

# **Complete Test Bank Lehne's Pharmacology for Nursing Care 11th Edition Chapter 1-112**

## **Chapter 01: Orientation to Pharmacology**

### **Burchum: Lehne's Pharmacology for Nursing Care, 11th Edition**

#### **MULTIPLE CHOICE**

1. The nurse is teaching a patient how a medication works to treat an illness. To do this, the nurse will rely on knowledge of which topic?
  - a. Clinical pharmacology
  - b. Drug efficacy
  - c. Pharmacokinetics
  - d. Pharmacotherapeutics

ANS: D

Pharmacotherapeutics is the study of the use of drugs to diagnose, treat, and prevent conditions. Clinical pharmacology is concerned with all aspects of drug-human interactions. Drug efficacy measures the extent to which a given drug causes an intended effect. Pharmacokinetics is the study of the impact of the body on a drug.

PTS: 1

2. What is a desired outcome when a drug is described as easy to administer?
  - a. It can be stored indefinitely without need for refrigeration.
  - b. It does not interact significantly with other medications.
  - c. It enhances patient adherence to the drug regimen.
  - d. It is usually relatively inexpensive to produce.

ANS: C

A major benefit of drugs that are easy to administer is that patients taking them are more likely to comply with the drug regimen. Drugs that are easy to give may have the other attributes listed, but those properties are independent of ease of administration.

PTS: 1

3. A patient tells the nurse that an analgesic he will begin taking may cause drowsiness and will decrease pain up to 4 hours at a time. Based on this understanding of the drug's effects by the patient, the nurse will anticipate which outcome?
  - a. Decreased chance of having a placebo effect
  - b. Decreased motivation to take the drug
  - c. Improved compliance with the drug regimen
  - d. Increased likelihood of drug overdose

ANS: C

A drug is effective if it produces the intended effects, even if it also produces side effects. Patients who understand both the risks and benefits of taking a medication are more likely to comply with the drug regimen.

PTS: 1

## MULTIPLE RESPONSE

1. What are considered the 'Big Three' properties of an ideal drug? (*Select all that apply.*)
  - a. Irreversible action
  - b. Effectiveness
  - c. Safety
  - d. Selectivity
  - e. A recognizable trade name

ANS: B, C, D

The 'Big Three' properties of the ideal drug are effectiveness, safety, and selectivity.

PTS: 1

2. Before administering a medication, what does the nurse need to know to evaluate how individual patient variability might affect the patient's response to the medication? (*Select all that apply.*)
  - a. Chemical stability of the medication
  - b. Ease of administration
  - c. Family medical history
  - d. Patient's age
  - e. Patient's diagnosis

ANS: C, D, E

The family medical history can indicate genetic factors that may affect a patient's response to a medication. Patients of different ages can respond differently to medications. The patient's illness can affect how drugs are metabolized. The chemical stability of the medication and the ease of administration are properties of drugs.

PTS: 1

## Chapter 02: Application of Pharmacology in Nursing Practice

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## MULTIPLE CHOICE

1. A patient is using a metered-dose inhaler containing albuterol for asthma. The medication label instructs the patient to administer "2 puffs every 4 hours as needed for coughing or wheezing." The patient reports feeling jittery sometimes when taking the medication, and doesn't feel that the medication is always effective. Which action is outside the nurse's scope of practice?
  - a. Asking the patient to demonstrate the use of the inhaler
  - b. Assessing the patient's exposure to tobacco smoke
  - c. Auscultating lung sounds and obtaining vital signs
  - d. Suggesting that the patient use 1 puff to reduce side effects

ANS: D

It is not within the nurse's scope of practice to change the dose of a medication without an order from a prescriber. Asking the patient to demonstrate inhaler use helps the nurse to evaluate the patient's ability to administer the medication properly and is part of the nurse's evaluation. Assessing tobacco smoke exposure helps the nurse determine whether nondrug therapies, such as smoke avoidance, can be used as an adjunct to drug therapy. Performing a physical assessment helps the nurse evaluate the patient's response to the medication.

PTS: 1

2. A postoperative patient is being discharged home with acetaminophen/hydrocodone [Norco] for pain. The patient asks the nurse about using Tylenol for fever. Which statement by the nurse is correct?
  - a. "It is not safe to take over-the-counter drugs with prescription medications."
  - b. "Taking the two medications together poses a risk of drug toxicity."
  - c. "There are no known drug interactions, so this will be safe."
  - d. "Tylenol and Norco are different drugs, so there is no risk of overdose."

ANS: B

Tylenol is the trade name and acetaminophen is the generic name for the same medication. It is important to teach patients to be aware of the different names for the same drug to minimize the risk of overdose. Over-the-counter (OTC) medications and prescription medications may be taken together unless significant harmful drug interactions are possible. Even though no drug interactions are at play in this case, both drugs contain acetaminophen, which could lead to toxicity.

PTS: 1

3. The nurse is preparing to care for a patient who will be taking an antihypertensive medication. Which action by the nurse is part of the assessment step of the nursing process?
  - a. Asking the prescriber for an order to monitor serum drug levels
  - b. Monitoring the patient for drug interactions after giving the medication
  - c. Questioning the patient about over-the-counter medications
  - d. Taking the patient's blood pressure throughout the course of treatment

ANS: C

The assessment part of the nursing process involves gathering information before beginning treatment, and this includes asking about other medications the patient may be taking. Monitoring serum drug levels, watching for drug interactions, and checking vital signs after giving the medication are all part of the evaluation phase.

PTS: 1

4. A postoperative patient reports pain, which the patient rates as an 8 on a scale from 1 to 10 (10 being the most extreme pain). The prescriber has ordered acetaminophen [Tylenol] 650 mg PO every 6 hours PRN pain. What will the nurse do?
  - a. Ask the patient what medications have helped with pain in the past.
  - b. Contact the provider to request a different analgesic medication.
  - c. Give the pain medication and reposition the patient to promote comfort.

d. Request an order to administer the medication every 4 hours.

ANS: B

The nursing diagnosis for this patient is severe pain. Acetaminophen is given for mild to moderate pain, so the nurse should ask the prescriber to order a stronger analgesic medication. Asking the patient to tell the nurse what has helped in the past is part of an initial assessment and should be done preoperatively and not when the patient is having severe pain. Because the patient is having severe pain, acetaminophen combined with nondrug therapies will not be sufficient. Increasing the frequency of the dose of a medication for mild pain will not be effective.

PTS: 1

5. A patient newly diagnosed with diabetes is to be discharged from the hospital. The nurse teaching this patient about home management should begin by doing what?
- Asking the patient to demonstrate how to measure and administer insulin
  - Discussing methods of storing insulin and discarding syringes
  - Giving information about how diet and exercise affect insulin requirements
  - Teaching the patient about the long-term consequences of poor diabetes control

ANS: A

Because insulin must be given correctly to control symptoms and because an overdose can be fatal, it is most important for the patient to know how to administer it. Asking for a demonstration of technique is the best way to determine whether the patient has understood the teaching. When a patient is receiving a lot of new information, the information presented first is the most likely to be remembered. The other teaching points are important as well, but they are not as critical and can be taught later.

PTS: 1

6. The nurse receives an order to give morphine 5 mg IV every 2 hours PRN pain. Which action is *not* part of the six rights of drug administration?
- Assessing the patient's pain level 15 to 30 minutes after giving the medication
  - Checking the medication administration record to see when the last dose was administered
  - Consulting a drug manual to determine whether the amount the prescriber ordered is appropriate
  - Documenting the reason the medication was given in the patient's electronic medical record

ANS: A

Assessing the patient's pain after administering the medication is an important part of the nursing process when giving medications, but it is not part of the six rights of drug administration. Checking to see when the last dose was given helps ensure that the medication is given at the right time. Consulting a drug manual helps ensure that the medication is given in the right dose. Documenting the reason for a pain medication is an important part of the right documentation—the sixth right.

PTS: 1

7. A patient tells a nurse that a medication prescribed for recurrent migraine headaches is not working. What will the nurse do?
- Ask the patient about the number and frequency of tablets taken.
  - Assess the patient's headache pain on a scale from 1 to 10.
  - Report the patient's complaint to the prescriber.
  - Suggest biofeedback as an adjunct to drug therapy.

ANS: A

When evaluating the effectiveness of a drug, it is important to determine whether the patient is using the drug as ordered. Asking the patient to tell the nurse how many tablets are taken and how often helps the nurse determine compliance. Assessing current pain does not yield information about how well the medication is working unless the patient is currently taking it. The nurse should gather as much information about compliance, symptoms, and drug effectiveness as possible before contacting the prescriber. Biofeedback may be an effective adjunct to treatment, but it should not be recommended without complete information about drug effectiveness.

PTS: 1

8. A nurse is preparing to administer medications. Which patient would the nurse consider to have the greatest predisposition to an adverse reaction?
- A 30-year-old man with kidney disease
  - A 75-year-old woman with cystitis
  - A 50-year-old man with an upper respiratory tract infection
  - A 9-year-old boy with an ear infection

ANS: A

The individual with impaired kidney function would be at risk of having the drug accumulate to a toxic level because of potential excretion difficulties. Cystitis is an infection of the bladder and not usually the cause of excretion problems that might lead to an adverse reaction from a medication. A respiratory tract infection would not predispose a patient to an adverse reaction, because drugs are not metabolized or excreted by the lungs. A 9-year-old boy would not have the greatest predisposition to an adverse reaction simply because he is a child; nor does an ear infection put him at greater risk.

PTS: 1

9. A nurse consults a drug manual before giving a medication to an 80-year-old patient. The manual states that older adult patients are at increased risk for hepatic side effects. Which action by the nurse is correct?
- Contact the provider to discuss an order for pretreatment laboratory work.
  - Ensure that the drug is given in the correct dose at the correct time to minimize the risk of adverse effects.
  - Notify the provider that this drug is contraindicated for this patient.
  - Request an order to give the medication intravenously so that the drug does not pass through the liver.

ANS: A

The drug manual indicates that this drug should be given with caution to elderly patients. Getting information about liver function before giving the drug establishes baseline data that can be compared with post-treatment data to determine whether the drug is affecting the liver. Giving the correct dose at the correct interval helps to minimize risk, but without baseline information, the effects cannot be determined. The drug is not contraindicated.

PTS: 1

10. A patient has been receiving intravenous penicillin for pneumonia for several days and begins to complain of generalized itching. The nurse auscultates bilateral wheezing and notes a temperature of 38.5°C (101°F). Which is the correct action by the nurse?
- Administer the next dose and continue to evaluate the patient's symptoms.
  - Ask the prescriber if an antihistamine can be given to relieve the itching.
  - Contact the prescriber to request an order for a chest radiograph.
  - Hold the next dose and notify the prescriber of the symptoms.

ANS: D

Pruritus and wheezing are signs of a possible allergic reaction, which can be fatal; therefore, the medication should not be given and the prescriber should be notified. When patients are having a potentially serious reaction to a medication, the nurse should not continue giving the medication. Antihistamines may help the symptoms of an allergic reaction, but the first priority is to stop the medication. Obtaining a chest radiograph is not helpful.

PTS: 1

11. A postoperative patient has orders for morphine sulfate 1 to 2 mg IV every 1 hour PRN for severe pain and acetaminophen-hydrocodone [Norco] 5 mg PO every 4 to 6 hours PRN for moderate pain. The patient reports pain at a level of 8 on a scale of 1 to 10, with 10 being the worst pain. Which action by the nurse is appropriate?
- Administer acetaminophen-hydrocodone 5 mg PO every 4 hours.
  - Administer acetaminophen-hydrocodone 5 mg PO every 6 hours and change to every 4 hours if not effective.
  - Administer morphine sulfate 1 mg IV every 1 hour until pain subsides.
  - Administer morphine sulfate 2 mg IV and evaluate the patient's pain in 15 to 30 minutes.

ANS: D

With PRN medications, the schedule is not fixed and the administration of these medications depends on the patient's condition. It is the nurse's responsibility to assess the patient's condition and then give the appropriate PRN medication. In this case, the patient has severe pain and should receive MS IV. Either 1 or 2 mg may be given, but the nurse must evaluate the effectiveness of the pain medication within 15 to 30 minutes to help determine subsequent doses. Acetaminophen-hydrocodone is not appropriate because it is ordered for moderate pain and this patient reports severe pain. Giving MS IV every hour is not appropriate for a PRN medication unless the patient's condition warrants it.

PTS: 1

12. The nurse is teaching a patient about home administration of insulin to treat diabetes mellitus. As part of the teaching, the patient and nurse identify goals to maintain specific blood glucose ranges. This represents which aspect of the nursing process?
- Assessment
  - Evaluation
  - Implementation
  - Planning

ANS: D

In the planning step, the nurse delineates specific interventions directed at solving or preventing problems. When creating the care plan, the nurse defines goals, sets priorities, and establishes criteria for evaluating success. The assessment step involves collecting data about the patient. The evaluation step involves evaluating the medication effectiveness. The implementation step identifies actions that are taken to administer the drug.

PTS: 1

### **MULTIPLE RESPONSE**

1. A nurse is reviewing a patient's medical record before administering a medication. Which factors can alter the patient's physiologic response to the drug? (*Select all that apply.*)
- Ability to swallow pills
  - Age
  - Genetic factors
  - Gender
  - Height

ANS: B, C, D

Age, genetic factors, and gender influence an individual patient's ability to absorb, metabolize, and excrete drugs; therefore, these factors must be assessed before a medication is administered. A patient's ability to swallow pills, although it may determine the way a drug is administered, does not affect the physiologic response. Height does not affect response; weight and the distribution of adipose tissue can affect the distribution of drugs.

PTS: 1

### **Chapter 03: Drug Regulation, Development, Names, and Information** **Burchum: Lehne's Pharmacology for Nursing Care, 11th Edition**

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### **MULTIPLE CHOICE**

1. A nurse educator is conducting a continuing education class on pharmacology. To evaluate the learning of the nurses in the class, the nurse educator asks, "Which drug name gives information about the drug's pharmacologic classification?" Which is the correct response?
- Amoxicillin
  - Tylenol
  - Cipro
  - Motrin

ANS: A

Amoxicillin is the generic name, and the suffix “-cillin” indicates that it belongs to the penicillin class of antibiotics. Tylenol, Cipro, and Motrin are all trade names without segments that indicate their pharmacologic class.

PTS: 1

2. The FDA Amendments Act (FDAAA) was passed in 2007 to address which aspect of drug safety?
  - a. Allowing pharmaceutical companies to identify off-label uses of medications approved for other uses
  - b. Evaluating drug safety information that emerges after a drug has been approved and is in use
  - c. Expediting the approval process of the U.S. Food and Drug Administration (FDA) so that needed drugs can get to market more quickly
  - d. Requiring manufacturers to notify patients before removing a drug from the market

ANS: B

The FDAAA was passed to enable the Food and Drug Administration to continue oversight of a drug after granting it approval so that changes in labeling could be made as necessary and postmarketing risks could be tracked and identified. A provision of the FDA Modernization Act (FDAMA), passed in 1997, allows drug companies to promote their products for off-label uses as long as they promise to conduct studies to support their claims. Regulations to permit accelerated approval of drugs for life-threatening diseases were adopted in 1992 by the FDA. The requirement that drug companies notify patients 6 months before removing a drug from the market is a provision of the FDAMA.

PTS: 1

3. A nursing student asks a nurse about pharmaceutical research and wants to know the purpose of randomization in drug trials. The nurse explains that randomization is used to do what?
  - a. To ensure that differences in outcomes are the result of treatment and not differences in subjects
  - b. To compare the outcome caused by the treatment to the outcome caused by no treatment
  - c. To make sure that researchers are unaware of which subjects are in which group
  - d. To prevent subjects from knowing which group they are in and prevent preconception bias

ANS: A

Randomization helps prevent allocation bias, which can occur when researchers place subjects with desired characteristics in the study group and other subjects in the control group so that differences in outcome are actually the result of differences in subjects and not treatment. Comparing treatment outcome to no treatment outcome is the definition of a controlled study. The last two options describe the use of blinding in studies; blinding ensures that researchers or subjects (or both) are unaware of which subjects are in which group so that preconceptions about benefits and risks cannot bias the results.



PTS: 1

4. Someone asks a nurse about a new drug that is in preclinical testing and wants to know why it cannot be used to treat a friend's illness. Which statement by the nurse is correct?
- "A drug at this stage of development can be used only in patients with serious disease."
  - "At this stage of drug development, the safety and usefulness of the medication is unknown."
  - "Clinical trials must be completed to make sure the drug is safe to use in humans."
  - "Until postmarketing surveillance data are available, the drug cannot be used."

ANS: B

Preclinical testing must be completed before drugs can be tested in humans. In this stage, drugs are evaluated for toxicities, pharmacokinetic properties, and potentially useful effects. Some drugs can be used in patients before completion of Phase III studies, but this is after preclinical testing is complete. Clinical trials proceed in stages, and each stage has guidelines defining how a new drug may be used and which patients may receive it. Postmarketing surveillance takes place after a drug is in general use.

PTS: 1

5. A patient asks a nurse why drugs that have been approved by the FDA still have unknown side effects. What will the nurse tell the patient?
- Testing for all side effects of a medication would be prohibitively expensive.
  - Patients in drug trials often are biased by their preconceptions of a drug's benefits.
  - Researchers tend to conduct studies that will prove the benefits of their new drugs.
  - Subjects in drug trials do not always represent the full spectrum of possible patients.

ANS: D

All drug trials are limited by a relatively small group of subjects who may not have all the characteristics of people who will be using the drug; therefore, some side effects go undetected until the drug is in use. Although drug trials are very expensive, this is only an indirect reason that they do not detect all side effects before approval. In theory, well-designed drug trials, using blinded studies, minimize or eliminate subject bias. Designing studies to prove desired results is unethical.

PTS: 1

6. A nurse is teaching nursing students about the use of nonproprietary names for drugs. The nurse tells them which fact about nonproprietary names?
- They are approved by the FDA and are easy to remember.
  - They are assigned by the U.S. Adopted Names Council.
  - They clearly identify the drug's pharmacologic classification.
  - They imply the efficacy of the drug and are less complex.

ANS: B

Nonproprietary, or generic, names are assigned by the U.S. Adopted Names Council, which ensures that each drug has only one name. Trade names, or brand names, are approved by the FDA and are easier to remember. Some nonproprietary names contain syllables that identify the classification, although not all do. Drug names are not supposed to identify the use for the drug, although some brand names do so.

PTS: 1

## **Chapter 04: Pharmacokinetics**

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### **MULTIPLE CHOICE**

1. A patient tells the nurse that the oral drug that has been prescribed has caused a lot of stomach discomfort in the past. What will the nurse ask the prescriber?
  - a. Whether a sublingual form of the medication can be given
  - b. Whether the medication can be given by a parenteral route instead
  - c. Whether an enteric-coated form of the drug is available
  - d. Whether the patient can receive a sustained-release preparation of the drug

ANS: C

Enteric-coated drugs are preparations that have been coated with a material that dissolves in the intestines, not the stomach. This coating is used either to protect the drug from stomach acid and pepsin or to protect the stomach from a drug that can cause gastric upset. Sublingual forms often are used for drugs that undergo rapid inactivation during the first pass through the hepatic circulation so that the drug can be absorbed directly into the systemic circulation. Parenteral routes are more costly and less safe than oral administration and should not be used unless necessary. A sustained-release preparation is used to release the drug into the body over a specific period to reduce the number of daily doses required to sustain therapeutic drug levels.

PTS: 1

2. A patient claims to get better effects with a tablet of Brand X of a drug than with a tablet of Brand Y of the same drug. Both brands contain the same amount of the active ingredient. What does the nurse know to be most likely?
  - a. Advertising by pharmaceutical companies can enhance patient expectations of one brand over another, leading to a placebo effect.
  - b. Because the drug preparations are chemically equivalent, the effects of the two brands must be identical.
  - c. Tablets can differ in composition and can have differing rates of disintegration and dissolution, which can alter the drug's effects in the body.
  - d. The bioavailability of a drug is determined by the amount of the drug in each dose.

ANS: C

Even if two brands of a drug are chemically equivalent (ie, they have identical amounts of the same chemical compound), they can have different effects in the body if they differ in bioavailability. Tablets made by different manufacturers contain different binders and fillers, which disintegrate and dissolve at different rates and affect the bioavailability of the drug. Two brands may be chemically equivalent and still differ in bioavailability, which is not determined by the amount of drug in the dose.

PTS: 1

3. A patient receives a drug that has a narrow therapeutic range. The nurse administering this medication will expect to do what?
  - a. Administer the drug at intervals longer than the drug half-life.
  - b. Administer this medication intravenously.
  - c. Monitor plasma drug levels.
  - d. Teach the patient that maximum drug effects will occur within a short period.

ANS: C

A drug with a narrow therapeutic range is more difficult to administer safely, because the difference between the minimum effective concentration and the toxic concentration is small. Patients taking these medications must have their plasma drug levels monitored closely to ensure that they are getting an effective dose that is not toxic. Administering medications at longer intervals only increases the time required to reach effective plasma drug levels. Drugs that have a narrow therapeutic range may be given by any route and do not differ from other medications in the amount of time it takes for them to take effect, which is a function of a drug's half-life and dosing frequency.

PTS: 1

4. A patient is given a prescription for azithromycin [Zithromax] and asks the nurse why the dose on the first day is twice the amount of the dose on the next 4 days. Which reply by the nurse is correct?
  - a. "A large initial dose helps to get the drug to optimal levels in the body faster."
  - b. "The first dose is larger to minimize the first-pass effect of the liver."
  - c. "The four smaller doses help the body taper the amount of drug more gradually."
  - d. "Tubular reabsorption is faster with initial doses, so more is needed at first."

ANS: A

A large initial dose is often used as a loading dose to help get serum drug levels to plateau levels more quickly. Larger doses do not prevent first-pass effects in drugs susceptible to this type of metabolism. Tapering of doses sometimes is used to prevent rebound or withdrawal effects and is done by stepping down the amount of drug with each dose. Tubular reabsorption is a process that allows drugs to be reabsorbed from the urine into the blood.

PTS: 1

5. A nurse is giving an enteral medication. The patient asks why this method is preferable for this drug. How will the nurse reply?
  - a. "This route allows more rapid absorption of the drug."

- b. "This route is safer, less expensive, and more convenient."
- c. "This route is the best way to control serum drug levels."
- d. "This route prevents inactivation of the drug by digestive enzymes."

ANS: B

Parenteral routes include the intravenous, intramuscular, and subcutaneous routes. Enteral routes include oral administration, including pills and liquid suspensions. Enteral routes are safer, cheaper, and easier to use. Parenteral routes are used when rapid absorption, precise control of plasma drug levels, and prevention of digestive inactivation are important.

PTS: 1

6. The nurse is preparing to administer penicillin G intramuscularly to a child. The child's parents ask why the drug cannot be given in an oral liquid form. What is the nurse's reply?
- a. "This drug causes severe gastric upset if given orally."
  - b. "This drug has a narrow therapeutic range, and the dose must be tightly controlled."
  - c. "This drug is absorbed much too quickly in an oral form."
  - d. "This drug would be inactivated by enzymes in the stomach."

ANS: D

Penicillin G is inactivated by digestive enzymes in the stomach and cannot be given orally. It does not have a narrow therapeutic range.

PTS: 1

7. A provider has written an order for a medication: drug  $\times$  100 mg PO every 6 hours. The half-life for the drug is approximately 6 hours. The nurse is preparing to administer the first dose at 8:00 AM on Tuesday. On Wednesday, when will the serum drug level reach plateau?
- a. 2:00 AM
  - b. 8:00 AM
  - c. 2:00 PM
  - d. 8:00 PM

ANS: B

It takes four half-lives for a drug to reach plateau. Total body stores reach their peak at the beginning of the fifth dose of a drug if all doses are equal in amount; in this case, this will be at 8:00 AM the following day.

PTS: 1

8. An adult male patient is 1 day postoperative from a total hip replacement. On a pain scale of 0 to 10, with 10 being the greatest pain, the patient reports a pain level of 10. Which medication would be most appropriate for the nurse to administer to this patient?
- a. 60 mg morphine sulfate PO
  - b. 75 mg meperidine [Demerol] intramuscularly
  - c. 6 mg morphine sulfate intravenously
  - d. Fentanyl [Duragesic] patch 50 mcg transdermally