Geriatric Scalpel: Improving Lives of Older Adults Through Rational Deprescribing

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Disclosure Information

• I receive royalties from Johns Hopkins Press for a book I co-authored with Dr. George Grossberg and will be receiving royalties from Cambridge University Press for the just published 2nd edition of our book titled Psychiatric Consultation in Long-Term Care: A Guide for Healthcare Professionals.
• I have no other financial relationships with commercial interests to disclose.
• I do not intend to discuss off-label uses of any medications or devices

Objectives

• Discuss potential clinical benefits of rational deprescribing
• Describe the concept and process of rational deprescribing
• Using real-life cases, discuss practical strategies to make rational deprescribing a routine and effective intervention in the care of older adults and long-term care residents
William Osler (1849-1919)

- “One of the first duties of the physician is to educate the masses not to take (inappropriate) medicine.”
- “Imperative drugging – the ordering of medicine in any and every malady (i.e., polypharmacy) – is no longer regarded as the chief function of the doctor.”

Role of Consultant Pharmacists

- Identify potentially inappropriate prescriptions (PIP) / medications.
- Educate team regarding why these are inappropriate.
- Suggest use of non-pharmacological interventions in place of PIP.
- Suggest safer medication alternatives (prescription and OTC) if available and non-pharmacological interventions not feasible.
- Educate team regarding Strength of Recommendations for safer medication alternatives.

Key Potential benefits of rational deprescribing

- Improved quality of life
  - Improved mood, anxiety, and energy levels
  - Improved cognition and alertness
  - Improved sleep and appetite
  - Improved functional abilities (capacity for activities of daily living)
  - Reduced pain
- In LTC, increased time for staff to “hang out” with residents
- Reduced risk of delirium
- Reduced risk of accelerated cognitive and functional decline
- Reduced mortality
- Reduced falls and falls-related injuries (e.g. hip fracture)
- Reduced risk of strokes
- Reduced bleeding episodes
- Reduced hospitalization risk

Strength of Recommendation Taxonomy (SORT)

- Quality of Evidence
- Strength of Recommendation


Strength of Recommendation (SOR)

- Strength of Recommendation
  - A: Good Quality Patient Oriented Evidence.
    - Avoid medications that are inappropriate for older adults because of adverse effects, lack of efficacy and or potential for interactions
  - B: Inconsistent or limited quality Patient Oriented Evidence
    - Utilize resources such as START/STOPP and the Beers Criteria to help you decide where to begin the deprescribing process
  - C: Consensus, disease oriented evidence, usual practice, case series.
    - Discontinue medications when the harm outweighs benefits in the context of patient's care goals, life expectancy, and/or preferences


GRADE

- Grade A: High confidence that evidence reflects true effects and further research is unlikely to change the confidence level
- Grade B: Moderate confidence and further research may change the confidence level
- Grade C: Low confidence and further research is likely to change the confidence level

What is Rational Deprescribing?

- It is a multi-disciplinary team process of identifying medications that are inappropriate for the patient under consideration and discontinuing them.
- Key Team Members: Prescriber (primary care physician, nurse practitioner, physician assistant, psychiatrist), pharmacist, nurse (includes clinical nurse specialist), social worker, patient and patient’s family member.
- Process: 5-step process described in JAMA Internal Medicine 2015 by Scott et al.

5 Steps of Rational Deprescribing

- Step 1: Ascertain all medications (includes as needed, supplements, herbal remedies, “shared” medications [some family members may share some meds] and their indications.
- Step 2: Assess overall risk of harm and required intensity of rational deprescribing.
- Step 3: Assess each medication for eligibility for discontinuation.
- Step 4: Prioritize medications for discontinuation.
- Step 5: Implement and monitor rational deprescribing.

- I would add a 6th step:
- Step 6: Ascertain meaning of the medications to the patient and or their family members
- For teaching purposes, I would add a 7th step: Assess SOR for each medication

Criteria of Potentially Inappropriate Prescriptions (PIP)

- Quality of life worse due to adverse effects despite beneficial effects (includes adverse drug drug and drug disease interactions).
- Medications given without evidence of their benefits for a specific condition.
- Medications do not conform to standard of care.
- Medications do not conform to clinical practice guidelines.
- Lack of clear benefits.
- Not in keeping with goals of care.
- Duplicative therapy.

**Significant Adverse effects.**

- Antipsychotics and parkinsonism, weight gain, hyperglycemia, hyperlipidemia, falls, dysphagia, lethargy, excessive daytime sleepiness (EDS).
- Cholinesterase inhibitors and urinary incontinence, anorexia, loss of weight, insomnia
- Benzodiazepines and falls, cognitive impairment, EDS.
- Benzodiazepine receptor agonists (zolpidem, eszopiclone, zaleplon) and falls, cognitive impairment.
- Tertiary tricyclic antidepressants (e.g. doxepin, amitriptyline, imipramine) and constipation, cognitive impairment, glaucoma
- SSRIs and hyponatremia, anticoagulants, NSAIDs, h/o bleeding, anorexia, weight loss, insomnia.
- Psychotropics that prolong QTc in patients with prolonged QTc
- Antihypertensives in patient having consistently low BP.

**Medications given without evidence of their benefits for a specific condition.**

- Olanzapine or Quetiapine used for insomnia in hospitalized elderly.
- Cholinesterase inhibitors for Fronto-Temporal Dementias.
- Antidepressant for Adjustment disorder / Normal situational depression.
- Valproate given to “stabilize mood” in patients with dementia
  - Reference: NICE 2015  
- Megestrol acetate to stimulate appetite and promote weight gain
- Colace for constipation
- Muscle relaxants for muscle spasms and pain management
- Hydroxyzine for itching or anxiety or allergies

**Medications do not conform to standard of care.**

- Lamotrigine given for hypomanic / manic symptoms.
- Brexpiprazole for recurrent major depression
- Most examples of duplicative therapy.
Medications do not conform to clinical practice guidelines.

- Antipsychotics given for mild to moderate agitation in persons with dementia.
- Antidepressants (includes trazodone) given to a patient for depressive symptoms in the context of hypomanic/manic symptoms (mixed symptoms).

Lack of clear benefits.

- Cholinesterase inhibitors when anticholinergic burden is 2 or more) using the anticholinergic burden scale.
- The clinician is not sure if antidepressants have helped.
- Overuse of Gabapentin and or Pregabalin for chronic pain

Not in keeping with goals of care.

- Cholinesterase inhibitors and memantine in patients receiving hospice care.
- Statins in patients receiving hospice care.
Duplicative therapy.

- Two or more antidepressants (e.g., sertraline and mirtazapine, escitalopram plus trazodone plus mirtazapine).
- Two or more antipsychotics (e.g., olanzapine and risperidone, paliperidone and quetiapine).
- Gabapentin and pregabalin
- Aspirin and warfarin (without an H2-blocker or a PPI)
- Long term use of clopidogrel and aspirin

Hypoglycemics

- Metformin: May cause fatigue, loss of appetite and weight loss and these may be mistaken for depression. Metformin should be avoided in patients with advanced dementia due to limited life expectancy, avoided in patients with GFR less than 30, avoided in patients having poor oral intake and or significant unintentional weight loss.
- We are over-treating DM in older adults with limited life expectancy (5 years or less).

Criteria of PIP

- Beers Criteria
- STOPP Criteria (Screening Tool of Older Persons’ potentially inappropriate Prescriptions)
  - Better addresses drug drug interactions and therapeutic class duplications compared to Beers list
- START Criteria (Screening Tool to Alert doctors to the Right Treatment)
### Other Criteria for PIP
- Anticholinergic burden
- QTc prolongation
- Renal dosing
- Drug-Drug interaction (includes supplements, herbal remedies)
- Adjusting for Liver disease
- Adjusting for pharmacogenomic testing results

### Other Tools
- Medication Appropriateness Index (MAI)
- Fit FOR The Aged Criteria (FORTA)

### Over-arching Goal of All Interventions
- We’ve been wrong about what our job is in medicine. We think our job is to ensure health and survival. But really it is larger than that. It is to enable well-being.
  ~ Atul Gawande (2014,p.259)
Strength of Recommendation for Rational Deprescription

• Avoid medications that are inappropriate for older adults because of adverse effects, lack of efficacy, and/or potential for interactions. SOR: A
• Discontinue medications when the harms outweigh the benefits in the context of the patient’s care goals, life expectancy, and/or preferences. SOR: C
• Utilize resources such as STOPP/START criteria and Beers criteria to help you decide where to begin the deprescribing process. SOR: B

Practical Strategies

• Make Rational Deprescribing a routine part of clinical care.
• Identify and overcome systems barriers (e.g. pharmacists not given respect, time, and support).
• Recognize the complexity and strive to improve knowledge of medications prescribed through pharmacist-led team and staff education and training.
• Quality improvement projects should initially focus on high-risk medication categories: antipsychotics, opioids, benzodiazepines, sedative-hypnotics, hypoglycemics, anticoagulants, anticonvulsants, PPIs
• Allow technology to improve implementation and effectiveness

Case 1

• New patient seen in a LTC facility for follow-up for depression. Recent hospitalization after ground level fall.
• 71yo male with past history significant for right MCA ischemic stroke, well controlled type 2 diabetes mellitus, hypertension, depression, benign prostatic hypertrophy, chronic low back pain and knee osteoarthritis
• BP consistently low: 105/60
**Medications**

- Amlodipine 10mg 1 tab po daily
- Aspirin 81mg PO daily
- Atorvastatin 40 mg 1 tab po daily
- Buspirone 15mg 1 tab po BID
- Clonidine 0.2mg 1 tab PO TID
- Clopidogrel 75mg 1 tab po daily
- Duloxetine 60 mg 1 cap po daily
- Gabapentin 100mg 2 tabs po TID
- Glimepiride 2mg 1 tab po daily
- Lisinopril 20 mg 2 tabs po daily
- Metoprolol 50mg 1 tab PO BID
- Metformin 1000mg 1 tab po BID
- Omeprazole 20 mg po daily
- Oxycodone ER 10mg 1 tab po BID
- Oxycodone 15mg 1 tab po q4hours pm pain
- Senna 8.6mg 1 tab po BID
- Tenazosin 10mg 1 tab po QHS

**Rational Deprescribing**

- Buspirone discontinued as patient does not have Generalized Anxiety Disorder
- Slow taper and discontinuation of Opioids (with PCP involvement) as patient has Chronic Non-Cancer Pain and is willing to begin comprehensive non-opioid pain management strategies (ATMAN approach: Acetaminophen and Anticonvulsants; Topical agents / injections; Mindfulness based stress reduction [MBRS] and Cognitive Behavioral Therapy [CBT]; Antidepressants [SNRIs]; Non-drug strategies [e.g. physical therapy, exercise, hot and cold compresses, music, posture]).
- Glimepiride discontinued as HbA1c 7.4.
- Clonidine tapered and discontinued due to low blood pressure and it may exacerbate depression
- Docusate discontinued due to lack of evidence for its efficacy in this population

**3 month follow up**

- Depression improved
- Pain improved
- Cognition improved
- No falls
Case 2

- 83 y/o woman recently admitted for urosepsis, developed delirium in the hospital, seen in a LTC facility in the presence of daughter for evaluation of depression as her mother is less verbal, refusing to take medications, and having memory problems.
- Patient is wheel-chair bound due to multi-morbidity (hip fracture, obesity, chronic pain, coronary artery disease, mild dementia), dependent on most ADLs.
- Labs: low platelets (120), TSH 8.2, AST 45, HbA1c 5.7.

Case 2 - Medications

- metformin 500 mg bid
- atorvastatin 20 mg daily
- potassium Chloride 10 Meq daily
- clopidroge 75 mg daily.
- furosemide 20 mg daily : on hold since she was discharged from hospital.
- magnesium oxide 400 mg daily
- sertraline 100 mg daily
- atenolol 100 mg daily, on hold since she was discharge from hospital
- levothyroxine 150 mg daily
- pregabalin 75 mg daily

Case 2 – Medications contd

- isosorbide mononitrate 30 mg bid.
- on hold since she was discharged from hospital
- tramadol 50 mg q 6h as needed
- omega-3 fish oil 1 g bid
- hydrocodone-acetaminophen 5-500 mg q 8h as needed
- albuterol 90 MCG/ACT IN AERS q 6h as needed
- alendronate 70 mg weekly since 2001
- pantoprazole 40 mg daily
- aspirin 81 mg Daily
- ferrous sulfate 325 mg tid
Rational Deprescribing

- Metformin discontinued as HbA1c less than 7
- Isosorbide discontinued as no chest pain for many years, stable coronary artery disease
- Tramadol discontinued as patient responds better to hydrocodone prn (used on average twice a week or less for osteoarthritis)
- Omega 3 discontinued to reduce pill burden, minimal benefits.
- Pantoprazole discontinued as GERD stable for many years, no current symptoms
- Alendronate discontinued as patient taking it since 2001.
- Furosemide discontinued as no evidence of heart failure, ejection fraction 55%, no ankle edema
- Potassium discontinued as no need after furosemide discontinued

Rational Deprescribing contd.

- Ferrous sulfate discontinued as hemoglobin normal, normal MCV
- Sertraline slowly tapered and discontinued as patient has adjustment disorder with mild depressive symptoms, slowly resolving delirium, underlying vascular dementia
  (Individualized Pleasant Activity Schedule initiated to address depressive symptoms)
- Pregabalin discontinued as no indication (no neuropathy, chronic pain related to osteoarthritis)
- Magnesium discontinued as no indication and pantoprazole may have caused low magnesium

3 month follow up

- Depression improved
- Cognition improved
- No hospitalization
- Daughter delighted with care
Case 3

- 78-year old woman with history of persistent depressive disorder, chronic congestive heart failure, in advanced stage of dementia probable Alzheimer’s type is having “agitation” in the afternoons and evenings per nursing home staff, not eating much, refusing medications off and on and yelling occasionally that staff is trying to “poison me”.

Case 3 - medications

- Aspirin 81mg daily
- Vitamin D 2000 units daily
- Donepezil 5mg daily
- Furosemide 20mg daily
- Digoxin 0.125mg daily
- Levothyroxine 100 mcg daily
- Melatonin 3mg daily at bedtime
- Metformin 500mg twice daily
- Metoprolol 12.5mg twice daily
- Nortriptyline 25mg daily at bedtime
- Paroxetine 20mg daily
- Acetaminophen 500mg three times daily
- Pantoprazole 20mg twice daily
- Risperidone 0.5mg daily at bedtime
- Tramadol 50mg as needed every 6 hours

Case 3 – Rational Deprescribing

- Aspirin discontinued to reduce pill burden which may improve medication intake of key medications and goals of care are palliative with focus on comfort rather than extending life
- Vitamin D discontinued as vitamin D levels normal
- Nortriptyline decreased to 20mg daily for 30 days, then 10mg daily for 30 days, then discontinued
- Donepezil discontinued as it will be not useful due to significant anticholinergic burden
- Metformin discontinued as it may cause loss of appetite and HbA1c 7.4.
- Prn tramadol discontinued as it was being used for management of agitation and patient did not seem to be in pain.
Case 3 – Rational Prescribing

- Paroxetine was not discontinued because daughter was convinced that combination of paroxetine and nortriptyline had improved her mother’s chronic low grade depression considerably and reduction of both these medications may cause exacerbation of her depression (patient had very mild depressive symptoms on and off). Daughter was explained the serious risks associated with their use including anticholinergic toxicity associated with both the agents and cardiac risks associated with nortriptyline.
- Psychiatrist felt that daughter’s concerns were reasonable. Also, over time, daughter may develop more confidence in the psychiatrist and be more comfortable with slow taper of paroxetine and switching to another SSRI such as citalopram, escitalopram or sertraline or an SNRI (e.g., duloxetine)

Follow Up Report

- At 3 months: patient continues to have mild to moderate agitation but is eating better, is “manageable” per staff with psychosocial environmental approaches.
- Risperidone is reduced to 0.25mg daily in afternoon for 4 weeks, then discontinued.
- At 4 months, patient shows no worsening of “agitation” and family is happy with care received. Family and team agree that although one could reduce paroxetine due to its anticholinergic effect and may see some cognitive benefits, due to history of low grade depression, ongoing mild anxiety and “agitation”, it is best not to reduce paroxetine.

Person Centered Approach

- “We’re caught in a transitional phase. However miserable the old system has been, we are all experts at it. We know the dance moves. With this new way, in which we together try to figure out how to face mortality and preserve the fiber of a meaningful life with its loyalties and individuality, we are plodding novices. We are going through a societal learning curve, one person at a time.”
Three Key References

Two More Relevant References

Recommended Resources
Recommended Resources

- 2016 CANMAT Guidelines for Major Depression (mentions that duloxetine, mirtazapine and nortriptyline have better evidence than other antidepressants in older adults).
- 2016 VA Guidelines for PTSD (mentions that sertraline, venlafaxine, paroxetine and fluoxetine have best evidence)
  - https://www.healthquality.va.gov/guidelines/MH/ptsd/
- Website: www.grossbergdesallongtermcare.com

Web Resources

- Deprescribing.org Website developed by Dr. Barbara Farrell and Dr. Cara Tannenbaum (pharmacist and physician) to share information and research about deprescribing approaches to reducing harm caused by medications to older adults
- Anticholinergic Burden Scale
- Deprescribing Guidelines for the Elderly by the Ontario Pharmacy Research Collaboration (known as OPEN):
  http://www.open-pharmacy-research.ca/research-projects/emerging-services/deprescribing-guidelines/

Bottom Line

- “We seek to work towards transforming our culture to one honoring human dignity...Let’s be companions together on this journey.”
Thank you for your attention