Smarter Prescribing
for the Elderly

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It is fortunate that "do no harm" is not actually in the Hippocratic Oath as is thought, because any medication carries risk for adverse drug reactions and particularly so in the elderly because of homeostenosis, polypharmacy, decreased renal clearance and the lack of research into the benefits and risks of drugs in elderly patients.

Top five do's and dont's in smarter prescribing

1. Think of every drug prescribed as a "clinical trial" with an N=1. Establish your goals for therapy, a baseline for common side-effects, a time period for your "clinical trial" (usually one to two weeks), exclusionary criteria (other diseases or other drugs) and communicate benefits, risks and common side-effects to the patient/family
2. Always think of drugs as the diagnosis of any new symptom, including recent new drugs or withdrawal of old drugs. Beyond prescription drugs, remember OTC, Over the Fence [from neighbours and friends], alcohol (which still affects 10% of the elderly) and herbal medications
3. We all learned "start low and go slow" in medical school but that rule is only half correct. The second part is to titrate the dose up until you reach significant side-effects or until you reach your maximum dosage, or until goals are fully met

Meet Dorothy

Dorothy is an 81-year-old widow who complains of falling 2 times in the past 3 months. She has back pain affecting mobility, difficulty keeping her bungalow in good order, decreased energy and trouble sleeping.

Her daughter is worried that her mother is "dwindling." Dorothy's past medical history includes osteoarthritis, hypertension, hyperlipidemia, L3 compression fracture, transient ischemic attack, constipation. Her height is 5'4", she weighs 105 pounds and has decreased quad strength.

Dorothy's medication list:

- Hydrochlorothiazide 12.5 mg q.d.
- Atorvastatin 10 mgm q.d.
- Olanzapine 5 mg h.s.
- Amitriptyline 10 mg b.i.d.
- Stool softeners 200 mg b.i.d.
- Stimulant laxatives 2 tabs q.d.
- Ibuprofen 200 mg t.i.d. p.r.n. for pain
- ASA 325 mg q.4.h. p.r.n. for pain
- Acetaminophen 500 mg q.4.h. p.r.n. for pain
- Dimenhydrinate 50 mg p.r.n. for sleep
- Lorazepam 1 mg t.i.d. p.r.n. for anxiety or insomnia

4. Regularly review drug regimens and risk reducing drugs . In a trial of discontinuation, patients may feel the same, or better (if unappreciated side-effect). Worsening would involve predictable side effects such as, weight gain/shortness of breath if withdrawing digoxin in congestive heart failure (CHF), that the patient can be warned to monitor

Table 1

RRR vs ARR (and NNT = Number Needed to Treat

	Risk/year	RRR	ARR	NNT
65-year-old/ 0 other CVA risk factors	5%	70%	3.5%	29
75-year-old/ 1 other CVA risk factor	15%	70%	10.5%	9

*This means that generally you should treat aggressively as long as the elderly person has at least 1 to 2 years life expectancy with reasonable quality of life. Remember that the average 80-year-old woman has 12 more years expected life and the average 90-year-old woman has 6 more years expected life.

RRR: Relative Risk Reduction
ARR: Absolute Risk Reduction
CVA: Cerebral Vascular Accident

FAQ

What can be done to maximize compliance?

- Keep number of medications to a minimum
- Keep times per day to 2 or 3 maximum
- Non-childproof containers
- Clear, large labels
- Physician concrete explanation of benefits of drug therapy (remember poor understanding/compliance and need for dosettes suggest possible cognitive problems)
- Pharmacist involvement: total pharmaceutical care

5. Avoid the band-wagon of new drugs unless they have actually been researched or extensively used elsewhere in the elderly. Clinical experience once drugs are out "in the real world" has often shown different side-effects than in research studies. Wait until there has been significant experience in the elderly or check with your local specialist

Practicing evidence-based polypharmacy

Generally with advancing age (60-70-80-years-old, *etc.*) research studies have shown that relative risk reduction (*ie.* stroke in hypertension trials) remains the same. This means that absolute risk reduction (ARR) usually significantly increases in the elderly because they are at much greater risk of outcomes (*eg* CVA with atrial fibrillation) (Table 1).

Top five drugs to use less

Conventional NSAIDs

The concern is GI toxicity usually without warning symptoms. COX-2 NSAIDs are safer (50% less GI toxicity) but all NSAIDs can worsen CHF and hypertension and can increase potassium and creatinine (check labs within two weeks). However, if pain remains uncontrolled on regular analgesics alone, a 2/52 NSAID trial (+/- cytoprotection) is justifiable.

Benzodiazepines

Benzodiazepines have a strong association with falls. They are particularly overused in anxiety (remember first time anxiety > 65-years-of-age is depression until proven otherwise).Weaning can be successful only if the senior is motivated. Do it very slowly: over two to four months.

Conventional neuroleptics

They are still the drug of choice Haloperidol) in acute situations but should be converted to atypicals if longer use (> 2/52) is needed (much less tardive dyskinesia). Atypicals (*eg* risperidone is the only drug approved in Canada for behaviour problems with dementia) have fewer side-effects. The possible risk increase in mortality of 2.3% to 3.5% should be discussed with family and documented if a four week trial is initiated.

Amitriptyline and other drugs with anticholinergic side-effects

Anticholinergic side-effects are associated with delirium and worsening dementia and should be avoided as much as possible.

Stool softeners/sennosides

Stool softeners should only be used short-term and if stools are hard. In Canada, we waste $50 million/year on stool softeners. Sennosides are useful short-term but long-term affect colonic motility. Alternatives are milk of magnesia (MOM) and lactulose.

Top five drugs to use more

Antidementia drugs

Every patient with dementia should have a 3/12 trial (only 25% do). The average benefit is delay of progression for one year, individually 25% are super responders and 50% show the average benefit. If dementia were a disease of middle-aged persons, 100% would get a trial.

Antidepressants

Depression remains under recognized/undertreated because of atypical presentation (anxiety, chronic pain, loss of energy/interest).

Vitamin D (800-1000 IU/calcium 1000 mgm)

Help prevent the expected tsunami of hip fractures. Vitamin D also improves strength, prevents falls and may prevent forms of cancer.

Narcotic analgesics

Pain affects 40% to 50% of the elderly and is undertreated. Narcotics are not organ toxic, like NSAIDs. Codeine (+/- acetaminophen) is Canada's favorite narcotic (79%) yet is worse for common side-effects and is not metabolized by 10%. Better alternatives are hydromorphone, oxycodone and the fentanyl patch.

Warfarin

Atrial fibrillation is common and a big cause of stroke. ARR is high. You need 295 falls to equal the risk of not anticoagulating.

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Take-home message

- Adverse Drug Reactions are very common in the elderly and result in significant mortality, morbidity and hospitalizations
- There is a risk with prescribing any medication but 5 tips are presented to improve appropriate prescribing
- Appropriate prescribing involves both less prescribing of high risk drugs and more prescribing of underutilized medications (see top 5 drugs)
- The elderly can greatly benefit by smarter prescribing; ARR is higher in the elderly so NNT are lower

Dorothy's case cont'd

New Diagnoses:

- Dementia
- Osteoporosis
- Poor pain control

Medications were successfully adjusted as follows:

- Galantamine 16 mg q.d.
- Acetaminophen 1000 mg t.i.d.
- Amitriptyline, lorazepam, ibuprofen, dimenhydrinate, stool softeners discontinued
- "Bran plan" and extra fruit for bowels, lactulose p.r.n.
- Olanzapine discontinued
- Calcium and Vitamin D added, resident refused bisphosphonate due to intolerance in the past