Polypharmacy and Deprescribing in Older Adults
Oregon Geriatrics Society
October 9, 2016
Arthur Hayward, MD, MBA
Internist and Geriatrician, Kaiser Permanente Northwest

Session Objectives

1. Identify examples of polypharmacy
2. Recognize the particular risks of polypharmacy in the elderly
3. Apply deprescribing algorithms
Case Histories

1. 45 yo ♂ on opioids for chronic pancreatitis reports his wife died unexpectedly.
2. 80 yo retired ♂ math teacher with dementia has become a “zombie” after entering a nursing home.
3. 74 yo ♂ diabetic in ED for falls has HGBA1C of 6%.
4. Wife says her 79 yo mate won’t take all his medicines.

“Man has an inborn craving for medicine. Heroic dosing for several generations has given his tissues a thirst for drugs. The desire to take medicine is one feature which distinguishes man, the animal, from his fellow creatures.”

William Osler, 1849 - 1919
Brief History of Polypharmacy

- Drugs perform miracles
- Drugs are widely prescribed
- Drugs are too widely prescribed
- Harms result
- Deprescribing reduces polypharmacy

Outline

1. Signs of polypharmacy
2. Altered risk/benefit in older adults
3. Solution: Deprescribe?
4. Signs of the deprescribing era
5. Benefits of deprescribing
1. Signs of polypharmacy

- Reflex prescribing
- Pharmaceutical hype
- Increased volume, costs, ADEs
- Backlash

Reflex Prescribing

- Failure to consider alternatives
- Misapplying guidelines
- Mistaking ADEs for new conditions

Non-pharma treatment alternatives

<table>
<thead>
<tr>
<th>For...</th>
<th>A. Not...</th>
<th>B. But...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back pain</td>
<td>NSAIDs</td>
<td>Cold and hot compresses</td>
</tr>
<tr>
<td>Insomnia</td>
<td>Zolpidem</td>
<td>Sleep hygiene</td>
</tr>
<tr>
<td>Urinary urgency</td>
<td>Ditropan</td>
<td>Pelvic floor exercises</td>
</tr>
<tr>
<td>Depression</td>
<td>SSRI's</td>
<td>Cognitive behavioral Rx</td>
</tr>
<tr>
<td>Dementia “behaviors”</td>
<td>Antipsychotics</td>
<td>Environmental change</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Benzo’s</td>
<td>Stress reduction activity</td>
</tr>
</tbody>
</table>

Adapted from KP Colorado Clinical Practice Guideline “Polypharmacy in the Elderly”

Statin use in adults older than 79
The Drug Cascade

A vicious Drug-ADE Cycle

Pharmaceutical hype

- Product promotion
- Choice of product
- Narcotic epidemic

"Who is responsible for the pain pill epidemic?" in The New Yorker 11/8/2013.
From: Pharmaceutical Industry–Sponsored Meals and Physician Prescribing Patterns for Medicare Beneficiaries

Target branded drugs as a percentage of all filled prescriptions in the drug class.

Opioid (over)use

Rates of Opioid Overdose Deaths, Sales, and Treatment Admissions, United States, 1999–2010

Americans consume 90% of the world supply of prescription opioids and 99% of the world’s hydrocodone!
Narcotic drugs more lethal than autos

Overdose Deaths Total Nearly 50,000 in 2014

Fatal drug overdoses reached a new high in 2014, killing nearly 50,000 Americans, more than were killed in auto accidents, according to data from the Centers for Disease Control and Prevention. Twice as many Americans died from drug overdoses in 2014 as in 2000. Most of the deaths involved heroin or prescription narcotic painkillers like OxyContin. These drugs accounted for 28,647 deaths in 2014, or 61 percent of the overdose deaths. Deaths from heroin and narcotic painkillers increased 14 percent last year, to nine per 100,000 from 7.9, according to the C.D.C. Men and women of all races and ethnic groups and nearly all ages were affected by drug overdoses, but the national numbers were affected mainly by increases in deaths in 14 states: Alabama, Georgia, Illinois, Maryland, Massachusetts, Michigan, New Hampshire.


Pharma Promotion of Opioid Use

- Opioids have been aggressively and misleadingly marketed to physicians
- Federal bodies and state medical boards received funds to promote pain relief
- Experts with pharma connections have rallied to criticize CDC proposed guidelines

1 Van Zee A. The promotion and marketing of oxycontin: commercial triumph, public health tragedy. Am J Public Health 2009;99:221-227

2 "Who is responsible for the pain pill epidemic?" in The New Yorker 11/8/2013.

3 AP wire services 1/31/2016 report on Interagency Pain Research Coordinating Committee
Deaths from prescription drug overdose have quadrupled since 2000.

Opioids can worsen pain and functioning.

Risks increase with dose increases.

Use of heroin and illicitly produced Fentanyl has increased.

CDC recommends non-pharmacologic approaches.

CDC Guideline with comment NEJM March 15, 2016 DOI: 10.1056/NEJMp1515917

CDC guideline for prescribing opioids for chronic pain — United States, 2016. MMWR Recomm Rep 2016;65(RR-1:1-49

Increased numbers of prescriptions (4 B/y)

Increased ADEs

Increased drug costs ($259B) ($329.1B)
% of US adults reporting use of any and of > 5 drugs per day during preceding 30 days by age

Findings:
• Use of any med 84.1 → 87.7%
• Use of >/= 5 meds 30.6 → 35.8%
• Use of dietary supplements 51.8 → 63.7%
• Risk of potential major drug-drug interaction 8.4 → 15.1%

Robin Hood Profiteering

*What about selling drugs to the rich and keeping the money for ourselves?*

The New Yorker January 4, 2016

How does epinephrine become a $1B drug?

EpiPen’s Price Soars, and So Does Mylan Executives’ Pay

Heather Bresch, Chief Executive, Mylan Pharmaceuticals

Sunday Business Section
New York Times
September 4, 2016
The “Other” Drug Problem

The Oregonian
LIVING HEALTH
Friday, Sept. 9, 2016

Signs of polypharmacy
Consumer mistrust and backlash
2. Risk/Benefit increases in adults $\geq$ 65

- Changes in metabolism and pharmacokinetics/dynamics
- More conditions/ more guidelines/ more prescribers
- More side effects¹ / “drug cascade” to treat side effects
- Less time to benefit
- Expense of polypharmacy (estimated $\sim$ $50B/y in US)²
- Multiple meds: inconvenience, burden, misery


3. Solution: Deprescribe?

Deprescribing is the process of tapering or stopping drugs, aimed at minimizing polypharmacy and improving patient outcomes.¹

--- Ian Scott, et al, Brisbane, Australia

- Pharmacists play a leading role.
- Deprescribing algorithms exist¹²³

Barriers to Deprescribing

Survey results of PCPs:

- Lack of knowledge
  (39% not aware tight glucose control harms older adults)
- Fear of bad report card (42%)
- Fear of legal liability (25%)
- Not enough time to discuss (30%)

doi:10.1001/jamainternmed.2015.5950

LESS IS MORE

Feasibility Study of a Systematic Approach for Discontinuation of Multiple Medications in Older Adults
Garfinkel D, Mangin D
Arch Intern Med. 2010;170(18):1648-1654

<table>
<thead>
<tr>
<th>Protocol- indicated stop of 311 meds in 64 of 70 patients included</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure (re-started for original indication)</td>
<td>2%</td>
</tr>
<tr>
<td>Success (consented and not re-started)</td>
<td>81%</td>
</tr>
<tr>
<td>Compared to matched cohort</td>
<td></td>
</tr>
<tr>
<td>Global improvement in health</td>
<td>88%</td>
</tr>
<tr>
<td>Mortality benefit</td>
<td>14%</td>
</tr>
</tbody>
</table>
Improving drug therapy in elderly patients--the Good Palliative-Geriatric Practice algorithm

Deprescribing simplified

1. **Stop**
   - Drugs that are unnecessary
   - Duplicates

2. **Shift**
   - Safer for riskier
   - Less costly alternative
   - Non-drug treatment

3. **Simplify**
   - Dosing schedule
   - Substitute one drug for two
Simplified Geriatric Dosing

From The New Yorker, November, 2015

Med Reconciliation and Polypharmacy

Hajjar ER, Caffiero AC, Hanlon JT. Polypharmacy in Elderly Patients. Am J of Geriatric Pharmacother 2007; 5(4); 345-51
Inside KP

- KPCO publishes polypharmacy intranet page
- KPGA addresses too-low HGBA1C and non-benzo sedatives
- KPNW’s med rec aims to reduce polypharmacy
- DUM (Drug Utilization Management) program reverses trend in opioid prescribing
- MTM (Medication Therapy Management) stops unnecessary meds

Rita L. Hui, PharmD, MS; Brian D. Yamada, PharmD; Michele M. Spence, PhD; Erwin W. Jeong, PharmD; and James Chan, PharmD, PhD. Impact of a Medicare MTM Program: Evaluating Clinical and Economic Outcomes. *Am J Manag Care*. 2014;20(2):e43-e51

MTM and Comprehensive Medication Review at KP
Associated with
- Lowered mortality
- Less hospitalization
4. Signs of the deprescribing era

- Beers list, Choosing Wisely, Direct-to-consumer media efforts
- More published medical literature, algorithms
- CMMS incentives
- A cultural shift


2015 Beers List Criteria Update

- 1991 Criteria originated by Mark Beers
- 2011 AGS (Am Geriatrics Society) charged with review and updates
- 2015 Revision¹
  - Alternatives proposed²
  - Serious Drug-Drug interactions itemized
  - Drugs requiring renal failure dosing are listed
  - Shifts in emphasis result from literature review

¹ DOI: 10.1111/jgs.13702  JAGS, October 2015
² DOI: 10.1111/jgs.13807
Polypharmacy in preventive cardiology¹

Problem: Millions on CVD drugs* though proof of benefit lacking.
- Short-term study results are extrapolated over decades.
- Results from young-old subjects are extrapolated to old-old.
- We have scant evidence on outcomes of drug withdrawals.
- Modern clinical practice differs from that when trials were conducted.
- Projections of benefits assume hazards are constant over time.
- Old-old adults may prefer different outcomes.

* Aspirin, beta-blockers, statins, ACE inhibitors

How long should these drugs be continued?


5. Benefits of Deprescribing

- Simplify care
- Reduce ADEs
- Reduce hospitalization
- Improve adherence
- Reduce costs
- Save lives
Case History Discussion

1. 45 yo on opioids for chronic pancreatitis reports unexpected death of his spouse.
2. 80 yo retired math teacher with dementia becomes a “zombie” after entering a NH.
3. 74 yo female diabetic in ED for falls has HGBA1C of 6%.
4. Wife says her 79 yo won’t take all his medicines.
Bibliography

- InsidePatientCare.com Empowering Community Pharmacists as Health Consultants: Polypharmacy by Rebecca J. Mahan, PHARMD, CGP
- Garfield D, Morgan D. Feasibility of a systems approach... Arch Intern Med. 2010;170(6):548-554
- BMJ 2012;345:e680 – Overtreatment – Is the USA’s problem ours too?

Tools and collaborators

- http://www.meditopper.com
- https://clm.kp.org/wp-content/plugins/DD/CO/resultrefund/klc/co/cpg/cpg/polypolypharmacy.html?categoryId=Geriatrics&doctype=Guidelines&doctypeType=Clinical&location=AdultCare&memberage=Adult%20Care&contentName=Polypharmacy%20In%20Elderly

How to deprescribe

1. Ascertain all drugs the patient is currently taking and the reasons for each one
2. Consider overall risk of drug-induced harm in individual patients in determining the required intensity of deprescribing intervention
3. Assess each drug in regard to its current or future benefit potential compared with current or future harm or burden potential
4. Prioritize drugs for discontinuation that have the lowest benefit-harm ratio and lowest likelihood of adverse withdrawal reactions or disease rebound syndromes
5. Implement a discontinuation regimen and monitor patients closely for improvement in outcomes or onset of adverse effects.