications is the use of non-steroidal anti-inflammatory medication, leading to sodium retention with exacerbation of hypertension and congestive heart failure, necessitating the use of additional cardiac medications.

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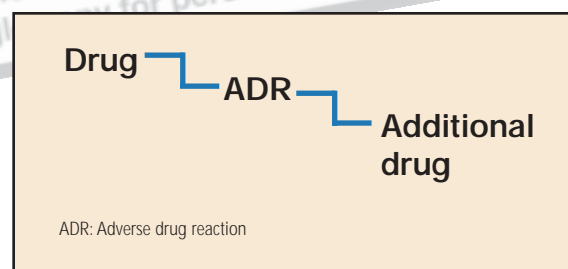


Figure 1. Prescribing cascade.

In all age groups, the prescription of medication balances between the potential for benefit and the potential for harm. There is evidence that with increasing numbers of medications, there is an increased risk for adverse drug effects, drug-drug interactions, drug-disease interactions and the obvious additional cost of medication.

### *Adverse drug effects in older patients*

The incidence of adverse drug effects is increased in older patients, not due to age itself, but due to the increased number of medications prescribed and higher burden of comorbid illness.

Unique to adverse drug events in the geriatric population is the manner in which they may present. Drug-induced confusion, falls, urinary incontinence and retention and severe constipation are common adverse drug effects uncommonly seen in the younger population.

Adverse effects of medications should always be considered in the differential diagnosis when these symptoms present for the first time or when there is an exacerbation of these symptoms in the older patient.



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### *Strategies to reduce polypharmacy*

There is no quantitative threshold to define polypharmacy. A more relevant issue is the appropriateness of prescribing for older persons. This requires a qualitative appraisal of medications used by an individual patient rather than a quantitative evaluation.

Clinicians should strive to practice evidence-based medicine. When managing the frail, elderly patient, however, there is often a lack of evidence on which to base best prescribing practice. Even clinical trials specifically designed to evaluate therapies in older adults, such as the hypertension in the elderly trials, employed stringent exclusion criteria that resulted in highly selected elderly subjects with few comorbid illnesses.

We are often forced to rely on consensus, expert opinion and experience when managing the frail, elderly patient with multiple health problems.

There are published criteria to help avoid inappropriate prescribing in the elderly. Commonly referred to as the Beers criteria, researchers have compiled and updated a list of

medications that are considered inappropriate for use in older patients.<sup>2</sup> Some of the medications from this list with high severity rating for inappropriateness are shown in Table 1.

A patient's medications should be reviewed regularly. In Ontario long-term care homes, it is mandatory to conduct medication reviews every three months. When examining a list of medications or when contemplating a new prescription, it is helpful to ask yourself these questions:<sup>3</sup>

- Is the indication for the medication still present?
- Is the diagnosis correct?
- Is the drug effective?
- Is this evidence-based practice?
- Is the dose correct?
- Are the directions correct?
- Are the directions practical?
- Are there drug-drug interactions in this patient?
- Are there drug-disease interactions in this patient?
- Is there duplication with other drugs being used?
- Is the duration of therapy acceptable?
- Is this a cost-effective choice?

Table 1

### Some medications to avoid in the older patient

- Amitriptyline, doxepine: Strong anticholinergic and sedating properties
- Long-acting benzodiazepines (diazepam, flurazepam, chlordiazepoxide): Long half-life allows for accumulation of drugs and prolonged sedation
- Short-acting benzodiazepines at high doses: Increased sensitivity in older patients, higher doses associated with more adverse effects
- Barbiturates: Safer alternatives
- Indomethacin, other non-steroidals long-term, full dose: Gastrointestinal toxicity, renal failure, exacerbation of hypertension and congestive heart failure, confusion
- Meperidine: Poor oral bioavailability, active metabolite has long half-life and can cause seizures, especially in setting of renal insufficiency
- Pentazocine: More central nervous system adverse effects than other narcotic alternatives, including confusion and hallucinations
- Muscle relaxants and antispasmodics: Anticholinergic side-effects, sedation and weakness
- Drugs with strong anticholinergic effects: Can cause confusion, sedation, urinary retention, constipation

## Polypharmacy is one end of the spectrum

Polypharmacy or inappropriate prescribing is one side of the prescribing spectrum, where risk of adversity is increased with the number of drugs prescribed. It is important to point out that the other side of the prescribing spectrum, under-prescribing of evidence-based therapies, can be equally deleterious.

Ageist attitudes may preclude adequate diagnosis of treatable conditions, such as depression and delirium, or preclude the treatment of a condition even after it is recognized. Examples of the latter are the under-use of anti-coagulation in chronic atrial fibrillation, thrombolysis for myocardial infarction in the older patient and treatment of osteoporosis.

#### References

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3. Hanlon JT, Schmader KE, Samsa GP, *et al*: A method for assessing drug therapy appropriateness. *J Clin Epidemiol* 1992; 45(10):1045-51.