Polypharmacy and Deprescribing: Prescribing the Drugectomy

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Medication Therapy Management

Pharmacy Grand Rounds
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Objectives

1. Discuss the concept of deprescribing
2. Identify which patients may benefit from deprescribing
3. Outline principles of safe and effective deprescribing in clinical practice
‘America’s other drug problem’: Giving the elderly too many prescriptions

August 15, 2016
Excerpts from the article

- “This is America’s other drug problem – polypharmacy. And it is huge,” Dr. Maristela Garcia, director of the inpatient geriatric unit at UCLA Medical

- “There are a lot of souvenirs from being in the hospital: medicines they may not need,” said Dr. David Reuben, Chief of the geriatrics division at UCLA School of Medicine.

- “There’s a tendency in medicine every time we start a medicine to never stop it,” Dr. Ken Covinsky, UCSF
What is Polypharmacy?

• Research definition
  • Taking more than 5 medications

• WHO definition
  • “The administration of many drugs at the same time or the administration of an excessive number of drugs.”

• Differs from polymedicine or polytherapy, which refers to multiple meds which are all clinically indicated and appropriate.
Causes of Polypharmacy

• Multiple comorbid conditions
• Multiple prescribers
• Multiple pharmacies
• Practice guidelines that often recommend multidrug regimens
• Self treatment with over the counter medications and supplements
Consequences of Polypharmacy

- Adverse drug events
- Drug interactions
- Medication nonadherence
- Decreased functional status
- Geriatric syndromes: delirium, falls, urinary incontinence
- Increased healthcare costs
  - One third of hospitalizations in older adults are medication related

Strategies to Minimize Polypharmacy

- Utilizing age-appropriate prescribing principles
  - Renal dosing, drug interactions, “start low and go slow,” beware of the prescribing cascade

- Minimizing use of potentially inappropriate medications
  - Beers’ Criteria & STOPP-START

- Deprescribing when possible
The Prescribing Cascade

Drug 1

ADE misinterpreted as new medical condition

Drug 2

ADE misinterpreted as new medical condition

Rochon PA, Gurwitz JH. Optimizing drug therapy for elderly people: the prescribing cascade. BMJ 1997; 315:1096
## Common Tools for Detecting Potentially Inappropriate Medications

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Country of Origin</th>
<th>Validation Method</th>
<th>Intended Population</th>
<th>Organization of Criteria</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Beers’ (2015)     | US                | Delphi consensus; 13 experts | All elderly with exception of hospice and palliative care | Drug lists of which to avoid organized by drug class | 2015 update included renal dosing, drug-drug interactions, alternative therapy | -Includes older drugs not used in European countries  
- Harm from some drugs may be minor compared to meds not on the list |
| STOPP-START (2008)| Ireland, UK       | Delphi consensus; 18 experts | All elderly aged ≥ 75 years | STOPP: 65 criteria  
START: 22 criteria | Concise; includes drug-drug and drug disease interactions; includes drug duplication; includes under prescribing | -Does not suggest safer alternatives  
- May overestimate PIMs |
How to Use the American Geriatrics Society 2015 Beers Criteria—A Guide for Patients, Clinicians, Health Systems, and Payors

<table>
<thead>
<tr>
<th>Therapeutic Category/Drug(s)</th>
<th>Rationale</th>
<th>Recommendation</th>
<th>Quality of Evidence</th>
<th>Strength of Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphal blockers</td>
<td>High risk of orthostatic hypotension; not recommended as routine treatment for hypertension; alternative agents have superior risk-benefit profile.</td>
<td>Avoid use as an antihypertensive.</td>
<td>Moderate</td>
<td>Strong</td>
</tr>
</tbody>
</table>

↑ Read this to understand why drug is considered potentially inappropriate in older adults, e.g., frequent adverse events, risk/benefit profile, other guideline recommendations.

↑ Read this to understand in what circumstances the drug is considered a potentially inappropriate medication. In this example, use of an alphal-blocker for routine treatment of hypertension is considered potentially inappropriate. Use for other conditions such as lower urinary tract symptoms in men is not considered potentially inappropriate according to this criterion. However, this does not automatically make the medication appropriate; usual clinical judgment applies.

↑ Quality of evidence on which recommendation is based. The Beers panel rated evidence based on a structured process.

↑ Strength of recommendation. The Beers panel decided this based on the anticipated balance of risks and benefits from the medication.
STOPP-START examples

STOPP

• Loop diuretic for ankle edema, no clinical signs of HF (no evidence of efficacy, compression hosiery more appropriate)

• PPI for peptic ulcer disease at full therapeutic dose for > 8 wks (dose reduction or earlier discontinuation indicated)

START

• Antihypertensives for SBP consistently > 160 mmHg

• ACE inhibitor for chronic heart failure or diabetes with nephropathy

• Antiplatelet therapy in patients with coexisting CVD risk factors present (stroke, PVD, CAD) if not contraindicated.

Deprescribing
Poll Question #1

What is deprescribing?

1. When the physician or provider decides which medications to discontinue and then advises the patient.
2. Withholding appropriate medications for diseases to reduce burden.
3. The systematic process of identifying, and discontinuing medications based on specific patient parameters.
Clinical Review & Education

Special Communication | LESS IS MORE

Reducing Inappropriate Polypharmacy
The Process of Deprescribing

Ian A. Scott, MBBS, FRACP, MHA, MEd; Sarah N. Hilmer, MBBS, FRACP, PhD; Emily Reeve, BPharm (Hons), PhD; Kathleen Potter, PhD, FRACGP; David Le Couteur, PhD, FRACP; Deborah Rigby, BPharm, GradDipClinPharm, FASCP, FACP, FAICD; Danijela Gnijdic, PhD; Christopher B. Del Mar, MB, BChir, MD, FRACGP; Elizabeth E. Roughead, PhD; Amy Page, M ClinPharm; Jesse Jansen, MPysch, PhD; Jennifer H. Martin, MB, ChB, FRACP, PhD

Scott, IA et al. JAMA Intern Med. 2015;175(5):827-834
Definition of Deprescribing:

• “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.”

Scott, IA et al. JAMA Intern Med. 2015;175(5):827-834
Elements of Deprescribing

- It is a positive, patient centered intervention
- It involves inherent uncertainties
- It requires shared decision making, informed patient consent and close monitoring of effects

***Note these are the same principles that apply when drug therapy is initiated***

Scott, IA et al. *JAMA Intern Med.* 2015;175(5):827-834
When and In Whom to Consider Deprescribing

- Patients who present with a new symptom or clinical syndrome suggestive of adverse drug effect (i.e. falls, confusion, fatigue)
- End-stage disease, terminal illness, dementia, extreme frailty
- Receiving high-risk drugs or combinations
- Receiving preventative drugs in scenarios associated with no increased disease risk despite drug cessation
  - Bisphosphonates
  - Statins

Poll Question

#2
Which of the following patients should be considered for deprescribing?

1. An 87 year old female enrolled in palliative care with end stage COPD who continues on simvastatin for primary prevention.

2. A 50 year old male who is on Lantus, Novolog, Metformin for type 2 diabetes and lisinopril, amlodipine and HCTZ for well controlled hypertension.

3. A 45 year old female with history of fibromyalgia, depression and anxiety taking oxycodone, alprazolam and sertraline, duloxetine, gabapentin and buspirone.

4. Answers 1 & 3

5. All of the above
The Process of Deprescribing

**Step 1** Ascertain all drugs the patient is currently taking and the reasons for each one.

**Step 2** Consider overall risk of drug-induced harm in individual patients in determining the required intensity of deprescribing intervention.

**Step 3** Assess each drug in regard to its current or future benefit potential compared to current or future harm or burden potential.

**Step 4** Prioritize drugs for discontinuation that have the lowest benefit-harm ratio and lowest likelihood of adverse withdrawal reactions or disease rebound syndromes.

**Step 5** Implement a discontinuation regimen and monitor patients closely for improvement in outcomes or onset of adverse effects.

Scott, IA et al. *JAMA Intern Med.* 2015;175(5):827-834
Step 1:Ascertain all drugs patient is taking and indications…

• Perform medication reconciliation
  • Ask patient and caregivers to bring all medications (RX, OTC, herbal products)
  • Ask patients about any regularly prescribed drugs not being taken and if so why not (e.g. too expensive, adverse effects)

Scott, IA et al. JAMA Intern Med. 2015;175(5):827-834
Step 2: Consider overall risk of drug-induced harm...

• **Medication-related factors:**
  • Number of medications (single most important predictor)
  • Use of “high-risk” drugs
  • Past or current toxicity

• **Patient factors:**
  • Age > 80 years
  • Cognitive impairment
  • Multiple comorbidities
  • Substance abuse
  • Multiple prescribers
  • Past or current nonadherence

Scott, IA et al. *JAMA Intern Med.* 2015;175(5):827-834
Step 3: Assess each drug for its current or future risk/benefit ratio…

- Assess each drug for its eligibility to be discontinued:
  - No valid indication
  - Part of prescribing cascade
  - Actual or potential harm > potential benefit
  - Disease (and/or symptom) control is ineffective
  - Drug is imposing unacceptable treatment burden (drug-induced adverse effects)
  - Preventative drug is unlikely to confer any patient-important benefit over the patient’s remaining lifespan
    - Consider NNT and NNH

Scott, IA et al. *JAMA Intern Med.* 2015;175(5):827-834
Step 4: Prioritize drugs for discontinuation

• Deciding the order of discontinuation of drugs may depend on:
  • Those with the greatest harm and least benefit
  • Those easiest to discontinue, i.e. lowest likelihood of withdrawal reactions or disease rebound
  • Those that the patient is most willing to discontinue first

Scott, IA et al. JAMA Intern Med. 2015;175(5):827-834
Algorithm for Deciding Order and Mode in Which Drug Use Could Be Discontinued

1. No benefit
   Significant toxicity OR no indication OR obvious contraindication OR cascade prescribing?
   - Yes
   - No

2. Harm outweighs benefit
   Adverse effects outweigh symptomatic effect or potential future benefits?
   - Yes
   - No

3. Symptom or disease drugs
   Symptoms stable or nonexistent?
   - Yes
   - No

4. Preventive drugs
   Potential benefit unlikely to be realized because of limited life expectancy?
   - Yes
   - No

Continue drug therapy

Withdrawal symptoms or disease recurrence likely if drug therapy discontinued?
- Yes
- No

Taper dose and monitor for adverse drug withdrawal effects

Symptoms stable or nonexistent?
- Yes
- No

Discontinue drug therapy

Restart drug therapy
Step 5: Implement and Monitor Drug Discontinuation Regimen

- Explain and agree with patient on management plan
- Stop 1 drug at a time so that harms and benefits can be attributed to specific drugs and rectified
- Wean patients off drugs more likely to cause adverse withdrawal effects.
- Communicate plan and contingencies to all health professionals and caregivers
- Fully document the reasons for, and outcomes of deprescribing

Scott, IA et al. *JAMA Intern Med.* 2015;175(5):827-834
The Evidence of Deprescribing

- Drug Withdrawal Trials
- Systematic review of 31 withdrawal trials (15 RCT, 16 observational)
  - Patients 65 and older
  - Multiple drug categories: antihypertensives, psychotropics, benzodiazepines
  - Discontinued without harm in 20-100% of pts
  - Reduction in falls and improvement in cognitive and psychomotor function within psychotropic and benzodiazepine groups
- Replicated in more recent review

The Evidence of Deprescribing

• Another review of 9 randomized trials demonstrated the safety of withdrawing antipsychotic agents used for behavioral symptoms of dementia.

  • 80% of participants with dementia were able to safely stop antipsychotics

The Evidence of Deprescribing

- Australian National Blood Pressure Study
  - Not designed as a deprescribing trial
  - Found that 37% of participants remained normotensive 1 year after drug withdrawal

Barriers to Deprescribing

- Clinical complexity
- Time constraints
- Multiple prescribers
- Incomplete information
- Ambiguous or changing goals of care
- Uncertainty about benefits/harms of continuing or stopping medications
- “More is better” philosophy
Patient Case

- SR is 74 year old WF
  - MTM consult for “polypharmacy”
  - Presents with her husband who is primary caretaker
  - Requires assistance with most of her activities of daily living but can still feed and toilet herself.
- PMH: PD, LBD, Depression, Anxiety, Insomnia, Afib on anticoagulation with apixaban, GERD, IBS-D, OA, Anemia, Hyperlipidemia and Osteopenia
Step 1: Ascertain all drugs...

- **Current medication list**
  - Benefiber powder* (Free Text Entry) 1 TEASPOON by mouth every 48 hours
  - Caltrate 600+D Plus Minerals tablet 1 tablet by mouth one time daily
  - Carbidopa-levodopa [SINEMET CR] 25-100 mg tablet sustained release 1 tablet by mouth every bedtime
  - Deep Sleep* (Free Text Entry) 2 capsules by mouth every bedtime.
    - Contains poppy, valerian root, passionflower, chamomile, lemon balm, fresh oat, orange peel
  - Donepezil 10 mg tablet 1 tablet by mouth one time daily
  - Apixaban 5 mg tablet 1 tablet by mouth two times a day
  - Ferrous sulfate 325 mg (65 mg iron) tablet 1 tablet by mouth every 48 hours
  - Furosemide 40 mg tablet 1 tablet by mouth one time daily
  - Gabapentin 400 mg capsule 1 capsule by mouth four times a day
  - Klor-Con M20 20 mEq tablet sustained release 1 tablet by mouth one time daily
  - Namenda XR 28 mg capsule SP, ER 24H 1 capsule by mouth one time daily
  - Pantoprazole 40 mg tablet enteric coated 1 tablet by mouth one time daily
  - PreserVision AREDS tablet 1 tablet by mouth two times a day
  - Rytary 23.75-95 mg capsule sustained release 3 capsules by mouth four times a day
  - Sertraline 100 mg tablet 1 tablet by mouth two times a day
  - Simvastatin 20 mg tablet 1 tablet by mouth one time daily
  - Trazodone 100 mg tablet one-quarter tablet by mouth every bedtime
  - Tylenol Arthritis Pain 650 mg tablet sustained release 2 tablets by mouth 2-3 times daily
  - Viberzi tablet 75 mg 1 tablet by mouth one time daily.
Step 2: Consider overall risk of drug-induced harm…

- **Medication-related factors:**
  - 19 medications
  - High risk medication – apixaban

- **Patient-related factors:**
  - Advanced age
  - Cognitive Impairment
Step 3: Assess each drug for its current or future risk/benefit ratio…

• No valid indication:
  • eye vitamins, furosemide for LE edema in absence of HF

• Part of prescribing cascade
  • Potassium secondary to furosemide

• Actual or potential harm > potential benefit
  • CHADS-2 score = 0 (Annual risk of stroke 1.9%)
  • HAS-BLED score = 1 (Low risk 1.1% per 100 patient years)
  • High risk of falls due to advanced PD
  • Using gabapentin off label for anxiety – potential increase in falls risk, cognition issues, edema
Step 3: Assess each drug for its current or future risk/benefit ratio…(continued)

- Disease control is ineffective
  - Are donepezil and memantine needed/helping at this stage in disease?
  - Gabapentin not effective at controlling anxiety
  - Is herbal supplement helping with anxiety and sleep?

- Drug is imposing unacceptable treatment burden
  - Taking several medications 3 to 4 times daily

- Preventative drug therapy
  - Is statin therapy necessary?
Poll Question

#3
What would your anticoagulation recommendations be for this patient?

1. Change apixaban to warfarin as it is safer for this patient.
2. Consider discontinuation of anticoagulation and replace with low dose aspirin.
3. No change needed as patient is tolerating apixaban and denies any problems with falls.
Step 4 and 5: Prioritize drugs for discontinuation and implement plan…

- **Recommendations:**
  - Discontinue: eye vitamins, furosemide, potassium and ferrous sulfate
  - Consider discontinuation of: apixaban and change to aspirin, donepezil and memantine, trazodone and change to melatonin
  - Psychiatry evaluation for further recommendations for managing anxiety more effectively.

- Communication with patient and care team critical in ensuring recommendations are noted
The Role of the Pharmacist in Deprescribing

• We are the specialty to do this!
  • Deprescribing requires thoughtful consideration of many drug related factors.
  • We can help overcome important barriers to deprescribing. We have the time to meet with patients and caregivers – 60 minute dedicated appointment slots. We could be point of contact for patients if problems arise.
  • More research is needed in guideline development for deprescribing and pharmacists should be vital members of the team.
Resources for Deprescribing

- http://deprescribing.org
- http://medstopper.com
- http://www.polypharmacy.scot.nhs.uk
- http://www.aspiringuide.com
Questions & Discussion