NUR 230 Pharmacology

COURSE OUTLINE

Course Description:
Introduces general principles of drug action, pharmacology of the major drug classes, and specific agents within each class. Includes math calculations necessary to adapt dosages to the multidimensional needs of individuals across the lifespan. Lecture 3 hours per week.

Semester Credits: 3  Lecture Hours: 3  Lab/Recitation Hours:  _
Course Outcomes

At the completion of this course, the student should be able to:

1. Discuss the major concepts associated with pharmacology including pharmacodynamics, pharmacokinetics, therapeutic effects, adverse effects, and factors affecting drug therapy.
2. Explain the legal regulation for drug development, approval and testing.
3. Discuss the challenges associated with drug therapy in current times.
5. Describe the major drug groups and their indications for use.
6. Correlate the actions of the major drug groups with the body system(s) affected.
7. Identify the prototype for each of the major drug groups.
8. Discuss the important lifespan considerations associated with the major drug groups.
9. Explain the mechanism of action, indications, contraindications and cautions, common adverse effects, and clinically important drug-drug interactions for each of the major drug groups.
10. Relate the importance of renal and hepatic function with drug therapy.
11. Describe the nursing considerations related to drug therapy, including important teaching points, for each of the major drug groups.
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Required Materials:

Focus on Nursing Pharmacology (6th ed.). Philadelphia, PA: Lippincott Williams & Wilkins. Point/PrepU

Textbook:

Chapter 01: Introduction to Drugs

1. Define the word pharmacology.
2. Outline the steps involved in developing and approving a new drug in the United States.
3. Describe the federal controls on drugs that have abuse potential.
   4. Differentiate between generic and brand-name drugs and over-the-counter and prescription drugs. Explain the benefits and risks associated with the use of over-the-counter drugs.

Chapter 02: Drugs and the Body

Describe how body cells respond to the presence of drugs that are capable of altering their function.

1. Outline the process of dynamic equilibrium that determines the actual concentration of a drug in the body.
2. Explain the meaning of half-life of a drug and calculate the half-life of given drugs.
3. List at least six factors that can influence the actual effectiveness of drugs in the body.

Chapter 03: Toxic Effects of Drugs

1. Define the term adverse drug reaction and explain the clinical significance of this reaction.
2. List four types of allergic responses to drug therapy.
3. Discuss five common examples of drug-induced tissue damage.
4. Define the term poison.
5. Outline the important factors to consider when applying the nursing process to selected situations of drug poisoning.

Chapter 04: The Nursing Process in Drug Therapy and Patient Safety (skip taught in N 111)

1. List the responsibilities of the nurse in drug therapy.
2. Explain what is involved in each step of the nursing process as it relates to drug therapy.
3. Describe key points that must be incorporated into the assessment of a patient receiving drug therapy.
4. Describe the essential elements of a medication order.
5. Outline the important points that must be assessed and considered before administering a drug, combining knowledge about the drug with knowledge of the patient and the environment.

6. Describe the role of the nurse and the patient in preventing medication errors.

Chapter 05: Dosage Calculations (Skip taught in N135)

1. Describe four measuring systems that can be used in drug therapy.
2. Convert between different measuring systems when given drug orders and available forms of the drugs.
3. Calculate the correct dose of a drug when given examples of drug orders and available forms of the drugs ordered.
4. Discuss why children require different dosages of drugs than adults.
5. Explain the calculations used to determine a safe pediatric dose of a drug.

Chapter 06: Challenges to Effective Drug Therapy

1. Discuss the impact of the media, the Internet, and direct-to-consumer advertising on drug sales and prescriptions.
2. Explain the growing use of over-the-counter drugs and the impact it has on safe medical care.
3. Discuss the lack of controls on herbal or alternative therapies and the impact this has on safe drug therapy.
4. Define the off-label use of a drug.
5. Describe measures being taken to protect the public in cases of bioterrorism.
6. Part 2: Chemotherapeutic Agents

Chapter 07: Introduction to Cell Physiology

1. Identify the parts of the human cell.
2. Describe the role of each organelle found within the cell cytoplasm.
3. Explain the unique properties of the cell membrane.
4. Describe three processes used by the cell to move things across the cell membrane.
5. Outline the cell cycle, including the activities going on within the cell in each phase.

Chapter 08: Anti-Infective Agents

1. Explain what is meant by selective toxicity and discuss its importance in anti-infective therapies.
2. Differentiate between broad-spectrum and narrow-spectrum drugs.
3. Define resistance to anti-infectives and discuss the emergence of resistant strains.
4. Explain three ways to minimize resistance.
5. Describe three common adverse reactions associated with the use of anti-infectives

Chapter 09: Antibiotics

1. Explain how an antibiotic is selected for use in a particular clinical situation.
2. Describe therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each of the classes of antibiotics.
3. Discuss use of antibiotics as they are used across the lifespan.
4. Compare and contrast prototype drugs for each class of antibiotics with other drugs in that class.
5. Outline nursing considerations for patients receiving each class of antibiotic.

Chapter 10: Antiviral Agents

1. Discuss problems with treating viral infections in humans and the use of antivirals across the lifespan.
2. Describe characteristics of common viruses and the resultant clinical presentations of common viral infections.
3. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each of the types of antivirals discussed in the chapter.
4. Compare and contrast the prototype drugs for each type of antiviral with the other drugs within that group.
5. Outline the nursing considerations for patients receiving each class of antiviral agent.

Chapter 11: Antifungal Agents

1. Describe the characteristics of a fungus and a fungal infection.
2. Discuss the therapeutic actions, indications, pharmacokinetics, contraindications, proper administration, most common adverse reactions, and important drug–drug interactions associated with systemic and topical antifungals.
3. Compare and contrast the prototype drugs for systemic and topical antifungals with the other drugs in each class.
4. Discuss the impact of using antifungals across the lifespan.
5. Outline the nursing considerations for patients receiving a systemic or topical antifungal.

Chapter 12: Antiprotozoal Agents
1. Outline the life cycle of the protozoan that causes malaria.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, proper administration, most common adverse reactions, and important drug–drug interactions associated with drugs used to treat malaria.
3. Describe other common protozoal infections, including cause and clinical presentation.
4. Compare and contrast the antimalarials with other drugs used to treat protozoal infections.
5. Outline the nursing considerations for patients receiving an antiprotozoal agent across the lifespan.

Chapter 13: Anthelmintic Agents

1. List the common worms that cause disease in humans.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with the anthelmintics.
3. Discuss the use of anthelmintics across the lifespan.
4. Compare and contrast the prototype drug mebendazole with other anthelmintics.
5. Outline the nursing considerations, including important teaching points to stress for patients receiving an anthelmintic.

Chapter 14: Antineoplastic Agents

1. Describe the nature of cancer and the changes the body undergoes when cancer occurs.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each class of antineoplastic agents and with adjunctive therapy use with these drugs.
3. Discuss the use of antineoplastic drugs across the lifespan.
4. Compare and contrast the prototype drugs for each class of antineoplastic agents with the other drugs in that class.
5. Outline the nursing considerations and teaching needs for patients receiving each class of antineoplastic agents.

Part 3: Drugs Acting on the Immune System

Chapter 15: Introduction to the Immune Response and Inflammation

1. List four natural body defenses against infection.
2. Describe the cells associated with the body’s fight against infection and their basic functions.
3. Outline the sequence of events in the inflammatory response.
4. Correlate the events in the inflammatory response with the clinical picture of inflammation.
5. Outline the sequence of events in an antibody-related immune reaction and correlate these events with the clinical presentation of such a reaction.

**Chapter 16: Anti-Inflammatory, Antiarthritis, and Related Agents**

1. Describe the sites of action of the various anti-inflammatory agents.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each class of anti-inflammatory agents.
3. Discuss the use of anti-inflammatory drugs across the lifespan.
4. Compare and contrast the prototype drugs for each class of anti-inflammatory drugs with the other drugs in that class.
5. Outline the nursing considerations and teaching needs for patients receiving each class of anti-inflammatory agents.

**Chapter 17: Immune Modulators**

1. Describe the sites of actions of the various immune modulators.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse effects, and important drug–drug interactions associated with each class of immune stimulants and immune suppressants.
3. Discuss the use of immune modulators across the lifespan.
4. Compare and contrast the prototype drugs for each class of immune modulators with the other drugs in that class and with drugs in other classes.
5. Outline the nursing considerations and teaching needs for patients receiving each class of immune modulators.

**Chapter 18: Vaccines and Sera**

1. Define the terms active immunity and passive immunity.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse effects, and important drug–drug interactions associated with each vaccine, immune serum, antitoxin, and antivenin.
3. Discuss the use of vaccines and sera across the lifespan, including recommended immunization schedules.
4. Compare and contrast the prototype drugs for each class of vaccine and immune serum with others in that class.
5. Outline the nursing considerations and teaching needs for patients receiving a vaccine or immune serum.
Part 4: Drugs Acting on the Central and Peripheral Nervous Systems

Chapter 19: Introduction to Nerves and the Nervous System

1. Label the parts of a neuron and describe the functions of each part.
2. Describe an action potential, including the roles of the various electrolytes involved in the action potential.
3. Explain what a neurotransmitter is, including its origins and functions at the synapse.
4. Describe the function of the cerebral cortex, cerebellum, hypothalamus, thalamus, midbrain, pituitary gland, medulla, spinal cord, and reticular activating system.
5. Discuss what is known about learning and the impact of emotion on the learning process.

Chapter 20: Anxiolytic and Hypnotic Agents

1. Define the states that are affected by anxiolytic or hypnotic agents.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each class of anxiolytic or hypnotic agent.
3. Discuss the use of anxiolytic or hypnotic agents across the lifespan.
4. Compare and contrast the prototype drugs for each class of anxiolytic or hypnotic drug with the other drugs in that class.
5. Outline the nursing considerations and teaching needs for patients receiving each class of anxiolytic or hypnotic agent.

Chapter 21: Antidepressant Agents

1. Describe the biogenic theory of depression.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each class of antidepressant.
3. Discuss the use of antidepressants across the lifespan.
4. Compare and contrast the prototype drugs for each class of antidepressant with the other drugs in that class and with drugs in the other classes of antidepressants.
5. Outline the nursing considerations and teaching needs for patients receiving each class of antidepressant.

Chapter 22: Psychotherapeutic Agents

1. Define the term psychotherapeutic agent and list conditions that the psychotherapeutic agents are used to treat.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each class of psychotherapeutic agent.
3. Discuss the use of psychotherapeutic agents across the lifespan.
4. Compare and contrast the prototype drugs for each class of psychotherapeutic agent with other drugs in that class and with drugs in the other classes of psychotherapeutic agents.

5. Outline the nursing considerations and teaching needs for patients receiving each class of psychotherapeutic agents.

Chapter 23: Antiseizure Agents

1. Define the terms generalized seizure, tonic–clonic seizure, absence seizure, partial seizure, and status epilepticus.

2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with each class of antiseizure agents.

3. Discuss the use of antiepileptic drugs across the lifespan.

4. Compare and contrast the prototype drugs for each class of antiepileptic drug with the other drugs in that class and with drugs from the other classes.

5. Outline the nursing considerations and teaching needs for patients receiving each class of antiepileptic agents.

Chapter 24: Antiparkinsonism Agents

1. Describe the current theory of the cause of Parkinson’s disease and correlate this with the clinical presentation of the disease.

2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with antiparkinsonism agents.

3. Discuss the use of antiparkinsonism agents across the lifespan.

4. Compare and contrast the prototype drugs for each class of antiparkinsonism agents with the other drugs in that class and with drugs from the other classes used to treat the disease.

5. Outline the nursing considerations and teaching needs for patients receiving each class of antiparkinsonism agents.

Chapter 25: Muscle Relaxants

1. Describe a spinal reflex and discuss the pathophysiology of muscle spasm and muscle spasticity.

2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with the centrally acting and the direct-acting skeletal muscle relaxants.

3. Discuss the use of muscle relaxants across the lifespan.

4. Compare and contrast the prototype drugs baclofen and dantrolene with other muscle relaxants in their classes.

5. Outline the nursing considerations, including important teaching points for patients receiving muscle relaxants as adjunct to anesthesia.
Chapter 26: Narcotics, Narcotic Antagonists, and Antimigraine Agents

1. Outline the gate theory of pain and explain therapeutic ways to block pain using the gate theory.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with narcotics and antimigraine agents.
3. Discuss the use of the different classes of narcotics, narcotic antagonists, and antimigraine agents across the lifespan.
4. Compare and contrast the prototype drugs morphine, pentazocine, naloxone, ergotamine, and sumatriptan with other drugs in their respective classes.
5. Outline the nursing considerations, including important teaching points, for patients receiving a narcotic, a narcotic antagonist, or an antimigraine drug.

Chapter 27: General and Local Anesthetic Agents

1. Describe the concept of balanced anesthesia.
2. Describe the actions and uses of local anesthesia.
3. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with general and local anesthetics.
4. Outline the preoperative and postoperative needs of a patient receiving general or local anesthesia.
5. Compare and contrast the prototype drugs thiopental, midazolam, nitrous oxide, halothane, and lidocaine with other drugs in their respective classes.
6. Outline the nursing considerations, including important teaching points, for patients receiving general and local anesthetics.

Chapter 28: Neuromuscular Junction Blocking Agents

1. Draw and label a neuromuscular junction.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with the depolarizing and nondepolarizing neuromuscular junction blockers.
3. Discuss the use of neuromuscular junction blockers across the lifespan.
4. Compare and contrast the prototype drugs pancuronium and succinylcholine with other neuromuscular junction blockers.
5. Outline the nursing considerations, including important teaching points, for patients receiving a neuromuscular junction blocker.
Part 5: Drugs Acting on the Autonomic Nervous System

Chapter 29: Introduction to the Autonomic Nervous System

1. Describe how the autonomic nervous system differs anatomically from the rest of the nervous system.
2. Outline a sympathetic response and the clinical manifestation of this response.
3. Describe the alpha- and beta-receptors found within the sympathetic nervous system by sites and actions that follow the stimulation of each kind of receptor.
4. Outline the events that occur with stimulation of the parasympathetic nervous system.
5. Define the terms muscarinic receptor and nicotinic receptor, giving an example of each.

Chapter 30: Adrenergic Agonists

1. Describe two ways that sympathomimetic drugs act to produce effects at adrenergic receptors.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with adrenergic agonists.
3. Discuss the use of adrenergic agents across the lifespan.
4. Compare and contrast the prototype drugs dopamine, phenylephrine, and isoproterenol with other adrenergic agonists.
5. Outline the nursing considerations, including important teaching points, for patients receiving an adrenergic agent.

Chapter 31: Adrenergic Blocking Antagonists

1. Describe the effects of adrenergic blocking agents on adrenergic receptors, correlating these effects with their clinical effects.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with adrenergic blocking agents.
3. Discuss the use of adrenergic blocking agents across the lifespan.
4. Compare and contrast the prototype drugs labetalol, phentolamine, doxazosin, propranolol, and atenolol with other adrenergic blocking agents.
5. Outline the nursing considerations, including important teaching points, for patients receiving an adrenergic blocking agent.
Chapter 32: Cholinergic Agonists

1. Describe the effects of cholinergic receptors, correlating these effects with the clinical effects of cholinergic agonists.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with the direct- and indirect-acting cholinergic agonists.
3. Discuss the use of cholinergic agonists across the lifespan.
4. Compare and contrast the prototype drugs bethanechol, donepezil, and pyridostigmine with other cholinergic agonists.
5. Outline the nursing considerations, including important teaching points, for patients receiving a cholinergic agonist.

Chapter 33: Anticholinergic Agents

1. Define anticholinergic agents.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions of anticholinergic agents.
3. Discuss the use of anticholinergic agents across the lifespan.
4. Compare and contrast the prototype drug atropine with other anticholinergic agents.
5. Outline the nursing considerations, including important teaching points, for patients receiving anticholinergic agents.

Part 6: Drugs Acting on the Endocrine System

Chapter 34: Introduction to the Endocrine System

1. Label a diagram showing the glands of the traditional endocrine system and list the hormones produced by each.
2. Describe two theories of hormone action.
3. Discuss the role of the hypothalamus as the master gland of the endocrine system, including influences on the actions of the hypothalamus.
4. Outline a negative feedback system within the endocrine system and explain the ways that this system controls hormone levels in the body.
5. Describe the hypothalamic–pituitary axis (HPA) and what would happen if a hormone level was altered within the HPA.

Chapter 35: Hypothalamic and Pituitary Agents

1. Describe the anatomical and physiological relationship between the hypothalamus and the pituitary gland and list the hormones produced by each.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with the hypothalamic and pituitary agents.
3. Discuss the use of hypothalamic and pituitary agents across the lifespan.
4. Compare and contrast the prototype drugs leuprolide, somatropin, bromocriptine mesylate, and desmopressin with other hypothalamic and pituitary agents.
5. Outline the nursing considerations, including important teaching points, for patients receiving a hypothalamic or pituitary agent.

Chapter 36: Adrenocortical Agents

1. Explain the control of the synthesis and secretion, and physiological effects of the adrenocortical agents.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with the adrenocortical agents.
3. Discuss the use of adrenocortical agents across the lifespan.
4. Compare and contrast the prototype drugs prednisone and fludrocortisone with other adrenocortical agents.
5. Outline the nursing considerations, including important teaching points, for patients receiving an adrenocortical agent.

Chapter 37: Thyroid and Parathyroid Agents

1. Explain the control of the synthesis and secretion of thyroid hormones and parathyroid hormones, applying this to alterations in the control process (e.g., using thyroid hormones to treat obesity, Paget’s disease, etc.).
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with thyroid and parathyroid agents.
3. Discuss the use of thyroid and parathyroid drugs across the lifespan.
4. Compare and contrast thyroid and parathyroid prototype drugs with agents in their class.
5. Outline nursing considerations, including important teaching points, for patients receiving drugs used to affect thyroid or parathyroid function.

Chapter 38: Agents to Control Blood Glucose Levels

1. Describe the pathophysiology of diabetes mellitus, including alterations in metabolic pathways and changes to basement membranes.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with insulin and other antidiabetic and glucose-elevating agents.
3. Discuss the use of antidiabetic and glucose-elevating agents across the lifespan.
4. Compare and contrast the prototype drugs insulin, chlorpropamide, glyburide, and metformin with other antidiabetic agents in their class.
5. Outline the nursing considerations, including important teaching points, for patients receiving an antidiabetic or glucose-elevating agent.

**Part 7: Drugs Acting on the Reproductive System**

**Chapter 39: Introduction to the Reproductive System**

1. Label a diagram depicting the structures of the female ovaries and male testes as part of the reproductive systems and explain the function of each structure.
2. Outline the control mechanisms involved with the male and female reproductive systems, using this outline to explain the negative feedback systems involved with each system.
3. List five effects for each of the sex hormones: estrogen, progesterone, and testosterone.
4. Describe the changes that occur to the female body during pregnancy.
5. Describe the phases of the human sexual response and briefly describe the clinical presentation of each stage.

**Chapter 40: Drugs Affecting the Female Reproductive System**

1. Integrate knowledge of the effects of sex hormones on the female body to explain the therapeutic and adverse effects of these agents when used clinically.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with drugs that affect the female reproductive system.
3. Discuss the use of drugs that affect the female reproductive system across the lifespan.
4. Compare and contrast the prototype drugs estradiol, raloxifene, norethindrone, clomiphene, oxytocin, and dinoprostone with other agents in their class.
5. Outline the nursing considerations, including important teaching points to stress, for patients receiving drugs that affect the female reproductive system.

**Chapter 41: Drugs Affecting the Male Reproductive System**

1. Discuss the effects of testosterone and androgens on the male body and use this information to explain the therapeutic and adverse effects of these agents when used clinically.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with drugs affecting the male reproductive system.
3. Discuss the use of drugs that affect the male reproductive system across the lifespan.
4. Compare and contrast the prototype drugs testosterone, oxandrolone, and sildenafil with other agents in their class.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to affect the male reproductive system.

**Part 8: Drugs Acting on the Cardiovascular System**

**Chapter 42: Introduction to the Cardiovascular System**

1. Label a diagram of the heart, including all chambers, valves, great vessels, coronary vessels, and the conduction system.
2. Describe the flow of blood during the cardiac cycle, including flow to the cardiac muscle.
3. Outline the conduction system of the heart, correlating the normal ECG pattern with the underlying electrical activity in the heart.
4. Discuss four normal controls of blood pressure.
5. Describe the capillary fluid shift, including factors that influence the movement of fluid in clinical situations.

**Chapter 43: Drugs Affecting Blood Pressure**

1. Outline the normal controls of blood pressure and explain how the various drugs used to treat hypertension or hypotension affect these controls.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with drugs affecting blood pressure.
3. Discuss the use of drugs that affect blood pressure across the lifespan.
4. Compare and contrast the prototype drugs captopril, losartan, diltiazem, nitroprusside, and midodrine with other agents in their class and with other agents used to affect blood pressure.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to affect blood pressure.

**Chapter 44: Cardiotonic Agents**

1. Describe the pathophysiologic process of heart failure and the resultant clinical signs.
2. Explain the body’s compensatory mechanisms that occur in response to heart failure.
3. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with the cardiotonic agents.
4. Discuss the use of cardiotonic agents across the lifespan.
5. Compare and contrast the prototype drugs digoxin and inamrinone and digoxin immune Fab.
6. Outline the nursing considerations, including important teaching points, for patients receiving cardiotonic agents.
Chapter 45: Antiarrhythmic Agents

1. Describe the cardiac action potential and its phases to explain the changes made by each class of antiarrhythmic agents.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with antiarrhythmic agents.
3. Discuss the use of antiarrhythmic agents across the lifespan.
4. Compare and contrast the prototype antiarrhythmic drugs lidocaine, propranolol, sotalol, and diltiazem with other agents in their class and with other classes of antiarrhythmics.
5. Outline the nursing considerations, including important teaching points, for patients receiving antiarrhythmic agents.

Chapter 46: Antianginal Agents

1. Describe coronary artery disease, including identified risk factors and clinical presentation.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with the nitrates, beta-blockers, and calcium channel blockers used to treat angina.
3. Discuss the use of antianginal agents across the lifespan.
4. Compare and contrast the prototype drugs nitroglycerin, metoprolol, and diltiazem with other agents used to treat angina.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to treat angina.

Chapter 47: Lipid-Lowering Agents

1. Outline the mechanisms of fat metabolism in the body and discuss the role of hyperlipidemia as a risk factor for coronary artery disease.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with bile acid sequestrants, HMG-CoA inhibitors, cholesterol absorption inhibitors, and other agents used to lower lipid levels.
3. Discuss the use of drugs that lower lipid levels across the lifespan.
4. Compare and contrast the various drugs used to lower lipid levels.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to lower lipid levels.

Chapter 48: Drugs Affecting Blood Coagulation

1. Outline the mechanisms by which blood clots dissolve in the body, correlating this information with the actions of drugs used to affect blood clotting.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with drugs affecting blood coagulation.

3. Discuss the use of drugs that affect blood coagulation across the lifespan.

4. Compare and contrast the prototype drugs aspirin, heparin, urokinase, antihemophilic factor, and aminocaproic acid with other agents used to affect blood coagulation.

5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to affect blood coagulation.

Chapter 49: Drugs Used to Treat Anemia’s

1. Explain the process of erythropoiesis and its correlation with the development of three types of anemias.

2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with drugs used to treat anemias.

3. Discuss the use of drugs used to treat anemias across the lifespan.

4. Compare and contrast the prototype drugs epoetin alfa, ferrous sulfate, folic acid, and hydroxocobalamin with other agents in their class.

5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to treat anemias.

Part 9: Drugs Acting on the Renal System

Chapter 50: Introduction to the Renal System

1. Review the anatomy of the kidney, including the structure of the nephron.

2. Explain the basic processes of the kidney and where these processes occur.

3. Explain the control of calcium, sodium, potassium, and chloride in the nephron.

4. Discuss the countercurrent mechanism and the control of urine concentration and dilution, applying these effects to various clinical scenarios.

5. Describe the renin–angiotensin–aldosterone system, including controls and clinical situations where this system is active.

6. Discuss the roles of the kidney in acid–base balance, calcium regulation, and red blood cell production, integrating this information to explain the clinical manifestations of renal failure.

Chapter 51: Diuretic Agents

1. Define the term diuretic and list the five classes of diuretics.

2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with the various classes of diuretic drugs.
3. Discuss the use of diuretic agents across the lifespan.
4. Compare and contrast the prototype drugs of each class of diuretic drugs with other agents in their class.
5. Outline the nursing considerations, including important teaching points, for patients receiving diuretic agents.

Chapter 52: Drugs Affecting the Urinary Tract and the Bladder

1. Describe four common problems associated with the urinary tract, including the clinical manifestations of these problems.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with urinary tract anti-infectives, antispasmodics, and analgesics, bladder protectants, and drugs used to treat benign prostatic hyperplasia (BPH).
3. Discuss the use of drugs affecting the urinary tract and bladder across the lifespan.
4. Compare and contrast the prototype drugs norfloxacin, oxybutynin, and doxazosin with other agents in their class.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs affecting the urinary tract and bladder.

Part 10: Drugs Acting on the Respiratory System

Chapter 53: Introduction to the Respiratory System

1. Describe the major structures of the respiratory system, including the role of each in respiration.
2. Describe the process of respiration, with clinical examples of problems that can arise with alterations in the respiratory membrane.
3. Differentiate between the common conditions that affect the upper respiratory system.
4. Identify three conditions involving the lower respiratory tract, including the clinical presentations of these conditions.
5. Discuss the process involved in obstructive respiratory diseases, correlating this to the signs and symptoms of these diseases.

Chapter 54: Drugs Acting on the Upper Respiratory Tract

1. Outline the underlying physiological events that occur with upper respiratory disorders.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with drugs acting on the upper respiratory tract.
3. Discuss the use of drugs that act on the upper respiratory tract across the lifespan.
4. Compare and contrast the prototype drugs with other agents in their class and with other classes of drugs that act on the upper respiratory tract.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs acting on the upper respiratory tract.

Chapter 55: Drugs Acting on the Lower Respiratory Tract

1. Describe the underlying pathophysiology involved in obstructive pulmonary disease and correlate this information with the presenting signs and symptoms.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications, most common adverse reactions, and important drug–drug interactions associated with drugs used to treat lower respiratory tract disorders.
3. Discuss the use of drugs used to treat obstructive pulmonary disorders across the lifespan.
4. Compare and contrast the prototype drugs used to treat obstructive pulmonary disorders with other agents in their class and with other classes of drugs used to treat obstructive pulmonary disorders.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to treat obstructive pulmonary disorders.

Part 11: Drugs Acting on the Gastrointestinal System

Chapter 56: Introduction to the Gastrointestinal System

1. Label the parts of the gastrointestinal (GI) tract on a diagram, describing the secretions, absorption, digestion, and type of motility that occurs in each part.
2. Discuss the nervous system control of the GI tract, including influences of the autonomic nervous system on GI activity.
3. List three of the local GI reflexes and describe the clinical application of each.
4. Describe the steps involved in swallowing, including two factors that can influence this reflex.
5. Discuss the vomiting reflex, addressing three factors that can stimulate the reflex.

Chapter 57: Drugs Affecting Gastrointestinal Secretions

1. Describe the current theories on the pathophysiological process responsible for the signs and symptoms of peptic ulcer disease.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with drugs used to affect gastrointestinal (GI) secretions.
3. Discuss the drugs used to affect GI secretions across the lifespan.
4. Compare and contrast the prototype drugs used to affect GI secretions with other agents in their class and with other classes of drugs used to affect GI secretions.
5. Outline the nursing considerations, including important teaching points, for patients receiving drugs used to affect GI secretions.
Chapter 58: Drugs Affecting Gastrointestinal Motility

1. Describe the underlying processes in diarrhea and constipation and correlate them with the types of drugs used to treat these conditions.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with laxatives and antidiarrheal drugs.
3. Discuss the use of laxatives and antidiarrheal agents across the lifespan.
4. Compare and contrast the prototype laxatives and antidiarrheals with other agents in their class and with other classes of laxatives and antidiarrheals.
5. Outline the nursing considerations, including important teaching points, for patients receiving laxatives and antidiarrheal agents.

Chapter 59: Antiemetic Agents

1. Outline the vomiting reflex, including factors that stimulate it and mechanisms for measures used to block it.
2. Describe the therapeutic actions, indications, pharmacokinetics, contraindications and cautions, most common adverse reactions, and important drug–drug interactions associated with each of the classes groups of antiemetic agents.
3. Discuss the use of antiemetics across the lifespan.
4. Compare and contrast the prototype antiemetics with other agents in their class and with other classes of antiemetics.
5. Outline the nursing considerations, including important teaching points, for patients receiving antiemetics.
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Notes to Instructors
(List information about optional topics, departmental exams, etc)

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