Ask the Geriatrician

This webcast is possible through the generous support of

Baptist Health Foundation
of San Antonio

---

Appreciation is also extended to:

- Methodist Healthcare Ministries Foundation
- San Antonio Area Foundation
- Pryor Trust
- Many other individuals and organizations who support the mission of mmLearn.org.
Want to ask a question or make a comment?

- Click on the ‘Ask Bubble’ at the top of the presentation screen to ask a question or make a comment.

- You may also phone in a question to (210) 264-7000.

Help! My Mom’s on Drugs!

_Elderly Persons and Medication Concerns_

Carrie Allen, PharmD, CGP
So much to say, so little time

Tree tops overview

Identifying common medication issues, side effects etc

More of a "be aware" presentation today

Please let us know if you’d like more in-depth & specific presentations later on

---

Ask The Pharmacist:
Why are Meds in the Elderly a Concern?

- Older adults typically take more RX than other age groups
- Older adults are at increased risk of serious adverse drug reactions
  - Age related changes: Absorption, distribution, metabolism, excretion
- POLYPHARMACY: Use of multiple medicines
  - Drug-drug interactions
  - Drug–disease interactions
  - Potentially inappropriate prescribing
  - Potentially inappropriate monitoring of drug therapy
Stats: Stand up and THINK

- 75% of older adults take one or more Rx drugs\(^1\)

- 25% of older adults take five or more meds on a regular basis (28% of women and 22% of men)\(^1\)

Stats: Stand up and THINK

- On average, patients 65 and older with two or more chronic conditions see **seven (7)** different physicians per year.\(^2\)

- Warfarin, insulin, and digoxin together account for over one-third of emergency department visits for adverse drug events among older adults.\(^2\)
Medication Issues In the Older Adult

• OFTEN drug reactions are written off as “normal aging” (slower gait, dizziness, incontinence, memory issues)

• We then may prescribe a medication to “fix” the side effect

• It can go on and on, causing a prescribing cascade and numerous medications

Treat elderly with the RESPECT all people deserve & use COMMON SENSE:

• Don’t you want to be on the lowest possible effective dose of your meds?

• Do you think it’s a good idea to take a sleeping pill EVERY night? Are you your best the next day?

• Does anyone want to be drugged into oblivion just to make other people’s lives easier?
Topics of Interest

- Beers list, herbals, supplements, samples, Tylenol (acetaminophen) overdose
- Psychotropics (EPS, irreversible reactions, falls, UTIs)
- Blood Pressure Meds (Common Side Effects)
- Multiple doctors, multiple meds, med conflicts & interactions
- Dangers of polypharmacy (don’t wait until 9+ meds to examine the drug regimen)

Beers List

- Drugs with unfavorable benefit/risk ratio or questionable efficacy in the elderly.
- The Beers list was originally constructed specifically for long-term care
- It has been revised for use in hospital, outpatient, managed care, and other settings.
Beers List

http://archinte.ama-assn.org/cgi/reprint/163/22/2716

- Some meds are of concern in all elderly patients
- Some meds are of concern only in certain situations
- Excessive dose
- Excessive duration
- Inappropriate drug combinations
- Drugs + disease states
  - Wellbutrin or Tramadol in patient with seizure disorder
  - Benadryl for sleep in dementia pt

Beers List

Age-related changes can increase the risk of frequency and severity side effects
- drug absorption
  - usually complete, often slower
  - patches and skinny folk
- drug metabolism
- drug distribution
- drug excretion
- use of multiple meds (polypharmacy)
Beers List: Risk/Benefit Ratio

SIDE EFFECTS of particular concern relate to changes in:

- Thinking
- Balance and coordination
- Changes in eyesight
- Feelings of dizziness & fatigue
- Fainting and unexpected drops in BP

ALL OF THESE turn can increase the risk of falls

Overall, elderly people who use Beer’s medications have a similar risk of falls whether they use the meds regularly or occasionally.

Beers List: Limited exposure safer?

A 2005 study in Archives of Internal Medicine found:

“Residents with INTERMITTENT [Beer’s list medication]exposures were at greater odds of death compared with those with no [Beer’s list medication] exposure.”

(OR, 1.89; P<.001)
Beers List

- Adverse drug effects can be nonspecific and be confused with “aging” e.g., confusion, lethargy, falls.

- Many of the drugs on the Beers lists are included because of sedative and anticholinergic adverse effects.

Beers List

Anticholinergic side effects: basically how most people feel on Benadryl
- dry mouth
- dry eyes/blurry vision
- unclear thinking
- slow moving
- urinary retention (can lead to UTIs)
- constipation
- slow moving
Beers List: OTC SLEEP AIDS

Anticholinergic side effects: basically how most people feel on Benadryl
- dry mouth
- dry eyes/blurry vision
- unclear thinking
- slow moving
- urinary retention
- constipation
- slow moving

FYI: OTC Sleep aides are almost 100% available with active ingredient of Benadryl (diphenhydramine) or other “sister” antihistamines

NOT RECOMMENDED FOR SLEEP IN ELDERLY

NEITHER are the OTC Herbal Sleep Aids (Valerian, Kava-Kava linked to liver failure)

Beers List

• This list is NOT an absolute prohibition against prescribing certain medications

• BUT list provides information on meds may be less appropriate in many people

• Consensus written by doctors, doctors know about it, some prescribing software has “stops” for it...yet it’s a ongoing area of concern
Beer’s List Pain Med Example: Darvocet & Darvon

- Darvocet and Darvon have lead to overdoses, they are thought to be more addictive than pain relieving
- Studies show pain relief only equal to that of acetaminophen (Tylenol)
- BUT side effects of narcotics such as constipation, confusion, sedation and addictive properties

Beer’s List: Darvocet & Darvon

FDA Review of Efficacy:

“there is evidence that propoxyphene possesses weak analgesic effects in patients with acute pain compared to placebo....”

Clearly, for pain relief, there may be better choices, especially in the long term pain patient
Tylenol

- Tylenol = OTC pain reliever, fever reducer
- Active ingredient is acetaminophen
- Acetaminophen is a long word
- Acetaminophen = APAP from here on out

Acetaminophen Overdose:
Especially an issue in combination products

- Per Tab APAP: Darvocet N 100 (650mg), Tylenol w/ codeine (300mg), Vicodin 5/500 (500mg), Vicodin ES 7.5/750 (750mg)

- Typical RX: Darvocet-N-100 take 2 tablets by mouth every 4 to 6 hours if needed for pain (> 3 doses = toxicity risk)

- Typical dose of APAP before toxicity is a concern
  - 4000 mg/24 h
  - 4 grams/ 24 h
  - ~12 tablets of 325mg APAP tabs/24h

- Toxic dose may be lower in some cases, not only about DOSE (liver issues, alcohol use, other medications)
Acetaminophen Overdose

- Hepatology (2005) did a study showing 50% of acute liver failure cases were related to APAP poisoning.

- FDA: “The association between acetaminophen and liver injury is not common knowledge.”

“Consumers are not sufficiently aware that acetaminophen can cause serious liver injury, and their perceptions may be influenced by the marketing of the products.”

Blood Pressure Meds & Digoxin

**Side Effects:**

- Sedating & Heart rate changes- exercise
  - (metoprolol, carvedilol, hydralazine, clonidine)
- Depression
  - (metoprolol, carvedilol, labetalol, clonidine)
- Dizziness
  - (nitrates, metoprolol, carvedilol, lisinopril, Diovan, clonidine, HCTZ, spironolactone)
- Confusion (all of the above)
Blood Pressure Meds & Digoxin

**Side Effects:**
- Change electrolytes
- Increase or decrease potassium, sodium
- Lisinopril, HCTZ, spironolactone, Lasix
- Man breasts
- 10% Spironolactone

**DIGOXIN:** The way it acts in the body, especially elderly or people with lower muscle mass, can lead to toxicity or decreased tolerance even when lab levels are within normal limits

**Symptoms of toxicity or decreased tolerance:**
- Confusion &/or irritability
- Irregular pulse &/or Heart Palpitations
- Loss of appetite, Nausea, vomiting, diarrhea
- Visual changes
  - Blurred Vision
  - Blind spots in vision
  - Changes in color perception
  - Halos or rings of light around objects (Van Gogh)
  - Seeing lights or bright spots
Blood Pressure Meds & Digoxin

Blood Pressure Meds

Some of these blood pressure med side effects could certainly be attributed to aging, right?

However, these are COMMON & WELL KNOWN side effects
Psychotropic Drugs

• Any medication capable of affecting the mind, emotions, and behavior.

• Some medications have both psychotropic and physical effects.
  • Some mood stabilizers are also anticonvulsant drugs used to treat epilepsy & can affect thinking, alertness.
  • Some antianxiety meds can affect short term memory (alarm clock story)
  • Some meds used for tremor can lower blood pressure and heart rate

Side Effects of Psychotropic Drugs

• Antipsychotics are popular these days:
  • Abilify
  • Risperdal
  • Seroquel
  • Haldol

People taking antipsychotic drugs are at risk of developing certain side effects known as extrapyramidal symptoms.

• These symptoms are movement related:
  • repetitive, involuntary muscle movements (such as lip smacking, blinking, grimacing)
  • undeniable urge to be moving constantly.
Psychotropics and Parkinson’s-like SX

- Antipsychotics can cause Parkinson’s-like symptoms days, weeks, months or years later:
  - Tremor
  - Rigidity
  - Bradykinesia (slow moving), shuffling gait
  - Hand movements: “air guitar”, pill rolling
  - Chewing or rabbit nose movements
  - Throat clearing, grunting
  - Anxiety like symptoms: restlessness, pacing, foot-taping, rocking motion, or shifting body weight from leg to leg

Side Effects of psychotrophic drugs

- The movement disorders (extrapyramidal symptoms) can become PERMANENT, these are called "Tardive dyskinesia"

- Symptoms usually appear during long-term treatment (often after several years, sometimes within months).

- Tardive symptoms are can be permanent even after the medication is stopped.
Movement Disorders and Meds

- EARLY DETECTION IS KEY - MAY REDUCE RISK OF MOVEMENT ISSUES BECOMING PERMANENT
- EPS could lead to a fatal condition
- Neuroleptic Malignant Syndrome (NMS) has been reported in association with antipsychotic drugs, in general.
- Signs of NMS could include high fever, muscle rigidity, altered mental status, and irregular/fast heart rate, blood pressure changes, fast or irregular heart rate, sweating, and unusual “fixed” eye movement.
- NMS is also PAINFUL (I asked)

---

Serotonin syndrome

- Serotonin is a hormone/neurotransmitter found in the brain, digestive tract, and platelets.
- It works in several areas of the body: transmitting nerve impulses, regulating moods, relieving depression & anxiety, regulating aggression, appetite, nausea pathways, metabolism, sleep cycle, body temperature regulation and sexuality.
- Serotonin pathways can go awry in life and therefore drugs are prescribed to increase serotonin; Selective serotonin re-uptake inhibitors (SSRIs), other meds and herbals can affect serotonin:
  - Celexa
  - Zoloft
  - Lexapro
  - Prozac
  - Effexor (SNRI)
  - St. John’s Wort
  - Migraine medications
- It’s GREAT, BUT you CAN have TOO MUCH = Serotonin Syndrome
Serotonin syndrome

• Serotonin syndrome can occur in someone exposed to a serotonergic drug or drug combination.

• We prescribe a lot of meds that can affect this pathway in the elderly

Serotonin syndrome:

• Severe rigidity

• Change in mental status

• Fever, sweating

• Gastrointestinal disturbances

• Large, involuntary movements (AKA Clonus, also a sign of stroke)

• Tremor, restlessness

Serotonin syndrome

• Serotonin syndrome can best be prevented by avoiding multidrug regimens (polypharmacy) whenever possible.

• Particularly
  • 2 or more antidepressants on the same person (even when mechanism is somewhat different)
  • Antidepressants and migraine relief medications
  • Antidepressants and herbals like St. Johns Wort
  • Antidepressants and some anti-nausea medications
Med Related Psychosis in Parkinson’s disease

- Hallucinations, delusions, paranoia, reckless behavior, poor impulse control and psychosis can occur with Parkinson's meds:
  - Mirapex
  - Requip
  - Sinemet
  - Amantadine, etc

There are numerous clinical studies, but I like stories better...

---

**Case 1:** 68-year-old man taking 2 Parkinson's meds daily for six months. Late one night, he got in his car and drove at speeds above 100 mph. After the incident was over, he expressed regret.

**Case 2:** 69-year-old woman taking one Parkinson's med for three weeks. Stuck in a line of slow-moving cars on a two-lane road, she became so impatient that she passed them on a blind curve. The woman reported "feeling blank" during the incident but highly disturbed afterward.

- Other cases (not this article) involve COMPULSIVE gambling, sex, shopping and binge eating
Steps to Decrease Psychosis or Unusual Behavior in Parkinson’s Disease

- #1. Reduce/discontinue any drugs that have the least antiparkinsonian effect and the greatest potential of causing psychosis.
  - Tagamet
  - Amantadine (TAPER)
  - Levodopa (TAPER)
  - Selegeline

- #2 If possible change dosing or reduce dosing of Parkinson’s meds such as Requip, Mirapex, Sinemet until symptoms subside. Then stick the dose there as long as possible.

- Sometimes antipsychotics are prescribed to decrease issues, if things CANNOT OTHERWISE BE FIXED BUT this can be part of a prescribing cascade. NOT the 1st choice of “fixes”.

PREScribing CASCADE:
Not as tranquil as it sounds

The most common medical intervention we ask doctors to perform is to write a prescription.

Prescribing cascade: prescribing one medication to fix the side effects of other medications

- Example: Reglan and prescribing cascade with Sinemet
Polypharmacy in the elderly

Polypharmacy in the elderly

- Prescription Drugs you take all the time
- Rx you take for one week or as needed
- OTC Painkiller
- OTC vitamin Supplement
- OTC Herbal
- OTC Health Supplement
Polypharmacy in the elderly:

DON'T WAIT for 9+ MEDS BEFORE YOU INTERVENE

Prescription Drugs You take all the time =
1. COUMADIN,
2. METOPROLOL
3. ZOLOFT

Rx Drug you take for one week: CIPRO for UTI

OTC Painkiller =
IBUPROFEN/MOTRIN

OTC Vitamin/mineral
Supplement: IRON

OTC Herbal: ST. JOHN'S WORT

Polypharmacy in the elderly:

What about FOOD?

Prescription Drugs You take all the time =
1. COUMADIN,
2. METOPROLOL
3. ZOLOFT

Rx Drug you take for one week: CIPRO for UTI

You had grapefruit for breakfast

OTC Painkiller =
IBUPROFEN/MOTRIN

OTC Herbal: ST. JOHN'S WORT

OTC Vitamin/mineral
Supplement: IRON
What about Over the Counter “OTCs”?

- Calcium, Iron, Antacids- tetracycline, Cipro, Levaquin, Avelox, Dilantin

- Acid reducers (Zantac, Prilosec, Prevacid, Tagamet)
  - Absorption of:
    - B12
    - Iron
    - Calcium
    - Synthroid, Levothyroxine
  - Tagamet interacts with MULTIPLE meds (liver filtration)
  - Certain acid reducers may decrease the blood thinning properties of Plavix (Prilosec + Plavix)... \( \uparrow \) clot risk

Common Dietary Supplements &/or Herbals:

- Acidophilus or other probiotics
- Ginko biloba
- Glucosamine and/or Chondroiont
- Echinacea
- Fiber
- Omega-3 Fatty Acids
- Ginger
- St. John's Wort
- Garlic
- Saw Palmetto
Common Vitamins/minerals

**Vitamins &/or minerals:**
- Calcium
- Vitamin D
- Vitamin E
- Magnesium
- Zinc
- Iron

Herbals and Supplements


- **Que She Herbal Supplement:** Undeclared Drug Ingredients Capsules widely sold on Internet sites as weight loss supplement [Posted 07/08/2010]

- **BACKGROUND:** Que She, advertised as “Slimming Factor Capsule” and as “an all-natural blend of Chinese herbs,” has been widely distributed on Internet sites such as the Bouncing Bear Botanicals website, and at retail outlets, including Sacred Journey in Lawrence, Kansas.
FDA analysis of Que She found that it contains:

- fenfluramine – a stimulant drug withdrawn from the U.S. market in 1997 after studies demonstrated that it caused serious heart valve damage
- propranolol – a prescription beta blocker drug that can pose a risk to people with bronchial asthma and certain heart conditions
- sibutramine – a controlled substance and prescription weight loss drug; sibutramine was the subject of a recent study whose preliminary findings showed an association between sibutramine use and increased risk of heart attack and stroke in patients who have a history of heart disease.
- ephedrine – a stimulant drug that is legally marketed over-the-counter for temporary relief of asthma but can pose a risk to people with certain cardiovascular conditions.

Herbals/Supplements: More than you bargained for?

Fitness Type waters/herbal supplements:

- Guarana: active constituent is caffeine interacts with:
  - ephedrine/pseudoephedrine (can cause potentially fatal irregular heartbeats)
  - heart problems
  - high blood pressure
  - kidney disease,
  - Thyroid medication
  - Anxiety disorder
  - Can cause liver failure (extract supplements)
- Ginseng
- Ginger
- Green Tea
- dandelion root extract
Herbals/Supplements: More than you bargained for?

Fitness Type waters and herbal supplements often contain:

- Guarana
- Ginseng:
  - Saponin triterpenes, similar to steroid hormones
  - Thought to release adrenal hormones like cortisol (commonly referred to as a stress hormone)
  - Can suppress the immune system, act as a stimulant, exacerbate anxiety disorders
  - Some versions can increase AND some versions decrease blood pressure
  - Can exacerbate bleeding issues (ulcers, people on blood thinners)
  - Can cause liver failure (extract supplements)
- Ginger
- Green Tea
- Dandelion root extract
Herbals/Supplements: More than you bargained for?

Fitness Type waters and herbal supplements often contain:

- Ginseng
- Ginger
- Green Tea –
  - Stimulant effects
  - Diuretic effects
  - Can exacerbate anxiety disorders
  - Can exacerbate bleeding issues (ulcers, people on blood thinners)
  - Interacts with ephedrine/pseudoephedrine (can cause potentially fatal irregular heartbeats)
  - Can cause liver failure (extract supplements)

- Dandelion root extract

Herbals/Supplements: More than you bargained for?

Fitness Type waters and herbal supplements often contain:

- Guarana
- Ginseng
- Ginger
- Green Tea
- Dandelion root extract-
  - Can act as a diuretic (but elevate potassium)
  - Electrolyte imbalances may occur in people taking other diuretics, digoxin or lithium
  - Can have a negative impact on gallstones or if biliary obstruction exist
  - Allergic reactions may occur if also allergic to daisy or chrysanthemum
  - Can exacerbate bleeding issues (ulcers, people on blood thinners)
Quick tips

- Keep and take med list to all MDs include herbals, OTCs, things you take occasionally.
- If you do not take your meds as directed (i.e. you only take your BP meds when you feel you need to) tell your doctor/caregiver.
- Use 1 pharmacy whenever possible (NOTE: we can't add other data in if we don't fill the rx).
- Ask pharmacist about interactions, again include herbals, OTCs, things you take occasionally if unsatisfactory response ask a different pharmacist.
- Brown bag events with pharmacy schools.
- Question MD before, during and after taking the meds.
- Repeatedly examine med list revisit meds as a cause for problems.

Quick tips

- MD sometimes don't get a lot of geriatric education, they often have to seek it out.
- MD get a great overview of pharmacology, but not as in-depth as pharmacists (each professional has different exposures and knowledge, use all your resources).
- MD are people pleasers & USA is a “pill popping panacea culture”.  
  - We want a pill to cure everything.
  - Don't pressure MD for a pill unless warranted.
- Nurses, nurse practitioners are trained to assess and be especially clinically observant - ask their assistance.
Quick tips

- Creating optimal drug regimens that meet the complex needs of elderly people requires thought and careful planning.
- Multiple conditions requiring multiple meds requires EVEN MORE thought and planning as well as continual REVIEW.
- Almost 30% of hospital admission in the USA are for elderly persons who have medication related issues.¹

WHAT DO YOU THINK?

SURVEY
Please Click Here to Take Our Survey!

- Your feedback is important to us.
- Click on ‘SURVEY’ in the upper right of the presentation screen.
- It will take less than 5 minutes.

THANK YOU!

Baptist Health Foundation of San Antonio
Methodist Healthcare Ministries
San Antonio Area Foundation
Pryor Trust
All mmLearn.org donors