Polypharmacy and Elders

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13% of the US population is age 65+

Age ≥ 65 years
13%

Age ≤ 64 years
87%

Age 65+ account for 34% of prescription medication use

Age ≥ 65 years
34%

Age ≤ 64 years
66%
Let’s Not Forget Over the Counter Medications

- 30% of all OTC medications are consumed by age 65+ \(^1\)
What Is Polypharmacy?

• No consensus on the definition
• Generally refers to the use of a large number of medications
  • Five or more
  • Medications may not be clinically indicated
Polypharmacy In Action

One week's worth of medications brought in by a clinic client

- 10 prescription medications
- 19 OTC supplements
Consequences of Polypharmacy

• Increased risk of adverse drug reaction
• Increased risk of drug/drug and drug/disease interactions
• Increased risk of non-adherence
• Increased health care $$
• Potential for under treatment
• Functional decline$^2$
• Increased risk of falls$^2$
Elders and Medication

• Age related changes in pharmacokinetics
  • Absorption, Distribution, Metabolism, Excretion
    • Decreased metabolized by the kidneys/liver
    • Decreased first pass clearance in the liver
      • Warfarin, benzodiazepines, opiates
    • Decrease serum protein
    • Change in distribution due to decreased ratio of lean body weight to fat

• Comorbidities
  • Disease states requiring multiple medications to treat: hypertension, heart failure, diabetes
Meet our patient, Mr. JH, age 73

• Referred for a geriatric assessment
  • Polypharmacy
  • Debility
  • Memory Issues
  • Difficulty driving/ADL’s
  • Two stays at rehab facility within the last 2 months
Recent History

- ER visit for chest pain with admission and CABG (10/17/15)
- Stay at rehab facility (10/27/15)
- Visit to provider for extreme lethargy and inability to stay awake (11/30/15)
- Fell at home (12/07/2015)
- ER visit for generalized weakness/acute bronchitis with admission (12/08/15)
- Stay at rehab facility
- Home
Conditions and Symptoms

- History of MI with CABG 10/2015
- Hyperlipidemia
- Hypertension
- COPD
- DM2
- BPH
- Chronic cough/bronchitis
- CKD, Stage 3
- Memory loss
- Fatigue
- GERD
- Gout
- Headaches
- Irritable bowel syndrome
- Bipolar
- Osteoarthritis
- Vitamin D deficiency
- ED / Testosterone deficiency
The following medications were in a pill box

- Depakote ER 250 mg: 2 tabs at bedtime
- Trazodone 100 mg: 1 tab at bedtime
- Mirtazapine 15 mg: 1 tab at bedtime
- Fluoxetine 40 mg: 1 cap 2 times daily
- Metoprolol tartrate 25 mg: 1 tab 2 times daily
- Metformin 1000 mg: 1 tab 2 times daily
- Glipizide 5 mg: 1 tab 1 time daily
- Allopurinol 300 mg: 1 tab 1 time daily
- Famotidine 20 mg: 1 tab 1 time daily
- Cholestyramine: 1 packet daily
Medications - continued

• Respiratory Medications
  • ProAir: no directions
  • Ventolin: no directions
  • Proventil: no directions
  • Combivent Respimat: 1 puff 4 times daily as needed
  • Flovent Diskus 50 mcg: 1 puff daily
  • Flonase Nasal Spray: no directions

• As Needed Medications
  • Lomotil: 1 to 2 tabs every 4 hours as needed
  • Alprazolam 0.5: 1 tab 3 times daily as needed
  • Oxycodone/APAP 5/325 mg: 1 to 2 tabs every 4 hours as needed
  • NTG 0.4 mg SL: 1 tab at onset of chest pain, may repeat every 5 minutes, call 911 after 15 minutes if pain persists
  • Aspirin 81 mg
  • Loratadine 10 mg
Medications - continued

• As Needed Medications
  • Fish Oil
  • Vitamin D 1000 IU
  • Glucosamine
  • Multivitamin

• OTC Medications Taken Routinely
  • Guafenesin 400 mg: as needed for cough
  • Loperamide 2 mg: currently taking 2 tabs with lunch, 2 with dinner and 1 to 2 tabs at bedtime
Medications - continued

• Miscellaneous Medications
  • Oxybutynin 5 mg: 1 tab 2 times daily
  • Oxybutynin 5 mg: ½ tab 2 times daily
  • Ranitidine 150 mg: 1 tab 2 times daily
  • Lisinopril 10 mg: 1 tab 1 time daily
  • Depakote ER 500 mg: 2 tabs at bedtime
  • Allopurinol 100 mg: 2 tabs 1 time daily
Pharmacotherapy Assessment

• Recent CABG and CAD with discharge orders for:
  • Aspirin 81 mg daily
  • Lipitor 40 mg daily
  • Plavix 75 mg daily
  • Lisinopril 10 mg daily

• Diagnosis of COPD, chronic bronchitis and recent hospitalization for acute bronchitis
  • Not using scheduled preventative inhaler because he didn’t know which one he should use so didn’t use any of them. Was only familiar with Advair.
Pharmacotherapy Assessment

• Depakote
  • Depakote ER 250 mg: 2 at bedtime
  • Depakote ER 500 mg: 2 at bedtime

• Oxybutynin
  • Oxybutynin 5 mg: 1 tab 2 times daily
  • Oxybutynin 5 mg: ½ tab 2 times daily

• Allopurinol
  • Allopurinol 300 mg: 1 tab daily
  • Allopurinol 100 mg: 2 tabs daily

• Ranitidine and Famotidine
  • Unsure what he should be taking
Food For Thought

- Patient’s often don’t know what medications are for
  - Diagnoses get added inappropriately
  - Prescribers can help to alleviate this by putting an indication in the directions
- Medications get changed due to facility formularies
- Patients may not always be completely honest about medication adherence or they cannot remember that they are non adherent
- Ask about adverse drug reactions when a patient presents with a new problem
- Communication with the patient and other prescribers is critical
Tools for Evaluating Medications in Elders

- Beers Criteria
  - Medications that are potentially inappropriate for elders

- STOPP – Screening Tool of Older Persons’ potentially inappropriate Prescriptions

- START – Screening Tool to Alert doctors to Right Treatment
References
