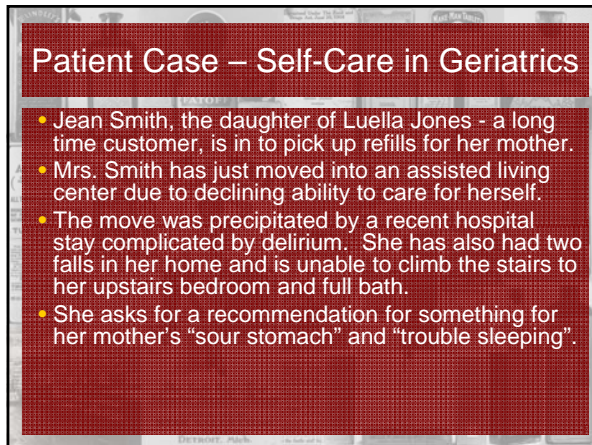




Self-Care Issues in the Elderly

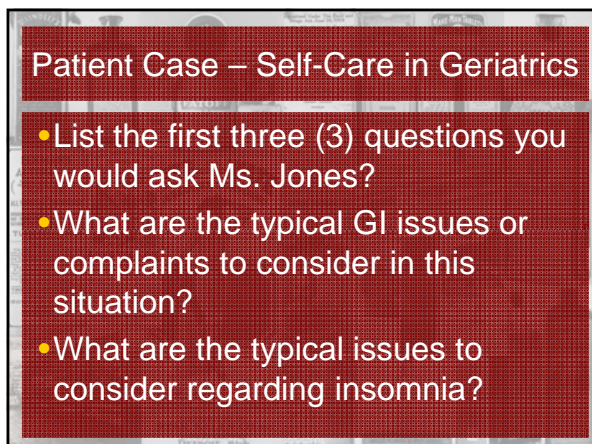


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Patient Case – Self-Care in Geriatrics

- 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



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

Condition	Men (%)	Women (%)
Heart Disease	37	28
Hypertension	48	55
Stroke	10	9
Emphysema	7	4
Asthma	8	10
Cancer	5	7
Any Cancer	24	18
Diabetes	20	15
Arthritis	45	55

Additional information for this indicator can be found at www.aarpstats.gov.

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

Patient Age, y	Estimated Annual Incidence per 1000 Individuals
0	2.4
5	2.4
10	2.4
15	2.4
20	2.4
25	2.4
30	2.4
35	2.4
40	2.4
45	2.4
50	2.4
55	2.4
60	2.4
65	2.4
70	3.0
75	4.0
80	5.0
85	6.0
90	7.0

Adverse Drug Effect Treatment in U.S. Emergency Rooms

Figure. Estimated Annual Incidence of Adverse Drug Events Treated in US Emergency Departments. The estimated annual population rate of adverse drug events (dotted line) is 2.4 per 1000 (95% confidence interval, 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, 1858-1866

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

<ul style="list-style-type: none">• Immobility• Isolation• Incontinence• Infection• Inanition (malnutrition)• Impaction• Impaired senses	<ul style="list-style-type: none">• Instability• Intellect (cognition)• Impotence• Immunity• Insomnia• Iatrogenesis
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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

<ul style="list-style-type: none"> • Anticholinergics <ul style="list-style-type: none"> - Antiparkinsons Agents - Antispasmodics / GI agents - Meclizine • Tricyclic Antidepressants <ul style="list-style-type: none"> - Amitriptyline - Imipramine - Doxepin - Clomipramine • SSRI Antidepressants <ul style="list-style-type: none"> - Paroxetine • H2 blockers <ul style="list-style-type: none"> - Cimetidine - Ranitidine • Cycloplegics <ul style="list-style-type: none"> - Cyclopentolate - Scopolamine • "unexpected" products 	<ul style="list-style-type: none"> • Antihistamines <ul style="list-style-type: none"> - Prescription - Nonprescription • Antipsychotics <ul style="list-style-type: none"> - Clozapine - Thioridazine - Olanzapine • Corticosteroids <ul style="list-style-type: none"> - Prednisolone/prednisone • Antiarrhythmics <ul style="list-style-type: none"> - Disopyramide • Theophylline • Plants <ul style="list-style-type: none"> - Lupine beans - Jimson weed • Incontinence drugs <ul style="list-style-type: none"> - Oxybutynin-like products
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"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)

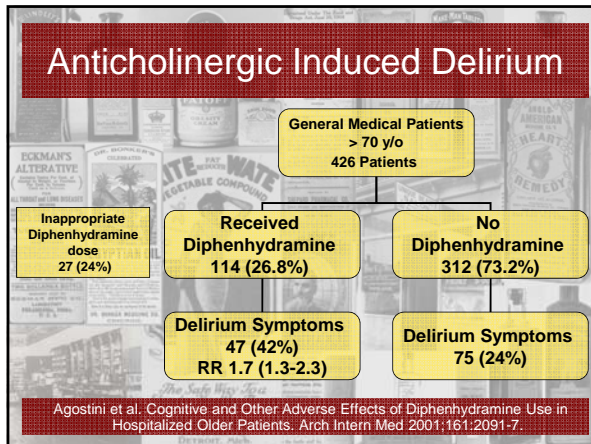
Tune et al *Am J Psychiatry* 1992;149:1393

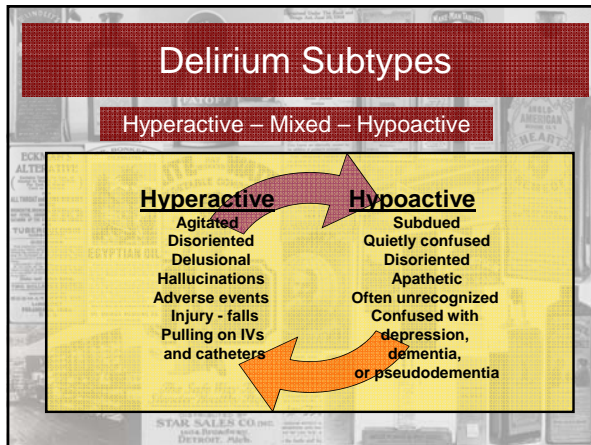
Drugs with Detectable AntiACh Activity

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

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

Tune, et al, *Am J Psychiatry* 1992;149:1393





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

Acetaminophen Overdose and Liver Injury — Background and Options for Reducing Injury

Richard L. Mendenhall

Acetaminophen is one of the most commonly used drugs in the United States for treating pain and fever. It is also the most commonly abused drug. The Food and Drug Administration (FDA) has issued several warnings about the drug, including a recent one that states that the drug can cause liver failure and death. The FDA has also issued a warning that the drug can cause liver failure and death in children who take too much of the drug. The FDA has also issued a warning that the drug can cause liver failure and death in children who take too much of the drug.

What is acetaminophen and what is it used for?

Acetaminophen is a pain reliever and fever reducer. It is used to treat pain and fever. It is also used to treat the pain of arthritis, osteoarthritis, and rheumatoid arthritis. It is also used to treat the pain of menstrual cramps, toothaches, and headaches. It is also used to treat the pain of sore throats, colds, and flu. It is also used to treat the pain of burns, cuts, and scrapes. It is also used to treat the pain of insect bites and stings.

How is acetaminophen used?

Acetaminophen is available in several forms, including tablets, capsules, and liquid. It is usually taken orally. The usual dose for adults is 325 to 650 mg every 4 to 6 hours. The maximum daily dose is 4,000 mg. For children, the usual dose is 10 to 15 mg per kilogram of body weight every 4 to 6 hours. The maximum daily dose is 75 mg per kilogram of body weight.

What are the risks of acetaminophen?

The most serious risk of acetaminophen is liver failure. Liver failure can occur even in people who take the drug as directed. It can also occur in people who take more than the recommended dose. Liver failure can be fatal. Other risks of acetaminophen include allergic reactions, stomach pain, and dizziness.

How can I reduce my risk of liver failure from acetaminophen?

To reduce your risk of liver failure from acetaminophen, you should:

- Take the drug exactly as directed.
- Do not take more than the recommended dose.
- Do not take the drug for more than 10 days unless your doctor tells you to.
- Do not drink alcohol while taking the drug.
- Tell your doctor if you are taking any other drugs.
- Tell your doctor if you have any liver disease or other health problems.

<http://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingsMaterials/Drugs/DrugSafetyandRiskManagement/AdvisoryCommittee/UCM164897.pdf>

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

Gastrointestinal Conditions

- 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 → • Cranberry
 - Echinacea → • Ginseng
 - • Saw Palmetto • Black Cohash
 - • Ginkgo → • St. John's Wort
 - • Soy • Milk Thistle

Also: ginger, chondroitin/glucosamine, others

Using the **MASTER** Method to Reduce Risk

- M**inimize Number of Drugs
- A**lternatives Considered
- S**tart Low/Go Slow
- T**itrate Therapy
- E**ducate All Involved
- R**eview Regularly

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Patient Case – Self-Care in Geriatrics

- 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?

