Pharmacology Basics

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Drug Nomenclature

- Chemical-Scientific Name
- Generic name
  - NOT CAPITALIZED
- Official Name
- Brand or Trade name
  - Symbol R with a circle around it
  - Name capitalized
Drug Classifications

- Body system
- Therapeutic or clinical use
- Chemical action
- Prescription vs non-prescription
- Illegal or recreational
Pregnancy Categories

- A-no risk
- B-minimal risk or no studies done
- C-risk identified
- D-well studied definite risk-benefit may out do risk
- X-positive evidence fetal abnormalities-not used
PRACTICE EXAMPLES

- Use your drug book
- Find 5 Medications
- Tell us the scientific, trade and generic names
What are drugs made of?

- Minerals
- Plant
- Animal
- Synthesis
- Microorganisms
Drug Preparations

- VEHICLES
- Solid Preparations
  - Capsule
  - Tablet
  - Pill
  - Lozenge
Drug Preparations

- Solid Preparations
  - Suppository
  - Ointment
  - Powder

- Tablets or pills may be “scored”
Drug Preparations

- Fluid preparations
  - Oral parenteral or injectable or IV
Pharmacokinetics

- Absorption
- Distribution
- Metabolism
- Excretion
Absorption—movement of a drug into the bloodstream.

- May be via several routes
- Oral—broken down in aqueous environment
  - Enters GI tract, absorption continues
- Absorption may be further influenced by gut motility, prior surgery to the intestines, simultaneous intake of food, other drugs, and many other factors.
Distribution

- Depends on tissue permeability
- Depends on tissue perfusion
- Depends on amount of blood flow
- pH can affect
Excretion

- Relies mostly on KIDNEYS
- Also referred to as clearance
Factors Influencing Drug Action

- Age
- Body Weight
- Metabolic Rate
- Illness
- Psychological Aspects
  - Placebo effect
- Tolerance/Dependence
- Cumulative effect
Drug Action

- Each drug has a DESIRED effect
- Can also cause undesirable effects-known as side effects

LOOK IN DRUG BOOK- find desired action, list of side effects
Adverse Reactions

- Allergic Reactions
  - Hives
  - Itching
  - Eddema
- Anaphylactic reaction
  - Respiratory distress
  - Cardiovascular collapse
Risks With Drugs

- Carcinogenicity
- Teratogen
Drug Interactions

- Drugs can “mix” or interact with other things
  - Drugs
  - Foods
  - Juices
Drug Legislation

- Federal Food, Drug and Cosmetic Act 1938
- Controlled Substances Act, 1970
  - Schedule I
  - Schedule II
  - Schedule III
  - Schedule IV
  - Schedule V
Drug Development

- Preclinical research
- Clinical research and development
- New drug application review
- Postmarketing surveillance
Common Abbreviations

- Daily
- BID=twice daily**
- PRN=as needed
- Ad lib=as much as needed
- Mg=milligram
- Ml=milliliter
- C=with
Common Abbreviations

- Tid=three times a day**
- Stat=NOW
- NGT=via nasogastric tube
- Gr=grain
- Gtt=drops
- Od=right eye
- Os=left eye
- Ou=both eyes
- Pc=after eating
- Ac=before eating
- Q=every
- Qh=every hour
Six Rights of Medication Administration

- Right Drug
- Right Time
- Right Dose
- Right Patient
- Right Route
- Right Documentation
Nursing Process in Med Administration

- Assessment data collection
- Nursing diagnosis
- Planning
- Implementation
- Evaluation
Drug Action Across the LifeSpan

- Absorption
- Distribution
- Metabolism
- Excretion
- Toxicity
- Pregnancy/Breast-feeding
Patient Education and Medication Therapy

- Noncompliance
- We learn three basic ways
  - Learning needs to be focused, repetitive
  - Need to address all ways people learn
- Determine readiness to learn
- Determine barriers (age, cognition, hearing/vision impairments)
- SPACE OUT TEACHING