

Medication Safety Considerations in Older Adults

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Age-Friendly Healthcare in a COVID-19 World

Learning Objectives

At the end of the session, the participants will be able to:

- Discuss how to assess the risk-benefit of prescribing medications in older adults.
- List which classes of medications potentially impact mentation and mobility in older adults.
- Briefly describe medication safety and appropriateness tools (2019 AGS Beers Criteria) and how they impact the deprescribing process.

Age-Friendly Healthcare in a COVID-19 World

Disclosures

Dr. Beier has no actual or potentially relevant conflict of interests in relation to this activity.

Age-Friendly Healthcare in a COVID-19 World

*Startling Medication Use Trends in
Older Adults!!*



Reckoning with Medication Use

- 42% take 5 or more prescription medications a day
 - 20% take 10 drugs or more
- Including OTC medications and supplements
 - 67% take 5 meds or more
- In 2004, 40% of NH residents used ≥ 9 meds/daily!
- In 2018, 5 million older adults sought medical attention for ADEs

Med use a two-edged sword!

ADEs: adverse drug events

<https://lowinstitute.org/medication-overload-how-the-drive-to-prescribe-is-harming-older-americans/>

And The Beat Goes On.....



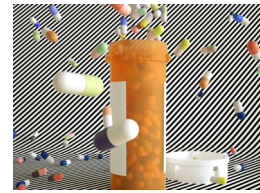
LESS IS MORE
Polypharmacy—Time to Get Beyond Numbers

*“Numbers are not the enemy.
Unnecessary, ineffective, and
harmful prescribing is.”*

Beier MT. Vigilance of Drug-Drug Interactions to Mitigate ADRs: Front and Center for Pharmacists. The Senior Care Pharmacist. 2020 Aug;35(8):336-337.
JAMA Intern Med. 2016;176(4):482-483.

Risk Factors in Older Adults

- Polypharmacy is pervasive!
 - Multiple prescribers
 - Multiple pharmacies
 - Fragmented care
 - More therapeutic options
- Special populations
 - Critically ill, older, complex patients
 - Patients on psychiatric and/or pain medications
 - Advanced dementia in nursing homes (NHs)
 - During transitions of care (TOC)



RISK FACTORS FOR ADEs

6 or more concurrent chronic conditions

12 or more doses of drugs/day

9 or more medications

Prior adverse drug event

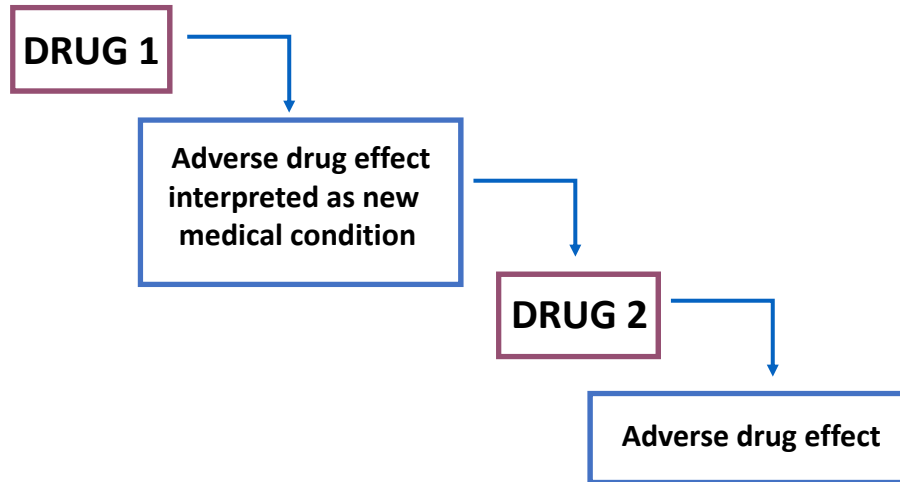
Low body weight or low BMI

Age 85 or older

Estimated CrCl < 50 mL/min

ADEs: adverse drug events

The Prescribing Cascade: More relevant than ever!



Rochon PA, Gurwitz JH. *BMJ* 315: 1096-99, 1997

Medications Affecting Mentation

- Anticholinergics (Table 7 Beers)
 - Antihistamines
 - Incontinence meds (Ditropan, tolterodine)
 - Antiparkinsonian agents (benztropine)
- Antidepressants (paroxetine)
- Antipsychotics
- Opioids
- Tramadol
- Gabapentin and Pregabalin
- Benzodiazepines
- Epilepsy meds

2019 American Geriatrics Society Beers Criteria Update Expert Panel. *J Am Geriatr Soc.* 2019;67(4):674-94.

Medications Affecting Mobility

- Antidepressants
- Antipsychotics
- Insomnia Meds (Z Drugs: zolpidem, etc)
- Opioids
- Tramadol
- Gabapentin and Pregabalin
- Benzodiazepines
- Epilepsy meds
- Antihypertensives

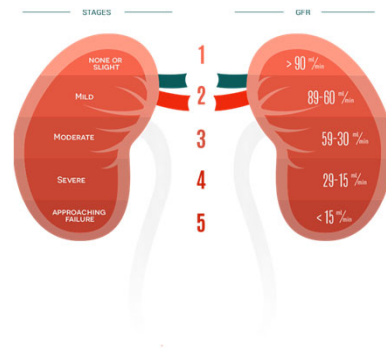
2019 American Geriatrics Society Beers Criteria Update Expert Panel. J Am Geriatr Soc. 2019;67(4):674-94.

Beer's Criteria 2019 Update Highlights

- Aspirin for **primary prevention** of cardiovascular disease
 - bleeding increases with age
- Caution regarding dabigatran and rivaroxaban (anticoagulants)
 - Increased bleeding risk?
 - Apixaban best choice?
- Several warfarin drug-drug interactions profiled
- **Dosage reductions in renal insufficiency (new table)**

Chronic Kidney Disease (CKD)

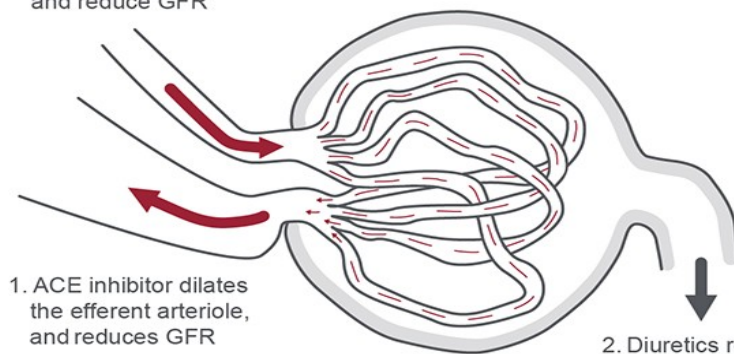
- 10% of North Americans have CKD
 - 25% of individuals over the age of 65 have CKD
- Diabetes and hypertension are the 2 main causes



<https://kidneyfailure.risk.com/>
https://www.cdc.gov/kidneydisease/pdf/2019_National-Chronic-Kidney-Disease-Fact-Sheet.pdf

The Triple Whammy: Kidney Damage

3. NSAIDs constrict blood flow into the glomerulus via the afferent arteriole and reduce GFR



1. ACE inhibitor dilates the efferent arteriole, and reduces GFR

2. Diuretics reduce plasma volume and GFR

<https://www.hps.com.au/knowledge-centre/clinical-articles/the-triple-whammy/>

Beers Criteria

Drug(s)	Rationale	Recommendation	Quality of Evidence	Strength of Recommendation
Nitrofurantoin	Potential for pulmonary toxicity, hepatotoxicity, and peripheral neuropathy, especially with long-term use; safer alternatives available	Avoid in individuals with CrCl <30 mL/min or for long-term suppression	Low	Strong

2019 American Geriatrics Society Beers Criteria Update Expert Panel. J Am Geriatr Soc. 2019;67(4):674-94.

Beers Criteria

Drug(s)	Rationale	Recommendation	Quality of Evidence	Strength of Recommendation
Digoxin for first-line treatment of atrial fibrillation or heart failure	Decreased renal clearance of digoxin may lead to increased risk of toxic effects; further dose reduction may be necessary in those with stage 4 or 5 CKD	Avoid dosages >0.125 mg/day	Moderate	Strong
Trimethoprim-sulfamethoxazole	Increased risk of hyperkalemia when used concurrently with an ACEI or ARB in presence of decreased CrCl	Use with caution in patients on ACEI or ARB and decreased CrCl	Low	Strong

ARB: angiotensin receptor blocker
ACE: angiotensin converting enzyme inhibitor

2019 American Geriatrics Society Beers Criteria Update Expert Panel. J Am Geriatr Soc. 2019;67(4):674-94.

Beers Criteria


Disease or Syndrome	Drug(s)	Rationale	Recommendation	Quality of Evidence	Strength of Recommendation
CKD Stage 4 or higher (CrCl <30mL/min)	NSAIDs (non-COX and COX selective, oral and parenteral, nonacetylated salicylates)	May increase risk of acute kidney injury and further decline of renal function	Avoid	Moderate	Strong

2019 American Geriatrics Society Beers Criteria Update Expert Panel. J Am Geriatr Soc. 2019;67(4):674-94.

Analgesics for Management of Pain: Chronic Kidney Disease

Recommend	Use with Caution	Do NOT Use
Acetaminophen	Tramadol	NSAIDs
Hydromorphone	Oxycodone	Codeine
Methadone	TCAs	Morphine
Buprenorphine		Meperidine
Fentanyl		
Alfentanil		
Gabapentin		
Pregabalin		

Age-Friendly Healthcare in a COVID-19 World



**Gabapentin
Abuse Rate
40-65%**

✓ Polysubstance Overdose


✓ Current or former opioid abuse

Smith RV. Addiction 2016;111:1160-74.
<https://www.deprescribingnetwork.ca/patient-handouts?rq=gabapentin>
<https://www.fda.gov/drugs/fda-drug-safety-podcasts/fda-warns-about-serious-breathing-problems-seizure-and-nerve-pain-medicines-gabapentin-neurontin>

Benzodiazepines + Opioids

Individuals with prescribed benzodiazepines and opioids experienced:

1.66 times more emergency department visits in the past year



Yarborough BJH Pain Med. 2019;20(6):1148-1155.

Tramadol Adverse Effects

- ✓ Sedation
- ✓ Falls
- ✓ Serotonin Syndrome
- ✓ Seizures
- ✓ Hypoglycemia
- ✓ Death

A New Paradigm?

OBSERVATIONS

REALITY CHECK

Is your mum on drugs?

When "de-prescribing" may be the best medicine

Ray Moynihan *author, journalist, and conjoint lecturer, University of Newcastle, Australia*



BMJ 2011;343:d518

When To Consider Deprescribing?

- **Course Complete**

- No indication
- Resolution of problem

- **Not Safe!**

- Prescribing cascade
- Beers Criteria meds/high risk/PIMs

- **Not Effective**

- Persistent symptoms
- Unknown benefit
- Drugs for prevention?

- **Not Aligned with Goals**

- Palliative care
- End of life care
- Extreme frailty
- **Personal preferences (what matters most)**

PIMs: potentially inappropriate medications

BMJ 2016;353:i2893 doi: 10.1136/bmj.i2893

ORIGINAL INVESTIGATION

LESS IS MORE

Feasibility Study of a Systematic Approach for Discontinuation of Multiple Medications in Older Adults

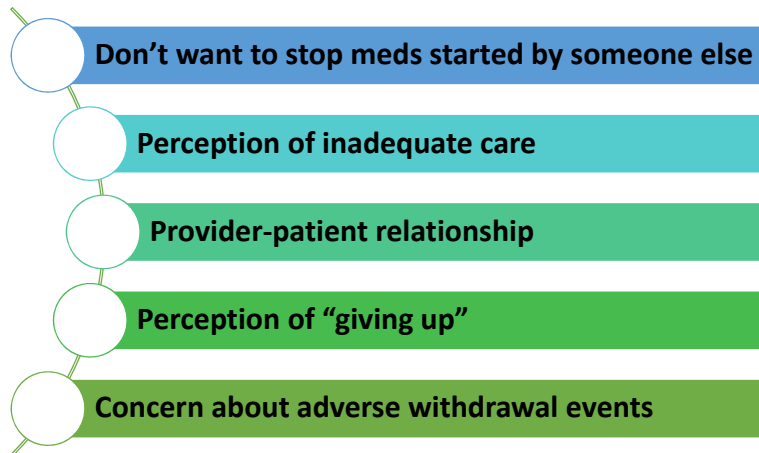
Addressing Polypharmacy

Doron Garfinkel, MD; Derelle Mangin, MBChB

Arch Intern Med. 2010;170(18):1648-1654

- **Over half of drugs discontinued**
- **4/5 didn't have to be restarted**
- **80% reported a global improvement in health**
- **No adverse events from the discontinuations**

Barriers to Stopping Medications



Gnjidic D, et al. *Clin Geriatr Med* 2012;28:237-253.
Sloane and Zimmerman: *JAMDA* 2018

Potential Deprescribing Benefits

- **MOBILITY:** Less falls
- **MENTATION:** Improvement, less delirium
- **QUALITY OF LIFE:** Improvement
- **HARMS?:** Little or none if done with mindfulness, one at a time



Deprescribing rainbow



A rainbow.....symbolizes that deprescribing should be recognized as a **positive intervention** aimed at **improving outcomes** important to the patient, and that the relationship between these factors is fluent and may change over time.

BMC Geriatrics 2018;18:295.

 **Choosing
Wisely**[®]

An initiative of the ABIM Foundation

www.choosingwisely.org

ASCP Choosing Wisely Statements

Intent and Substance

Statements that are:

- Evidence-based
- Written with “don’t use or don’t recommend or don’t prescribe or avoid”
- Emphasis on:
 - prescribing cascade, goals of care, time-to-benefit (TTB), transitions of care
 - **Major Focus on DDIs**
 - Focus on opioids and combinations with other CNS depressants
 - Focus on anticholinergic burden
 - Risk-benefit of tramadol

Clinical Pearls for Medication Safety

- Medication Adherence
- Reconcile meds (TOC opportunities)
- Consolidate/Streamline meds
- Enhanced Vigilance:
 - Identify Additive Adverse Drug Effects
 - Identify Possible Prescribing Cascade
 - Identify Potential Drug-drug Interactions
- **Construct evidence-based case for deprescribing in concert with goals**
 - **What Matters Most**



The Long and Winding Road



- Stop/Taper
- Switch
- Adjust
- Monitor

Thank You!

