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ARKANSAS TECH UNIVERSITY

DEPARTMENT OF NURSING



PHARMACOLOGY I

NUR 3402

Spring 2017

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ARKANSAS TECH UNIVERSITY  
DEPARTMENT OF NURSING

**COURSE:** NUR 3402

**TITLE:** PHARMACOLOGY

**CREDIT HOURS:** TWO (2) HOURS

**CONTACT HOURS:** TWO HOURS PER WEEK

**COURSE FACULTY:**

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**INSTRUCTIONAL RESOURCES:**

**Required Textbooks:**

Frandsen, G., & Pennington, S. (2014) Abrams' Clinical Drug Therapy:  
Rationales for Nursing Practice, 10<sup>th</sup> Edition.

**Recommended Textbooks:** Study Guide to Accompany Clinical Drug Therapy

## **COURSE/CATALOG DESCRIPTION:**

This course focuses on the relationships between the action of drugs, their effects and the contraindications for their administration. The relationship between specific patient needs and the type of drugs that would be effective to meet those needs will be analyzed. The nursing care related to each type of drug and the rationales for the care will be included.

## **Justification/Rationale for the Course**

By the completion of this course the student will progress toward student learning outcomes 1, 2, 3, and 4.

This upper division professional nursing course provides opportunities for the student to apply knowledge and skills from the general education component and from nursing courses to the care of individuals and families.

## **Course Objectives:**

On successful completion of this course, the nursing student will be able to:

1. Understand the role of pharmacokinetics and pharmacodynamics in medication administration.
2. Utilize the nursing process in medication administration.
3. Discuss nursing implications associated with medication administration.
4. Identify patient education needs pertinent to medications.
5. Discuss side effects, adverse effects and precautionary measures to be taken with various medications.
6. Explore the legal and ethical issues associated with medication administration.

## CONDUCT OF THE COURSE:

### Teacher Role:

Demonstrator, Evaluator, Facilitator, Resource Person, Role Model, Communicator, and Supporter.

### Student Role:

Learner, Teacher, Advocate, Care Giver, and Communicator.

### Teaching-Learning Strategies:

Lecture and discussion, simulation, charts, diagrams, and audiovisual materials, and critical thinking activities.

### Evaluation:

#### 1. Grading Scale

A = 90 - 100

B = 80 - 89

C = 75 - 79

D = 68 - 74

F = 67 and below

2. A grade of "C" or above must be achieved in every nursing course in order to progress in the Nursing Program. There will be no rounding of grades. All tests and other assignments will be carried to the hundredth. A 74.5%-74.99% will not round at the end of the semester to a 75%.
3. You must complete all exams with a cumulative grade of 75 to successfully pass the course.
4. A semester grade of "I" or "Incomplete" will be given to those students whose work is incomplete because of illness or other circumstances beyond the student's control. This grade will be assigned at the discretion of the instructor according to the amount of time missed, the ability of the student to complete the necessary assignments, and the quality of the student's previous work. (See Student Handbook)

5. Failure to meet course requirements will result in an "Incomplete" grade for the course.
6. Examinations will be taken at designated times. If a student cannot take the examination at the scheduled time, he/she is responsible for contacting the instructor prior to scheduled testing to make arrangements for making up the examination. Make-up examinations will be essay or objective in nature at the discretion of the instructor and will be scheduled on the first day the student returns to class.
7. Students with special needs or disabilities will inform the instructor at the beginning of the course. Any testing conducted at the testing center will be according to class test date schedule. No exceptions.
8. Students who wish to review completed tests must do so by the next class day. No exceptions.
9. Written Examinations:
 

Four (4) Unit Tests.....	70% (17.5% each test)
Quizzes/Study Guide.....	10%
Comprehensive Final Exam.....	<u>20%</u>
	100%
10. Students who drop/fail Pharmacology I must prove competency in other Level I courses if reaccepted into program.

Professional Activities.....Maximum of 2 points from SNA (only after completion of course and you must have been successful in course in order for SNA points to apply)

## **Policies**

### **Class Attendance:**

1. Regular class attendance is considered essential if the student is to receive maximum benefit from the course. ***The student is responsible for attending all classes as scheduled and on time.*** Control of class attendance is vested in the teacher. Please refer to Tardy and Attendance Policy in Student Handbook for detailed information.

2. Students consistently tardy to class may be subject to class dismissal at discretion of the instructor.
3. Only officially invited guests are to attend nursing classes.

### **Dress and Behavior:**

1. The nursing student is expected to dress appropriately while attending class.
2. Smoking is not allowed in any classroom.
3. Disruptive behavior will not be tolerated.
4. No recording devices in class without permission from the instructor. This includes videoing and/or social media websites.
5. No wearing of hats, caps or hoods during class/testing.
6. No reproduction of test questions at any time. During test reviews, there will be no photographing of exam questions, recording of the test review nor taking notes of exam questions. Violations will be subject to grade reduction or dismissal from the course.
7. No bathroom breaks during testing.
8. Asking questions during testing is strongly discouraged.

### **Cell Phone Policy**

There is a **NO cell phone policy for all upper division testing/test review**. This includes paper/pencil testing, test review, cooperative testing, and computer testing. If you are discovered with having a cell phone on your person, this will be considered a violation of the Academic Honesty Policy. If we discover that you have your cell phone with you during a unit exam/cooperative testing or unit exam review **you will receive a 0 for the test grade**.

## **Discrimination Statement:**

Arkansas Tech University does not discriminate on the basis of color, sex, sexual orientation, gender identity, race, age, national origin, religion, veteran status, genetic information, or disability in any of our practices, policies, or procedures. If you have experienced any form of discrimination or harassment, including sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the institution. If you report such an incident of misconduct to a faculty or staff member, they are required by law to notify Arkansas Tech University's Title IX Coordinator and share the basic fact of your experience. The Title IX Coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus. For more information please visit: <http://www.atu.edu/titleix/index.php>.

## **Disability Statement:**

Arkansas Tech University adheres to the requirements of the Americans with Disabilities Act in order to prevent barriers to academic accessibility. If you need an accommodation due to a disability, please contact the ATU Office of Disability Services, located in Doc Bryan Student Center, Suite 171, or visit <http://www.atu.edu/disabilities/index.php>.

## **Academic Honesty**

Students are expected to be honest and truthful in both classroom and practicum experiences. They are expected to adhere to the Code of Ethics and uphold current standards of care. Students are referred to the Arkansas Tech University Student Handbook for more specific regulations regarding academic honesty.

Students are expected to:

- a. Perform their assigned tasks in the practicum experiences. Students should have the permission of the clinical instructor before using assistance from the staff.
- b. Notify the instructor immediately of any clinical error made so that steps can be taken to prevent harm to the patient.
- c. Present written work that is theirs alone.
- d. Correctly document any materials from a textbook, pamphlet, journal, etc., that is used for an assignment.
- e. Be honest and truthful when writing clinical logs and giving verbal or written reports regarding patient care or the student's clinical experiences or assignments.
- f. Only use authorized devices or materials for an examination and not copy from other students' papers.
- g. Document material correctly. Plagiarism is defined as stealing and presenting as one's own ideas or words of another, or not documenting material correctly. Student papers may be evaluated by [turnitin.com](http://turnitin.com) which can detect plagiarism. For the first occurrence of academic dishonesty, the student will receive an F. If there is a second occurrence, the student will be dismissed from the program. Students are referred to the ATU catalog and handbook for policies regarding plagiarism.

## **Abilities and Skills Policy**

Students must comply with the Abilities and Skills policy while taking this course. Please see the Arkansas Tech University Student Handbook.

# NUR 3402 PHARMACOLOGY

## FOCUS A: Introduction to Pharmacology

### OBJECTIVES

The student will:

1. Define a prototype drug.
2. Distinguish between generic and trade names of drugs.
3. Describe the main categories of controlled substances in relation to therapeutic use, potential for abuse, and regulatory requirements.
4. Identify the multiple safeguards that are in place to promote drug safety in packaging, drug laws, and approval processes.
5. Recognize initiatives designated to enhance safe drug administration.
6. Develop personal techniques for learning about drugs and using drug knowledge in patient care.
7. Identify authoritative sources of drug information.
8. Differentiate between pharmacology and drug therapy.
9. Discuss cellular physiology in relation to drug therapy.
10. Describe the main pathways and mechanisms by which drugs cross biologic membranes and move through the body.
11. Explain each process of pharmacokinetics.
12. Discuss the clinical usefulness of measuring serum drug levels.
13. Describe major characteristics of the receptor theory of drug action.
14. Differentiate between agonist drugs and antagonist drugs.
15. List drug-related and patient-related variables that affect drug actions.
16. Discuss mechanisms and potential effects of drug–drug interactions.
17. Identify signs and symptoms that may occur with adverse drug effects on major body systems.
18. Discuss general management of drug overdose and toxicity.
19. Discuss selected drug antidotes.
20. Apply the rights of medication administration in the care of a patient.
21. Illustrate knowledge needed to administer medications to a patient.
22. Identify and interpret the drug orders for medication administration.
23. Demonstrate the ability to calculate drug dosages accurately.
24. Apply the steps of the nursing process in the administration of medications.
25. Demonstrate safe and accurate administration of medications.
26. Apply evidence-based practice research in the administration of medications.
27. Identify alternative or complementary therapy that may potentiate, negate, or cause toxicity with prescribed medications.
28. Understand pharmacodynamics and pharmacokinetic changes related to age in older adults.
29. Understand the relevance of the Beers Criteria to medication administration in the aging population.
30. Identify the physiological changes associated with increased age related to pharmacokinetics (absorption, distribution, metabolism, and excretion) of medications.
31. Understand the effect of polypharmacy on the medication response of older adults.
32. Implement patient education about medications to prevent medication-related reactions and adverse effects.

### LEARNING ACTIVITIES

#### **Required Reading:**

Frandsen, & Pennington (2014) Ch.1, 2, 3, 5

#### **Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

Study Guide Ch. 1, 2, 3, 5

# NUR 3402 PHARMACOLOGY

## FOCUS E: Hypertension/CHF/Diuretics

### OBJECTIVES

The student will:

1. Understand the pathophysiology of right-sided and left-sided heart failure.
2. Identify the major manifestations of heart failure.
3. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the inotrope (cardiac glycoside) drug class.
4. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the phosphodiesterase inhibitors (cardiotonic–inotropic agents).
5. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for human B-type natriuretic peptide.
6. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for adjuvant drugs used in the treatment of heart failure.
7. Implement the nursing process in the care of patients undergoing drug therapy for heart failure.
8. Identify effects produced by stimulation of alpha- and beta-adrenergic receptors.
9. Discuss use of epinephrine to treat anaphylactic shock, cardiac arrest, and acute bronchospasm.
10. Identify patients at risk for the adverse effects associated with adrenergic drugs.
11. List commonly used over-the-counter preparations and herbal preparations that contain adrenergic drugs.
12. List characteristics of adrenergic drugs in terms of etiology, pathophysiology, and clinical manifestations, along with pharmacokinetics, action, use, adverse effects, contraindications, and nursing implications in use of adrenergic agents.
13. Discuss using adrenergic drugs in special patient populations.
14. Teach patients about safe, effective use of adrenergic drugs.
15. Describe signs and symptoms of toxicity due to noncatecholamine adrenergic drugs and how to treat this condition.
16. Understand the nursing process for using adrenergic drugs.
17. Describe factors that regulate blood pressure.
18. Describe how hypertension is classified.
19. Discuss nonpharmacologic measures to control hypertension.
20. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the angiotensin-converting enzyme inhibitors.
21. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the angiotensin II receptor blockers.
22. Describe the rationale for using combination drugs in the management of hypertension.
23. Review the effects of alpha-adrenergic blockers, beta-adrenergic blockers, calcium channel blockers, and diuretics in the management of hypertension.
24. Apply the nursing process in the care of patients with hypertension.
25. Recognize normal renal physiology and the conditions requiring diuretic administration.
26. Describe the thiazide diuretics in terms of their prototype, mechanism of action, indications for use, major adverse effects, and nursing implications.
27. Describe the loop diuretics in terms of their prototype, mechanism of action, indications for use, major adverse effects, and nursing implications.
28. Describe the potassium-sparing diuretics in terms of their prototype, mechanism of action, indications for use, major adverse effects, and nursing implications.
29. Discuss the rationale for using combination products containing a potassium-losing and a potassium-sparing diuretic.
30. Discuss the rationale for concomitant use of a loop diuretic and a thiazide or related diuretic.
31. Understand how to apply the nursing process in the care of patients receiving diuretics.

### LEARNING ACTIVITIES

#### **Required Reading:**

Frandsen & Pennington (2014) Ch. 24, 27, 28, 32

**Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

## NUR 3402 PHARMACOLOGY

### FOCUS C: Respiratory System/TB Drugs

#### OBJECTIVES

The student will:

1. Describe characteristics of selected upper respiratory disorders and symptoms.
2. Identify the prototype drug for each drug class.
3. Discuss nasal decongestants in terms of their action, use, contraindications, adverse effects, and nursing implications.
4. Describe antitussive agents in terms of their action, use, contraindications, adverse effects, and nursing implications.
5. Describe expectorants in terms of their action, use, contraindications, adverse effects, and nursing implications.
6. Discuss mucolytics in terms of their action, use, contraindications, adverse effects, and nursing implications.
7. Discuss the advantages and disadvantages of using combination products to treat the common cold.
8. Understand how to use the nursing process in the care of patients receiving nasal decongestants, antitussives, expectorants, and mucolytic agents.
9. Delineate effects of histamines on selected body tissues.
10. Describe the types of hypersensitivity or allergic reactions.
11. Identify the effects of histamine that are blocked by histamine1 (H1) receptor antagonist drugs.
12. Discuss first-generation H1 receptor antagonists in terms of prototype, indications and contraindications, major adverse effects, interactions, and administration.
13. Describe second-generation H1 receptor antagonists in terms of prototype, indications and contraindications, major adverse effects, interactions, and administration.
14. Understand how to use the nursing process in the care of patients receiving antihistamines.
15. Describe the asthma and bronchoconstriction in terms of its pathophysiology.
16. Compare and contrast the short-acting (rescue) and the long-term maintenance inhaled beta2-adrenergic agonists.
17. Identify the prototype drug from each drug class used to treat asthma and bronchoconstriction.
18. Describe drugs used to treat asthma and bronchoconstriction in terms of mechanism of action, indications for use, major adverse effects, and nursing implications.
19. Understand how to use the nursing process in the care of patients with asthma and bronchoconstriction.
20. Describe the etiology and pathophysiology of tuberculosis and Mycobacterium avium complex.
21. Describe the characteristics of latent, active, and drug-resistant tuberculosis.
22. Describe drug therapy for tuberculosis, including the rationale for multiple-drug therapy.
23. List the action, uses, adverse effects, and nursing implications of first-line antitubercular drugs.
24. Describe how second-line antitubercular drugs are added to drug regimens to treat multidrug-resistant tuberculosis.
25. Describe the drugs used to prevent or treat Mycobacterium avium complex.
26. Discuss ways to increase adherence to antitubercular drug therapy regimens.
27. Understand how to implement the nursing process in the care of patients undergoing drug therapy for tuberculosis.

#### LEARNING ACTIVITIES

##### **Required Reading:**

Frandsen & Pennington (2014) Ch. 29, 30, 31, 20

##### **Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

Study Guide Ch. 29, 30, 31, 20

# NUR 3402 PHARMACOLOGY

## FOCUS D: Antidysrhythmics/Antianginals

### OBJECTIVES

The student will:

1. Give an overview of the cardiac electrophysiology and an outline of specific cardiac dysrhythmias that affect heart rhythm, heart rate, or both.
2. Describe principles of therapy in the management of dysrhythmias, including measures that do not involve antidysrhythmic drugs.
3. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for class I sodium channel blockers.
4. Identify the prototype and outline the action, use, adverse effects, contraindications, and nursing implications for beta-adrenergic blockers.
5. Identify the prototype and explain the action, use, adverse effects, contraindications, and nursing implications for potassium channel blockers.
6. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for calcium channel blockers.
7. Describe the nursing process implications and actions related to caring for patients using selected antidysrhythmic drugs.
8. Recognize the etiology, pathophysiology, and clinical manifestations of angina.
9. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications for the organic nitrates.
10. Identify the prototype and outline the actions, use, adverse effects, contraindications, and nursing implications for the beta-adrenergic blockers.
11. Identify the prototype and describe the actions, use, adverse effects, contraindications, and nursing implications for the calcium channel blockers.
12. Apply the nursing process in the care of patients with angina.

### LEARNING ACTIVITIES

#### **Required Reading:**

Frandsen & Pennington (2014) Ch. 25, 26

#### **Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

Study Guide Ch. 25, 26

# NUR 3402 PHARMACOLOGY

## FOCUS G: Antibiotics/Drugs affecting Infection

### OBJECTIVES

The student will:

1. Identify the common etiologies of inflammation.
2. Discuss the pathophysiology of inflammation.
3. Describe, in general, the groups of drugs used to treat inflammation.
4. Identify the common pathogens and methods of infection control.
5. Discuss the pathophysiology of infection.
6. Discuss ways to minimize emergence of drug-resistant microorganisms.
7. Discuss ways to increase the benefits and decrease the risk associated with antimicrobial drug therapy.
8. Know how to apply the nursing process to the care of the patient who is receiving anti-microbial therapy.
9. Describe general characteristics of beta-lactam antibiotics.
10. Discuss the penicillins in relation to effectiveness, safety, spectrum of antibacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
11. Recognize the importance of questioning patients about allergies before the initial dose of all drugs, especially penicillins.
12. Describe characteristics of beta-lactamase inhibitor drugs.
13. Give the rationale for combining a penicillin and a beta-lactamase inhibitor drug.
14. Discuss the cephalosporins in relation to effectiveness, safety, spectrum of antibacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
15. Discuss the carbapenems in relation to effectiveness, safety, spectrum of antibacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
16. Discuss the one monobactam drug in relation to effectiveness, safety, spectrum of anti-bacterial activity, mechanism of action, indications for use, administration, observation of patient response, and teaching of patients.
17. Use the nursing process in the care of patients receiving beta-lactam antibacterials.
18. State the rationale for the increasing use of single daily doses of aminoglycosides.
19. Discuss the importance of measuring serum drug levels during aminoglycoside therapy.
20. Describe measures to decrease nephrotoxicity and ototoxicity with aminoglycosides.
21. Identify characteristics of aminoglycosides and fluoroquinolones in relation to effectiveness, safety, spectrum of antimicrobial activity, indications for use, administration, and observation of patient responses.
22. Recognize factors influencing selection and dosage of aminoglycosides and fluoroquinolones.
23. Describe characteristics, uses, adverse effects, and nursing process implications of fluoroquinolones.
24. Discuss principles of using aminoglycosides and fluoroquinolones in renal impairment and critical illness.
25. Identify the prototype and describe the characteristics, action, use, adverse effects, contraindications, and nursing implications of the tetracyclines.
26. Identify the prototype and describe the characteristics, action, use, adverse effects, contraindications, and nursing implications of the sulfonamides.
27. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the adjuvant urinary antiseptic agents used in the treatment of urinary tract infections.
28. Implement the nursing process in the care of patients being treated with tetracyclines, sulfonamides, or urinary antiseptics.
29. Describe the characteristics and specific uses of macrolide and ketolides anti-infective agents.
30. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications of macrolides.
31. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications of ketolides.
32. Describe the action, use, adverse effects, contraindications, and nursing implications of miscellaneous anti-infective agents.
33. Implement the nursing process in the care of patients being treated with macrolides, ketolides, and other miscellaneous anti-infective agents.

### LEARNING ACTIVITIES

#### **Required Reading:**

Frandsen & Pennington (2014) Ch. 13, 16, 17, 18, 19

#### **Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

Study Guide Ch. 13, 16, 17, 18, 19

# NUR 3402 PHARMACOLOGY

## FOCUS B: Digestive System Drugs

### OBJECTIVES

The student will:

1. Describe the main elements of peptic ulcer disease and gastroesophageal reflux disease.
2. Discuss antacids in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
3. Describe histamine<sub>2</sub> receptor antagonists in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
4. Discuss proton pump inhibitors in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
5. Identify the adjuvant medications used to treat peptic ulcer and gastroesophageal reflux disease.
6. Understand how to use the nursing process in the care of patients receiving antacids, proton pump inhibitors, and histamine<sub>2</sub> receptor antagonists.
7. Identify patients at risk for developing nausea and vomiting.
8. Discuss the phenothiazines in terms of indications and contraindications for use, routes of administration, and major adverse effects.
9. Describe selected antihistamines used to control nausea and vomiting in terms of indications and contraindications for use, routes of administration, and major adverse effects.
10. Discuss the 5-hydroxytryptamine<sub>3</sub> receptor antagonists in terms of indications and contraindications for use, routes of administration, and major adverse effects.
11. Describe the substance P/neurokinin 1 antagonist aprepitant in terms of indications and contraindications for use, routes of administration, and major adverse effects.
12. Identify the prototype drug for each drug class.
13. Identify nonpharmacologic measures to reduce nausea and vomiting.
14. Understand how to use the nursing process in the care of patients receiving drugs for the management of nausea and vomiting.
15. Discuss the etiology, physiology, and clinical manifestations for constipation and elimination problems.
16. Educate patients about nonpharmacologic measures to prevent or treat constipation.
17. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the laxatives.
18. Identify the prototype and describe the action, use, contraindications, adverse effects, and nursing implications of the cathartics.
19. Identify the prototype, indications, dosages, and routes for the miscellaneous agents used to treat constipation and other conditions.
20. Understand how to use the nursing process in the care of patients with constipation.
21. Identify the common causes of diarrhea.
22. Identify patients at risk for development of diarrhea.
23. Describe opioid-related antidiarrheal agents in terms of the prototype, indications and contraindications for use, routes of administration, and major adverse effects.
24. Identify adjuvant drugs used to manage diarrhea.
25. Understand how to use the nursing process in the care of patients receiving drug therapy for diarrhea.

### LEARNING ACTIVITIES

#### **Required Reading:**

Frandsen & Pennington, Lawman (2014) Ch. 35, 36, 37, 38

#### **Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

Study Guide Ch. 35, 36, 37, 38

# NUR 3402 PHARMACOLOGY

## FOCUS H: Antidiabetic Drugs

### OBJECTIVES

The student will:

1. Differentiate between type 1 and type 2 diabetes mellitus.
2. Understand the major effects of endogenous insulin on body tissues.
3. Identify the clinical manifestations of type 1 and type 2 diabetes mellitus.
4. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the insulins.
5. Discuss characteristics of the various types of insulins and insulin analogs.
6. Identify the various prototypes and describe the actions, uses, adverse effects, contraindications, and nursing implications for the oral antidiabetic drugs.
7. Identify the different prototypes and describe the actions, uses, adverse effects, contraindications, and nursing implications for the amylin analogs, incretin mimetics, and dipeptidyl peptidase-4 (DPP-4) inhibitors.
8. Implement the nursing process in the care of patients receiving medications for the treatment of diabetes mellitus.
9. Explain the benefits of maintaining glycemic control in preventing complications of diabetes.
10. Assist patients or caregivers in learning how to manage diabetes care, including administration of medication agents used to manage diabetes.
11. Assess and monitor patients' adherence to prescribed management strategies.

### LEARNING ACTIVITIES

**Required Reading:**

Frandsen & Pennington (2014) Ch. 39

**Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

Study Guide Ch. 39

## NUR 3402 PHARMACOLOGY

### FOCUS I: Pain Control Medications

#### OBJECTIVES

The student will:

1. Discuss the role of prostaglandins in the etiology of pain, fever, and inflammation.
2. Identify the major manifestations of fever and inflammation.
3. Understand the pathophysiology of osteoarthritis.
4. Understand the pathophysiology of gout.
5. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the salicylates.
6. Identify the action, use, adverse effects, contraindications, and nursing implications for acetaminophen.
7. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the propionic acid derivatives.
8. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the oxicam derivatives.
9. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications of the acetic acid derivatives.
10. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications of the selective COX-2 inhibitors.
11. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the mitotic agents.
12. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for uricosuric medications.
13. Know how to implement the nursing process in the care of patients undergoing drug therapy for pain, fever, and inflammation.
14. Understand the physiologic effects of endogenous corticosteroids.
15. Identify the pathophysiology of adrenal cortex disorders.
16. Describe the action and the clinical indications for use of exogenous corticosteroids.
17. Understand the contraindications and adverse effects of corticosteroids as well as the nursing implications of their use.
18. Analyze how other drugs and substances as well as other factors may affect the need for corticosteroids.
19. Apply the nursing process when a patient is administered a corticosteroid.
20. Categorize the types of pain.
21. Recognize the pathophysiology associated with pain.
22. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the opioid agonists.
23. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the opioid agonists/antagonists.
24. Discuss administration of preemptive analgesia in the treatment of pain related to surgery.
25. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the opioid antagonists.
26. Understand how to implement the nursing process in the care of the patient receiving opioid medications for pain.
27. Define local anesthesia.
28. Describe three types of local anesthesia.
29. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the amide local anesthetics.
30. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the ester local anesthetics.
31. Implement the nursing process in the care of patients receiving local anesthesia.
32. Define general anesthesia.
33. Describe the three phases of general anesthesia.
34. Describe the fundamental principles of balanced anesthesia.
35. Describe how inhalation anesthetics are delivered and describe how this process is different from intravenous anesthetics.
36. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the inhalation and intravenous general anesthetic agents.
37. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the

- neuromuscular blocking agents.
38. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for the adjuvant medications administered to patients receiving general anesthesia.
  39. Implement the nursing process in the care of patients receiving general anesthesia.
  40. Understand the pathophysiology of migraine headaches.
  41. Identify the major manifestations of tension headaches, cluster headaches, migraine headaches, and menstrual migraine headaches.
  42. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for nonsteroidal anti-inflammatory drugs administered as abortive therapy for migraines.
  43. Describe the action, use, adverse effects, contraindications, and nursing implications for acetaminophen–aspirin–caffeine combinations administered as abortive therapy for headaches.
  44. Identify the prototypes and describe the action, use, adverse effects, contraindications, and nursing implications for ergot alkaloids administered as abortive therapy.
  45. Identify the prototypes and describe the action, adverse effects, contraindications, and nursing implications for triptans administered as abortive therapy.
  46. Identify the prototype and describe the action, use, adverse effects, contraindications, and nursing implications for estrogen administered for menstrual migraines.
  47. Identify the medications used for the prevention of migraine headaches.
  48. Describe the action, use, adverse effects, contraindications, and nursing implications for antiemetic drugs used in the treatment of migraine headache.
  49. Implement the nursing process of care of patients of all ages who suffer from migraine headaches.

## LEARNING ACTIVITIES

### **Required Reading:**

Frandsen & Pennington (2014) Ch. 14, 15, 48, 49, 50, 51

### **Before Class: REMEMBER STUDY GUIDE IS OPTIONAL**

Study Guide Ch. 14, 15, 48, 49, 50, 51