Geropharmacology

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Objectives

Analyze the implementation of the nursing process in the promotion & maintenance of system stability for the older adult in relationship to physiological changes, chronic disease, principles of drug administration, medication use, polypharmacy, opioid addiction, and principles of medication safety in older adults.

Required Reading

- Kee 8th Edition
- (Chapter 8) pp. 88-97

Welcome to GeroPharm

- Millennials Show Us What 'Old' Looks Like
- https://www.youtube.com/watch?v=lYdNjrUs4NM

Introduction

- Older adults represent an extremely large & continuously growing population of healthcare consumers
- Currently there are over 35 million people 65 & older
- By 2050 the population 65 & older is projected to be 83.7 million

Introduction(Cont.)

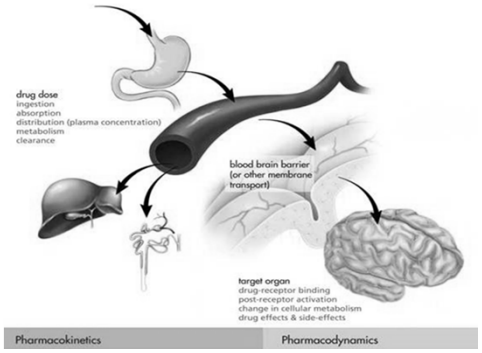
- The oldest old-people 85 & older constitute the fastest growing segment of the population
- Living to 100 is becoming increasingly common
- By 2050 it is estimated that there will be over 1 million people over 100 years of age
- Why is this occurring?

Prevalence of Chronic Diseases

- 92% of older adults have at least 1 chronic illness
- 77% have at least two chronic illnesses
- What do you think are the most common chronic diseases?
- 36% have some type of disability
- They take more medications than any other age group
- 40% of prescription drugs sold in the U.S. are used by the elderly

Principles of Administration

- Start low
- Go slow
- Sometimes say no



Pharmacokinetics & Older Adults

- Absorption
- Distribution
- Metabolism
- Elimination

Factors Affecting Absorption

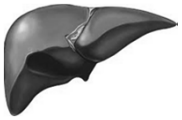
- ↓ saliva production
- ↓ gastric acid secretion
- ↓ GI blood flow
- Delayed gastric emptying
- Intestinal atrophy
- Changes in body fat & lean muscle
- Pulmonary changes
- Skin changes

Factors Affecting Distribution

- ↑ body fat
- ↓ lean muscle
- ↓ total body water
- ↓ albumin

Factors Affecting Metabolism

- ↓ hepatic blood flow
- ↓ liver volume



Factors Affecting Elimination

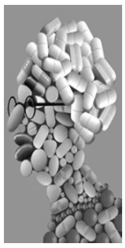
- Decrease in kidney function
- GI function
- Pulmonary changes

What Do You Know

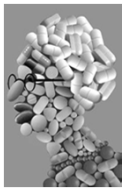
- What percentage of hepatic blood flow is reduced in older adults?

Medication Issues With Older Adults

- Age-related changes
- Drug interactions & adverse drug reactions
- Polypharmacy
- Human error



Medication Issues With Older Adults (Cont.)



- Inappropriate prescribing
- Self-medication practices
- Medication adherence
- Legitimacy of internet pharmacies
- Use of imported medications
- Outdated medications
- Financial

Elderly parents - too many pills?

https://www.youtube.com/watch?v=rAM5L71pnDE

Nursing Challenge

- What are some good questions to ask patients about medications

Older Adults & Hospitalization

- **Current research**
  26 to 30% of hospital admissions
  25% of nursing home admissions
  20% of preventable adverse events in the community

Common Inappropriate Drugs Issued To Older Adults

- Psychotropic agents
- Anti-inflammatory drugs
- Amitriptyline
- Iron supplements

Inappropriate Conditions for Use of Antipsychotic Drugs

- Wandering
- Anxiety
- Impaired memory
- Depression (w/o psychotic features)
- Poor self-care
- Restlessness
- Insomina

Inappropriate Conditions for Use of Antipsychotic Drugs

- Unsociable
- Indifference to surroundings
- Fidgeting
- Nervousness
- Uncooperativeness
- Agitated behaviors that do not represent danger to the resident or others

Addictive Drug Classes

- Opioids
- Benzodiazepines

Test Your Knowledge

- Decreased intracellular fluid
- Decreased gastric acidity
- Decreased gastric blood flow & motility
- Reduced cardiac output and circulation

Represent What?

Test Your Knowledge

The main organ of metabolism of meds is

_____

The main organ for elimination of meds is_____

True or False

Serum creatinine is the best indicator of renal function in the elderly.

Test Your Knowledge

What are the four phases of pharmokinetics:

1._____
2._____
3._____
4._____

Test Your Knowledge

Pharmacodynamics is AKA as_____

The Doctor's Toolbox

"There's this growing group of older adults, they have pain, they have anxiety…. And a lot of doctors and these doctors have one thing in their toolbox."

What is it?

Meet Gladys

How Crafty Can They Get?

Alice is the primary caregiver for her 73-year old mother, Gladys. Alice often ran errands for her mother, & after a few trips to the pharmacy, she noticed that her mother had an increasing number of prescriptions for Percocet. When questioned, Gladys became very defensive. She basically told her daughter "it is none of your _____business."

How Crafty Can They Get? (cont.)

Alice was brought up to be persistent & overtime she became increasingly concerned & confrontational with her mother. After a lot of in-house fighting & name calling the full story came out. Gladys had build up a tolerance to the Percocet & started increasing her dosage. She never told her doctor that she had increased the dosage. Why?

Thinking that she had resolved the problem Alice she stopped questioning her mother.

What Response is Gladys's Waiting For?

How Crafty Can They Get? (cont.)

Gladys sets up appointments & started visiting several different doctors

What Is Gladys's Favorite Question

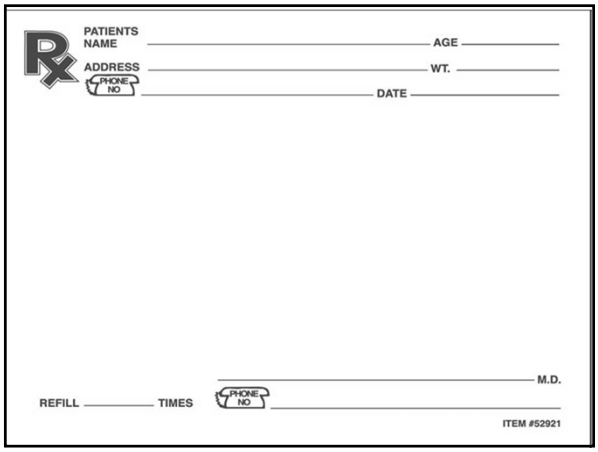
What Response is Gladys's Waiting For?

How Crafty Can They Get? (cont.)

- She began using different pharmacies to fill her prescriptions.

How Crafty Can They Get? (cont.)

- She began to change the numbers on the prescriptions so that she could get more pills with more refills.



Signs of Prescription Addiction

- How many pills are they taking?
- Has their behavior or mood changed?
- Are they giving excuses as to why they need their medication?
- Do they have a “purse or pocket supply”
- Have they recently changed doctors or pharmacies?

Signs of Prescription Addiction (cont.)

- Have they received the same prescription from two or more physicians or pharmacist at approximately the same time?
- Do they become annoyed or uncomfortable when others talk about their use of medications?
- Do they sneak or hide their medications?

CDC Guidelines for Prescribing Opioids

- When to initiate or continue opioids for chronic pain
- Opioid selection, dosage, duration, follow-up, &discontinuation
- Assessing risk & addressing harms of opioid use
- Guidelines have been adopted by the Centers for Medicare & Medicaid Services (CMS)

Medication Regimen Review (MRR)

- Required by Medicare
- Involves a thorough evaluation of the medication regimen
- Includes preventing, identifying, reporting, and resolving medication-related problems, medication errors, and other irregularities

Financial Consequences

- Medication related problems costs an estimated $178 billion dollars/yr
- One of the top 5 causes of death in this age group

Screening Tools

- Beers Criteria
- The Screening Tool of Older Person's Prescriptions (STOPP)
- The FORTA (Fit For The Aged)
- Health Care Financing Administration
- Assessing Care of Vulnerable Elders

QSEN In Action-What Is Your Role Promoting Safe & Effective Medication Management

Know the drill about every pill

How do they identify their pills

Prevent, detect, or intervene as early as possible to prevent ADEs

Medication related problems to look for

Ensure drug therapy is effective for the person's condition

Your diligence makes the difference

QSEN In Action-What Is Your Role Promoting Safe & Effective Medication Management

Is it possible to prevent the need for medications

Can the dose or length of drug therapy be reduced

Do nurses recognize the indication for reduced dosage

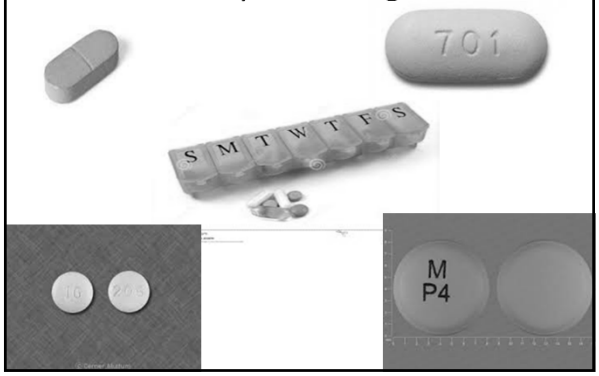
Nonpharmacological possibilities

How Do you Manage This

Warfarin

Lipitor

How Do you Manage This



Patient Teaching

- Assessment
- Simplify medication prescribing
- Use medication adherence aids
- Keep a medication list
- Review medications w/healthcare provider
- Be aware of functional changes
- Behavioral support
- Universal precautions

Patient Teaching

- Educate the patient and family concerning storage, preparation, & administration
- Assure understanding about storage, administration, preparation

We Want to Keep Them Healthy

- So they Can do this
- **80 years old women amazing dance in britainsgottalent 2014**
- https://www.youtube.com/watch?v=VjsF0Y5YMes

Nonpharmacological Alternatives

- Constipation
- Insomnia
- Heartburn
- Pain

Thought of the Day

Be that student who wakes up with purpose and intent. Be that student who shows up and never gives up. Be that student who believes that anything is possible and is willing to be strong and have the courage and self-confidence to work for it.