Patient Case – Self-Care in Geriatrics

- Jean Smith, the daughter of Luella Jones - a long time customer, is in to pick up refills for her mother.
- Mrs. Smith has just moved into an assisted living center due to declining ability to care for herself.
- The move was precipitated by a recent hospital stay complicated by delirium. She has also had two falls in her home and is unable to climb the stairs to her upstairs bedroom and full bath.
- She asks for a recommendation for something for her mother’s “sour stomach” and “trouble sleeping”.

Patient Case – Self-Care in Geriatrics

- List the first three (3) questions you would ask Ms. Jones?
- What are the typical GI issues or complaints to consider in this situation?
- What are the typical issues to consider regarding insomnia?
Patient Case – Self-Care in Geriatrics

• What are three (3) typical health issues you’ve seen in the elderly?
• What other issues related to OTCs or other self-care options are troublesome in the elderly?

Patient Case – Self-Care in Geriatrics

• Name two OTC medications that are especially troublesome and potentially inappropriate when used in the elderly in a situation like this?

Objectives

• List common physiologic and pathologic changes in the elderly that impact self-care decisions
• Predict the changing needs and potential risks for an elderly individual demonstrating increasing frailty as related to nonprescription products and other self-care therapies
• Identify potential drug therapy problems associated with nonprescription product use in a typical patient profile or case
The Pharmacist’s Role in Self-Care

- Consumers expect pharmacist assistance in decisions and information
  - Interpret treatment options
  - Assess initial and ongoing treatment
- Components of Self-care
  - Self diagnosis
  - Self medication
  - Self monitoring
- Goal is Pharmacist-Assisted Self-Care
  - “Pharm-assisted Care”

Geriatric Issues in Self-Care

- Increased risk
  - Pharmacokinetics
  - Pharmacodynamics
  - Polypharmacy
- Geriatric syndromes
  - Inadequate or missing treatments
  - Unnecessary treatments
  - Inappropriate treatments

Assessing Elderly Problems

- Consider health status, beliefs and problems
  - As a generation
  - As a cohort
  - As a culture
  - As a community
  - As an individual
Self-Care Issues in the Elderly

Medication Use in Advanced Age

- Distinctive geriatric ages and stages
  - Old
  - Elderly
  - Frail elderly
- Assessing aging status:
  - Chronologic vs. physiologic vs. pathologic
  - Significant changes in pharmacokinetics
  - Significant changes in pharmacodynamics

Age Related Changes in Pathology

Common Chronic Conditions

Medication Use in Advanced Age

- Potential drug therapy problems
  - Special needs in assessment, consultation, and management
  - Changing goals of therapy
  - Polypharmacy
  - Multiple prescribers
  - Inappropriate dosage forms
  - Potentially inappropriate drugs
  - Noncompliance
Medication Use Patterns in the Elderly

- Community-dwelling
  - 3-4 prescription and OTC medications
  - Nutritional and herbals push numbers higher
- Hospital inpatients
  - 5 medications on average
- Long Term Care
  - 7-8 prescription and OTC medications
  - >25% take 9 or more
  - 55-60% take unnecessary medications

Polypharmacy in the Elderly

- Over 80% take at least one medication per day
- Take > 30% of Rx medications
- Take 40 to 50% of all OTC medications
- Estimated 25% of Rx meds inappropriately selected or dosed
- Estimated 30% of medications considered unnecessary

Increased Risk of Adverse Events In Elderly

Adverse Drug Effect Treatment in U.S. Emergency Rooms

Figure: Estimated Annual Incidence of Adverse Drug Events Treated in U.S. Emergency Departments. The estimated annual incidence rate of adverse drug events treated in the U.S. emergency department was 2.4 per 1000 (95% CI: 1.7 – 3.0). Error bars represent 95% confidence intervals. Data are from the 2004-2005 National Electronic Injury Surveillance System-Cooperative Adverse Drug Event Surveillance project. From: Budnitz: JAMA, Volume 296(15), October 18, 2006, 1910-1916.
Factors Responsible for Increased ADRs in the Elderly

- Inappropriate prescribing
  - Beers List drugs
  - STOP List drugs
  - START List drugs
- Polypharmacy (Rx and OTC)
  - Drug-drug interactions
- Underuse
- Compliance/adherence issues
- Compartmented care
- Medication errors

The Aging I’s

- Immobility
- Isolation
- Incontinence
- Infection
- Inanition (malnutrition)
- Impaction
- Impaired senses
- Instability
- Intellect (cognition)
- Impotence
- Immunity
- Insomnia
- Iatrogenesis

Potentially Inappropriate Nonprescription Drugs in the Elderly Consumer

- Drugs with potent anticholinergic effects
- Drugs affecting cognitive ability
- Constipating drugs
- Laxative abuse
- Products used in place of definitive therapy
Anticholinergic Drugs

- Anticholinergics
  - Antiparkinsons Agents
  - Antispasmodics / GI agents
  - Medicinal
- Tricyclic Antidepressants
  - Amitriptyline
  - Desipramine
  - Doxepin
  - Clomipramine
- SSR Antidepressants
  - Paroxetine
- H2 blockers
  - Cimetidine
  - Ranitidine
- Cycloplegics
  - Cyclopentolate
  - Scopolamine
- “unexpected” products

- Antihistamines
  - Prescription
  - Nonprescription
- Antipsychotics
  - Clozapine
  - Thioridazine
  - Olanzapine
- Corticosteroids
  - Prednisolone/prednisone
- Antiarrhythmics
  - Disopyramide
- Theophylline
- Plants
  - Lupine beans
  - Jimson weed
  - Incontinence drugs
  - Oxybutynin-like products

“Unexpected” Anticholinergic Drugs

- Researchers evaluated the top 24 medications prescribed for the elderly (HCFA)
- In vitro assessment of anticholinergic effect of a standard concentration [10-8 M]
- Assayed by antimuscarinic radioreceptor assay
- Expressed in atropine equivalent (ng/ml)


Drugs with Detectable AntiAch Activity

Results: of the top 24 medications prescribed in the elderly, 13/24 exhibited detectable anticholinergic activity

- Cimetidine (0.86)
- Prednisolone (0.55)
- Theophylline (0.44)
- Digoxin (0.25)
- Nifedipine (0.22)
- Ranitidine (0.22)
- Furosemide (0.22)
- Isosorbide Din (0.15)
- Warfarin (0.12)
- Codeine (0.11)
- Dipyridamole (0.11)
- Triamterene (0.08)
- Captopril (0.02)

General Medical Patients

> 70 y/o

426 Patients

Inappropriate Diphenhydramine dose

27 (24%)

Received Diphenhydramine

114 (26.8%)

No Diphenhydramine

312 (73.2%)

Diphenhydramine dose

27 (24%)

Delirium Symptoms

47 (42%)

RR 1.7 (1.3-2.3)

Delirium Symptoms

75 (24%)


Anticholinergic Induced Delirium

Delirium Subtypes

Hyperactive – Mixed – Hypoactive

Hyperactive

Agitated

Disoriented

Delusional

Hallucinations

Adverse events

Injury - falls

Pulling on IVs and catheters

Hypoactive

Subdued

Quietly confused

Disoriented

Apathetic

Often unrecognized

Confused with depression, dementia, or pseudodementia

Typical Response to Anticholinergic Medications

Can’t See!

Can’t Pee!

Can’t Spit!

Can’t Defecate!

Can’t Think!

This Stinks!
Elderly Self-Care Syndromes Managed with OTC Therapies

- Arthritis and pain
- Gastrointestinal conditions
- Constipation
- Nutritional needs
- Respiratory conditions
- Insomnia
- Others

Arthritis and Pain Management

- Arthritis drugs of choice
  - Acetaminophen vs. NSAIDS
- Conditions of increased risk
  - Hepatic disease
  - Hypertension
  - Heart failure
  - Peptic ulcer disease
  - Alcohol/substance abuse

Changing OTC Environment

- Acetaminophen dosing in the news
  - Current recommendations
  - Elderly dose recommendation
  - Proposed limits

Gastrointestinal Conditions

- Constipation/diarrhea
- GERD
- Dyspepsia
- Possible comorbid conditions
  - Diabetes
  - Heart failure
  - Biliary disease
  - Chronic constipation
  - RX drug adverse effects
  - Masked conditions – UTI, cancer, MI, etc.
  - Others

Risks with common OTC GI drugs

- PPIs
  - Osteoporosis & fracture risk
  - Vitamin deficiencies
  - Infectious disease? (Pneumonia, c.dif)
- H2RAs – esp. cimetidine
  - Anticholinergic effects and CNS effects
  - Drug interactions
- Antacids – drug interactions & ADRs
- Laxatives and antidiarrheals

Constipation in the Elderly

- OTC options and issues
  - Assessing bowel function
  - Constipation vs. diarrhea
  - Remember – liquid stools often a symptom of severe constipation obstruction
  - Bulk/fiber laxatives
  - Stool softeners
  - Osmotic laxatives
  - Stimulant laxatives
Nutrition Issues in the Elderly

- Specialized needs
  - Calcium
  - Vitamin D
  - B12
  - Enteral supplements
  - Specialty vitamin products
  - Weight loss aids

Respiratory Conditions

- Cough and cold products
- Allergy products
- Cough suppressants and demulcents in COPD
- Herbal and homeopathic products

Insomnia

- Treat cause – not symptoms
- Options and risks
  - Diphenhydramine
  - Diphenhydramine combinations
    - APAP
    - Ibuprofen
    - Melatonin
Other Issues to Consider

- Dry skin and pressure ulcers
- Oral care and loss of dentition
- Fall risk / use of appliances and aids
- Adherence aids
- Vision and hearing loss (communication issues)
- Packaging and dosage forms

Use of Herbal Supplements

- Which commonly used herbal supplements interact with warfarin?
  - Garlic
  - Echinacea
  - Saw Palmetto
  - Ginkgo
  - Soy
  - Cranberry
  - Ginseng
  - Black Cohash
  - St. John’s Wort
  - Milk Thistle

Also: ginger, chondroitin/glucosamine, others

Using the MASTER Method to Reduce Risk

- Minimize Number of Drugs
- Alternatives Considered
- Start Low/Go Slow
- Titrate Therapy
- Educate All Involved
- Review Regularly
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- She asks for a recommendation for something for her mother’s “sour stomach” and “trouble sleeping”.
- Focus on the GI symptoms - What is the most likely cause? What else could it be?
- Focus on the insomnia? What is the most likely cause? What else could it be?
- What are your recommendations?