

Drugs in the Elderly: Helping Laura



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Laura's Problem

- Laura, 80, presents with falls and cognitive decline. She was widowed eight months ago and she has a history of hypertension, insomnia and polymyalgia rheumatica.
- Laura's daily medications include:
 - hydrochlorothiazide, 12.5 mg,
 - prednisone, 10 mg and
 - ibuprofen, 200 mg.



Laura's physical exam reveals:

- MMSE score of 20/30
- BP 160/90 mmHg, heart rate 80 beats per minute (irregular), but otherwise normal
- Normal laboratory tests
- Microvascular changes in the brain CT scan
- Atrial fibrillation in the electrocardiogram

What's wrong with Laura?
Go to page 25 to find out.

Polypharmacy and appropriate prescribing are major healthcare issues. Since age is the greatest risk factor for almost all diseases, seniors (those over 65 years of age) represent 30% of prescription drug use and 40% of non-prescription drug use in North America. Community dwelling seniors average 4.5 daily medications and hospitalized seniors average 9.1 daily medications.¹ Polypharmacy is dictated primarily by disease, disability load and by the patient's expectations.

Why are older persons susceptible to adverse drug reactions?

Elderly people are susceptible to adverse drug reactions (ADR) because of the following:

- 1) Polypharmacy
- 2) Pharmacokinetic changes, especially reduced creatinine clearance
- 3) Symptomatic prescribing
- 4) Inadequate education

Common ADR in seniors include:²

- Depression
- Constipation
- Falls
- Hip fractures
- Immobility
- Confusion



What are the five important drugs/treatments in the elderly?

According to the Faculty of the Division of Geriatric Medicine at the University of Ottawa, the following are important to consider when treating the elderly:

One Antihypertensives

The recommended goal is to maintain a BP of < 140/90 mmHg. However, if there is evidence of end-organ damage (*i.e.*, renal impairment, strokes, diabetes, cardiomyopathy *etc.*), the target BP should be lower.³

Initial treatment goals include:

- diuretics (generally first-line),
- calcium channel blockers (CCBs) and
- angiotensin-converting enzyme (ACE) inhibitors.

There is evidence that even for those over the age of 80, there is a 35% reduction in events such as congestive heart failure (CHF).⁴ Treatment of systolic hypertension is also associated with a 55% reduction in dementia at four year follow-up.⁵

Two Warfarin

Atrial fibrillation affects five per cent of those over the age of 65. The risk of a yearly stroke increases from five per cent up to 15% with other coexisting factors such as:

- CHF,
- hypertension,
- previous stroke/transient ischemic event and
- aged over 75 years.



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Back to Laura

Laura's cerebrovascular risk factors need to be addressed and her BP needs to get under control. To do so, Laura could try the following:

- A trial stop of her nonsteroidal anti-inflammatory drug and either increase her hydrochlorothiazide to 25 mg, or add a calcium-channel blocker or an angiotensin-converting enzyme inhibitor
- Anticoagulation with warfarin is recommended to an international normalized ratio of 2.0 to 3.0 to prevent strokes, which may be the cause of her falls and confusion
- A bone density scan would evaluate the degree of fracture risk
- Laura needs be started on a calcium and vitamin D supplements
- Adding a bisphosphonate should also be considered, especially since she is on prednisone
- For pain control, regular acetaminophen and exercise can be discussed
- Depression should also be considered

Warfarin offers a risk reduction of 68% vs. 20% with acetylsalicylic acid. Furthermore, it has been demonstrated that the risk of complications (even with a history of falls) is low when the person is regularly monitored.⁵

Three Fracture prevention therapy

Fracture reduction in an older person should include both measures to reduce falls, as well as treatment geared at increasing bone density. At the age of 50, the requirements are 1500 mg of elemental calcium and 800 IU of



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vitamin D. With the average North American diet and limited sun exposure in our northern hemisphere, most seniors require supplementation of both calcium and vitamin D. Bisphosphonates can be used to decrease fracture rates.⁶

Four *Sleep hygiene*

Medications are best avoided due to serious ADR in the elderly. Non-pharmacologic therapies should be considered as first-line therapy, such as: sleep hygiene (*i.e.*, regular bedtime and avoiding naps and caffeine).⁷ Zopiclone or trazodone can be considered as short-term therapy (less than two weeks) and benzodiazepines should be avoided.

Five *Antidepressants*

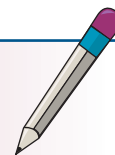
Atypical presentations of depression are common and can present as:

- somatic,
- memory or concentration complaints,
- chronic pain,
- alcohol overuse and
- failure to thrive.

Psychotic features can be seen and a sad or depressed mood is often absent. A wide range of therapies are now available (venlafaxine or citalopram are good options), but treatment must include monitoring for side-effects, such as the syndrome of inappropriate antidiuretic hormone secretion (all selective serotonin reuptake inhibitors), hypertension (venlafaxine) or oversedation (mirtazapine).

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Take-home message



Five dos and don'ts of safe prescribing

- Always consider new drugs as a potential cause of any new symptom in the elderly.
- Start all new drugs as an N of 1 trial.
- Start low and go slow, but push the therapy until you can achieve therapeutic goals, or until side-effects occur.
- Know and use a small list of drugs in the elderly: 90% of medication needs can be met with a toolbox of 25 drugs.
- Regularly review drug regimens and try to reduce drugs. Avoid high-risk drugs.

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