1. A nursing instructor is preparing a teaching plan for a group of nursing students about pharmacology. When describing this topic, the instructor would focus the discussion on which of the following as an essential aspect?
   A) Drug name
   B) Drug class
   C) Drug action
   D) Drug source
   Ans: C
   Feedback:
   Pharmacology is the study of drugs and their action on living organisms. Thus, an essential aspect of pharmacology is drug action. An understanding of the drug name, drug class, and drug source is important, but the most critical aspect related to pharmacology is how the drug acts in the body.

2. A nursing student is preparing to administer a prescribed drug to a patient. The student reviews information about the drug and its actions. Which of the following would be the best choice for obtaining this information? Select all that apply.
   A) Nursing instructor
   B) Nurse assigned to the patient
   C) Clinical drug reference
   D) Prescribing health care provider
   E) Clinical pharmacist
   Ans: C, E
   Feedback:
   Although the nursing student can ask the nursing instructor, the nurse assigned to the patient, and the prescribing health care provider for information about the drug, the best choices for drug information would include an appropriate drug reference and the clinical pharmacist.

3. When describing the various types of medications to a group of nursing students, a nursing instructor would identify which of the following as a source for deriving medications? Select all that apply.
   A) Plants
   B) Synthetic sources
   C) Mold
   D) Minerals
   E) Animals
   Ans: A, B, C, D, E
   Feedback:
   Medications are derived from natural sources, for example, plants, molds, minerals, and animals, as well as created synthetically in a laboratory.

4. Which of the following names may be assigned to a drug during the process of development? Select all that apply.
   A) Chemical name
   B) Official name
   C) Pharmacologic name
   D) Trade name
   E) Nonproprietary name
   Ans: A, B, D, E
   Feedback:
   Throughout the process of development, drugs may have several names assigned to them including a chemical name, a generic (nonproprietary) name, an official name, and a trade or brand name.

5. A drug may be classified by which of the following? Select all that apply.
   A) The chemical type of the drug's active ingredient
   B) The way the drug is used to treat a specific condition
   C) The generic name of the drug
   D) The trade name of the drug
   E) The nonproprietary name of the drug
   Ans: A, B
   Feedback:
   A drug may be classified by the chemical type of the active ingredient or by the way it is used to treat a particular condition. Generic, trade, and nonproprietary refer to how a drug is named.

6. A group of nursing students are reviewing information about the process of drug development in the United States. The students demonstrate understanding of this process when they identify that which of the following categories are assigned by the Food and Drug Administration to newly approved drugs? Select all that apply.
   A) Metabolite
   B) Noncontrolled substance
   C) Prescription
   D) Nonprescription
   E) Controlled substance
   Ans: C, D, E
   Feedback:
   Once drugs are approved for use, the FDA assigns the drug to one of the following categories: prescription, nonprescription, or controlled substance. Metabolite refers to the inactive form of the drug. Noncontrolled substance is a term that is not used.

7. Which of the following would be most important for the nurse to do to ensure the safe use of prescription drugs in the institutional setting? Select all that apply.
   A) Administering drugs
   B) Monitoring clients for drug effects
   C) Prescribing drugs
   D) Evaluating clients for toxic effects
   E) Educating clients/caregivers about drugs
   Ans: A, B, D, E
   Feedback:
   In the institutional setting, the nurse's role to ensure safe use of prescription drugs includes administering drugs, monitoring drug effects, evaluating for toxic effects, and educating clients and caregivers about drugs.

8. The nurse is helping a client review a prescription from the health care provider. When examining the prescription, which of the following would the nurse expect to find documented? Select all that apply.
   A) Name of the drug
   B) Dosage of the drug
   C) Route of drug administration
   D) Times of drug administration
   E) Licensed prescriber's signature
   Ans: A, B, C, D, E
   Feedback:
   The prescription must contain the client's name, the name of the drug, the dosage, the method and times of administration, and the signature of the licensed health care provider prescribing the drug.

9. After teaching a group of nursing students about nonprescription drugs, the nursing instructor determines that the teaching was successful when the students identify which of the following? Select all that apply.
   A) They require a licensed health care provider's signature.
   B) They are referred to as over-the-counter drugs.
   C) They can be taken without risk to the client.
   D) They have certain labeling requirements.
   E) They should be taken only as directed on the label.
   Ans: B, D, E
   Feedback:
   Nonprescription drugs are often referred to as over-the-counter (OTC) drugs. They do not require a prescription (a licensed health care provider's signature) but do not come without risk to the client. The federal government has imposed labeling requirements of OTC drugs and they should only be taken as directed on the label unless under the supervision of a health care provider.

10. A nursing student is reviewing information about the Controlled Substances Act of 1970. The student would expect to find which of the following as being regulated for drugs classified as controlled substances? Select all that apply.
    A) Manufacturing
    B) Elimination
    C) Distribution
    D) Formulation
    E) Dispensing
    Ans: A, C, E
    Feedback:
    The Controlled Substances Act of 1970 regulates the manufacture, distribution, and dispensing of drugs classified as controlled substances. Elimination refers to the excretion of drugs from the body, a pharmacokinetic activity. The act does not address formulation of the drug.

11. When reviewing information about the Orphan Drug Program, which of the following would the nurse expect to find? Select all that apply.
    A) The program encourages the development and marketing of products to treat rare diseases.
    B) The program grants provisional approval with a written commitment from the drug company to formally demonstrate client benefits.
    C) The program provides for incentives, such as research grants, protocol assistance, and special tax credits, to develop products to treat rare diseases.
    D) The program grants 7 years of exclusive marketing rights to the manufacturer if approved.
    E) The program accelerates approval of drugs based on preliminary evidence before formal demonstration of client benefits.
    Ans: A, C, D
    Feedback:
    The Orphan Drug Program encourages the development and marketing of products used to treat rare diseases. The program provides incentives to encourage manufacturers to develop orphan drugs, and if approved, the manufacturer has 7 years of exclusive marketing rights. Accelerated programs involve provisional approval and approval based on preliminary evidence.

12. After teaching a group of nursing students about pharmacokinetics, the instructor determines that the teaching was successful when the students identify which of the following as a phase? Select all that apply.
    A) Absorption
    B) Distribution
    C) Administration
    D) Metabolism
    E) Excretion
    Ans: A, B, D, E
    Feedback:
    The pharmacokinetic phases are absorption, distribution, metabolism, and excretion. The acronym ADME is a helpful way to remember the pharmacokinetic phases.

13. A nurse is preparing a teaching plan for a client who is prescribed an oral medication. As part of the plan, the nurse expects to describe the importance of absorption. The nurse would integrate knowledge of which of the following as a mechanism for absorption in the gastrointestinal tract? Select all that apply.
    A) Active transport
    B) Transposition
    C) Passive transport
    D) Endocytosis
    E) Pinocytosis
    Ans: A, C, E
    Feedback:
    During absorption, the drug particles in the GI tract are moved into the body fluids via active transport, passive transport, and pinocytosis.

14. After teaching a group of nursing students about the half-life of a drug, the instructor determines the need for additional teaching when the students identify which of the following as true? Select all that apply:
    A) Half-life can be decreased in clients with renal disease.
    B) Half-life can help determine dosing frequency.
    C) Half-life does not change throughout a client's life.
    D) Liver disease can increase half-life.
    E) Half-life is the measure of the rate at which drugs are removed from the body.
    Ans: A, C
    Feedback:
    Half-life is the measure of the rate at which drugs are removed from the body, and any difficulty in excreting a drug increases half-life, including liver or kidney disease or advanced age.

15. A nurse is assessing a client after administering a prescribed medication. Which of the following would alert the nurse to suspect that the client is developing anaphylactic shock? Select all that apply.
    A) Bradycardia
    B) Hypertension
    C) Dyspnea
    D) Urticaria
    E) Angioedema
    Ans: C, D, E
    Feedback:
    The symptoms of anaphylactic shock are dyspnea, feeling of fullness in the throat, cough, wheezing, extremely low blood pressure, tachycardia (heart rate >100 bpm), palpitations, syncope, cardiac arrest, urticaria, angioedema, pruritus, sweating, nausea, vomiting, and abdominal pain.

16. Which of the following would the nurse identify as a factor that alters drug response in children and infants? Select all that apply.
    A) Slower gastric emptying
    B) Greater surface area
    C) Less protein binding
    D) Decreased body water content
    E) Less cutaneous fat
    Ans: A, B, C, E
    Feedback:
    Children and infants are not small adults; therefore, they have altered pharmacokinetics. Factors that alter pharmacokinetics in children include slower gastric emptying, less cutaneous fat, greater surface area, increased body water content, less protein binding, and immature hepatic and renal function.

17. The FDA established a safety information and adverse events reporting program called MedWatch. Which individuals can access the MedWatch website to obtain safety alerts on drugs, devices, or dietary supplements? Select all that apply.
    A) Physicians
    B) Nurses
    C) Patients
    D) Pharmacists
    E) Caregivers
    Ans: A, B, C, D, E
    Feedback:
    Anyone can access the MedWatch website to obtain safety alerts on drugs, devices, or dietary supplements.

18. A nurse is preparing to administer a prescribed medication to a client. The nurse integrates knowledge of which of the following as a possible factor that could influence the drug response? Select all that apply.
    A) Age
    B) Polypharmacy
    C) Weight
    D) Sex
    E) Disease
    Ans: A, B, C, D, E
    Feedback:
    Drug response can be influenced by the following factors: age, polypharmacy, weight, sex, disease, and genetics.

19. A nurse is assessing a client and notes that the client has developed swelling of the eyelids and lips after administration of a prescribed medication. The nurse interprets this finding as specifically indicating which of the following?
    A) Mild allergic reaction
    B) Anaphylactic shock
    C) Angioedema
    D) Drug idiosyncrasy
    Ans: C
    Feedback:
    Angioedema is a type of allergic drug reaction manifested by the collection of fluid in the subcutaneous tissues, most commonly affecting the eyelids, lips, mouth, and throat. Allergic reactions can be manifested by a wide range of signs and symptoms such as itching, rashes, and hives. Anaphylactic shock is a serious allergic reaction that requires immediate medical attention. Drug idiosyncrasy describes any unusual or abnormal reaction to a drug, one that is different from the one normally expected.

20. Which of the following is true regarding the Dietary Supplement Health and Education Act (DSHEA)? Select all that apply.
    A) The act allows for DEA enforcement of the act.
    B) The act gives the FDA power to enforce the laws governed by the act.
    C) The act permits general health claims.
    D) The act permits curative health claims.
    E) The act defines specific substances as “dietary supplements.”
    Ans: B, C, E
    Feedback:
    The DSHEA defines substances such as herbs, vitamins, minerals, amino acids, and other natural substances as “dietary supplements” and permits general health claims as long as the label also has a disclaimer stating that the supplements are not approved by the FDA and are not intended to diagnose, treat, cure, or prevent any disease. The act gives the FDA the power to enforce the laws governed by the act.

21. When reviewing the phases of drug development, the nurse finds a discussion about the postmarketing surveillance phase. Which one of the following activities would the nurse expect to find as being carried out during this phase?
    A) Health care providers report adverse effects to FDA.
    B) Healthy volunteers are involved in the test.
    C) In vitro tests are performed using human cells.
    D) The drug is given to patients with the disease.
    Ans: A
    Feedback:
    The postmarketing surveillance phase of drug development encourages health care professionals to report adverse effects of drugs to the FDA using MedWatch. Phase 1 of clinical testing involves 20 to 100 healthy volunteers. In vitro testing of the drug on human or animal cells is done in the pre-FDA phase. In Phase 2 of clinical testing, the drug is given to patients with the disease for which the drug is manufactured.

22. A nurse is assessing a pregnant client and learns that the client is addicted to cocaine. The nurse informs the client about the risks of cocaine addiction for her fetus. Which of the following would the nurse include?
    A) The child may be born with diabetes.
    B) The child may be born with hypertension.
    C) The child may be born with an addiction to drugs.
    D) The child may be born with CNS defects.
    Ans: C
    Feedback:
    The nurse informs the client that children born to mothers using addictive drugs are often born with an addiction to the drug. Children born to mothers who are addicted to cocaine are not known to be born with diabetes, CNS defects, or hypertension.

23. A patient arrives at the health care clinic and informs the nurse that he has consumed several aspirin tablets for a severe headache over the past 24 hours. The nurse would be alert for which of the following as a harmful effect?
    A) Gastrointestinal bleeding
    B) Breathing difficulties
    C) Visual disturbances
    D) Loss of balance
    Ans: A
    Feedback:
    Aspirin is potentially harmful and can cause gastrointestinal bleeding and salicylism. Breathing difficulties, visual disturbances, and loss of balance could be due to an illness or the effects of some other drug.

24. The nurse observes that after administration of a drug the patient has developed itching and a skin rash. The nurse interprets these findings as which of the following?
    A) Toxicity
    B) Allergic reaction
    C) Angioedema
    D) Crystalluria
    Ans: B
    Feedback:
    Allergic reactions are manifested by a variety of signs and symptoms including itching, skin rashes, and hives. Swollen eyelids, lips, and mouth are some of the symptoms of angioedema, an allergic drug reaction that may block the airway, causing asphyxia. Toxicity or toxic reactions are caused when blood concentration levels exceed the therapeutic level of drugs. Reduced blood pressure is called hypotension. Crystals in the urine are symptoms of crystalluria.

25. A patient is receiving digoxin as treatment for heart failure. Which of the following would be most important for the nurse to monitor to reduce the risk for toxicity?
    A) Seizure activity
    B) Drug blood level
    C) Urinary output
    D) Blood pressure
    Ans: B
    Feedback:
    The nurse should monitor the patient's blood level of the drug to ensure that the level remains within the therapeutic range. Monitoring seizure activity, urination frequency, and blood pressure will not prevent toxicity. Seizure activity is unrelated to digoxin or heart failure.

26. A patient has been using sleeping pills every night for the past several months. Now admitted to the hospital, he is prescribed his usual dose of sleeping pill. After administration, the patient continues to be restless and is wide awake. The nurse notifies the health care provider, who prescribes an increased dose. After receiving the new dose, the patient falls asleep. The nurse interprets this as which of the following?
    A) Drug idiosyncrasy
    B) Cumulative drug effect
    C) Drug tolerance
    D) Toxic reactions
    Ans: C
    Feedback:
    The patient has developed drug tolerance and has to be administered an increased dosage of the drug to achieve the desired effect. Cumulative drug effect occurs when the body is unable to metabolize and excrete one (normal) dose of a drug before the next dose is given. Drug idiosyncrasy is a term used to describe any unusual or abnormal reaction to a drug. Toxic reactions are caused when blood concentration levels exceed the therapeutic levels of a drug.

27. A patient wants to know about the possible interactions of the various drugs that he has been prescribed for an illness. The nurse explains that the drugs interact with each other and produce an effect that is greater than the sum of their separate actions. Which of the following reactions is the nurse informing about?
    A) Additive drug reaction
    B) Synergistic drug reaction
    C) Antagonistic drug reaction
    D) Toxic drug reaction
    Ans: B
    Feedback:
    A synergistic drug reaction occurs when drugs interact with each other and produce a sum greater than the sum of their separate actions. An additive drug reaction occurs when the combined effect of two drugs is equal to the sum of each drug given alone. An antagonistic drug reaction occurs when one drug interferes with the action of another, causing neutralization or a decrease in the effect of one drug. Toxic drug reactions are caused when blood concentration levels exceed the therapeutic levels of a drug.

28. A nurse has administered drugs to a patient as per the physician's orders. Which of the following activities should the nurse perform after administering the prescribed drugs to the patient?
    A) Record symptoms of the condition.
    B) Perform a culture and sensitivity test.
    C) Obtain history of drug allergy.
    D) Check for adverse drug reactions.
    Ans: D
    Feedback:
    After administering the drug to the patient, the nurse should observe the patient for adverse drug reactions. Recording symptoms of infection, performing a culture and sensitivity test, and obtaining a history of drug allergy are typically performed by the nurse in the preadministration assessment stage.

29. The nurse administers a prescribed medication that is supplied as an enteric-coated tablet. The patient asks the nurse about this form of tablet. When describing how this tablet is absorbed, which response by the nurse would be most accurate?
    A) "The medication dissolves directly from the stomach into the body."
    B) "The drug breaks up into pieces as it moves through the stomach."
    C) "The medication bypasses the GI tract and goes quickly into the bloodstream."
    D) "The drug dissolves into fragments after it reaches your small intestine."
    Ans: D
    Feedback:
    Enteric-coated tablets disintegrate or fragment after reaching the alkaline medium of the small intestine. Tablets and capsules break up into small particles and dissolve into body fluids in the gastrointestinal tract. Liquids and parenteral drugs are quickly absorbed into the body system.

30. After teaching a group of nursing students about pharmacokinetics, the instructor determines that the teaching was successful when the students identify which of the following as the first phase?
    A) Metabolism
    B) Absorption
    C) Distribution
    D) Excretion
    Ans: B
    Feedback:
    Pharmacokinetics refers to the transportation activity of drugs in the body after administration. The first component is absorption. This is followed by distribution, metabolism, and finally excretion.

31. A patient is considering using herbal supplements and asks the nurse about them. Which response by the nurse would be most appropriate?
    A) "Herbal supplements are safe to use because they are regulated closely."
    B) "Herbal supplements can affect the way other medications will act."
    C) "Taking more than the recommended amount usually is not harmful because they are natural."
    D) "The risk of the supplement interacting with any prescription medications is extremely low."

    Ans: B

    Feedback:

    The nurse needs to explain to the patient that just because an herbal supplement is labeled "natural" does not mean the supplement is safe or without harmful effects. Herbal supplements can act the same way as drugs and can cause medical problems if not used correctly or if taken in large amounts. Herbal supplements are not regulated by the FDA, so products lack standardization in relation to purity and potency. In addition, the patient should be warned not to take more than the recommended dose of any herbal health product or supplement. The problems that these products can cause are much more likely to occur if the patient takes too much or takes them for too long.

32. A nurse is reading a journal article about seasonal allergies and comes across the name of the drug loratadine. The nurse identifies this drug name as which of the following?
    A) Chemical
    B) Generic
    C) Trade
    D) Brand

    Ans: B

    Feedback:

    The generic name is the name given to a drug that can be made or marketed by any company and is the name given to the drug by the FDA. The chemical name is the scientific term that describes the molecular structure of the drugs, typically the chemical components. The trade or brand name of the drug is the name selected by a specific company for marketing purposes and is followed by a trademark symbol or registered trademark symbol.

33. A group of nursing students are reviewing information about drug development in the United States in preparation for an exam. The students demonstrate understanding of this material when they identify testing of which of the following as one of the first steps?
    A) Small group of healthy volunteers
    B) People who have the disease
    C) Live animals
    D) Large numbers of patients
    Ans: C
    Feedback:
    Initially, drug testing begins with testing in an artificial environment such as a test tube, and then this testing is followed by testing on live animals. Next, clinical testing occurs with each phase involving a larger number of people. First, a small group of 20 to 100 healthy volunteers are tested; then testing is performed on people who have the disease or condition. Last, the drug is given to large numbers of patients in medical research centers.

34. After teaching a group of nursing students about pharmacokinetics, the instructor determines that the teaching was successful when the students identify which of the following as the site for the metabolism of most drugs?
    A) Liver
    B) Lungs
    C) Kidneys
    D) Intestinal mucosa
    Ans: A
    Feedback:
    Although the kidneys, lungs, plasma, and intestinal mucosa may aid in the metabolism of drugs, most drugs are metabolized by the liver.

1. Which of the following reflects a nurse's responsibility when a drug is prescribed for a client? Select all that apply.
   A) Administering the drug to the client
   B) Monitoring for therapeutic response
   C) Checking for drug–drug interactions
   D) Reporting adverse reactions
   E) Teaching the client information needed to administer drugs safely at home
   Ans: A, B, D, E
   Feedback:
   When a drug is prescribed to a client, the nurse is responsible for the administration of the drug, monitoring for therapeutic effects, reporting adverse drug reactions, and teaching the client information needed to administer the drug safely at home. A pharmacist checks for drug–drug interactions prior to dispensing a drug for administration.

2. A group of nursing students are reviewing the concept known as the five + 1 rights of drug administration. The group demonstrates understanding of this concept when they identify which of the following as being included? Select all that apply.
   A) Right documentation
   B) Right patient
   C) Right route
   D) Right drug
   E) Right prescriber
   Ans: A, B, C, D
   Feedback:
   The five + 1 rights of drug administration include the following: right patient, right drug, right dose, right route, right time, and right documentation.

3. Prior to administering a prescribed drug, the nurse correctly identifies the client by which method? Select all that apply.
   A) Checking a client's name on his or her wristband
   B) Checking a client's chart
   C) Asking the client to identify himself or herself and give his or her birth date
   D) Asking a client if he or she is the correct client
   E) Using a current picture of the client if available
   Ans: A, C, E
   Feedback:
   Client identifiers can include visual and verbal methods. Visual methods include use of a recent picture of the client or client wristband. Verbal methods include asking the client for his or her name and another unique identifier, such as his or her birth date. Never ask a client, "Are you Mr. Jones?" because some clients may respond by answering "yes" even though that is not their name due to confusion or difficulty hearing. Checking the client's chart would be inappropriate to use for identifying the client.

4. When completing the check to ensure that the right drug is being administered to the client, which of the following should the nurse compare? Select all that apply.
   A) Medication
   B) Container label
   C) Medication record
   D) MAR
   E) Nursing notes
   Ans: A, B, C, D
   Feedback:
   The nurse compares the medication, container label, and medication record and then the MAR as the item is removed from the cart and before the actual administration of the drug.

5. A nurse is reviewing the order for a medication. Which of the following must be included? Select all that apply.
   A) Client's name
   B) Drug name
   C) Dosage form
   D) Route of administration
   E) Frequency of administration
   Ans: A, B, C, D, E
   Feedback:
   A primary health care provider's order must include the client's name, the drug name, the dosage form and route, the dosage to be administered, and the frequency of administration.

6. When a primary health care provider phones in a medication order for a client, the nurse should do which of the following? Select all that apply.
   A) Write down the order.
   B) Record the order as soon as the MAR is retrieved.
   C) Repeat back the information exactly as written.
   D) Clarify any unclear information.
   E) Obtain verbal confirmation that the information is correct.
   Ans: A, C, D, E
   Feedback:
   If a verbal order is given over the telephone, the nurse writes down the order immediately, repeats back the information exactly as written, and then asks for a verbal confirmation that it is correct. Any order that is unclear should be questioned and clarified.

7. A nurse is preparing to administer a prescribed drug. Which information about the drug would be most important for the nurse to know? Select all that apply.
   A) Normal dosage range
   B) Special precautions in administration
   C) Drug's most common adverse effects
   D) Drug's general action
   E) Reason for use of the drug
   Ans: A, B, C, D, E
   Feedback:
   The nurse must have factual knowledge of each drug given, the reason for use of the drug, the drug's general action, the more common adverse reactions associated with the drug, special precautions in administration (if any), and the normal dose ranges.

8. A nurse is reviewing the medical record of a client and notes the various orders for drug therapy. Which of the following would the nurse most likely expect to find? Select all that apply.
   A) Standing order
   B) STAT order
   C) Single order
   D) Alternate order
   E) PRN order
   Ans: A, B, C, E
   Feedback:
   Common orders given by health care providers for drug therapy include the standing order, the single order, the PRN order, and the STAT order.

9. When administering a prescribed drug to a client, which action would be completely inappropriate? Select all that apply.
   A) Charting immediately on the MAR after drug administration
   B) Removing a drug from an unlabeled container
   C) Giving a drug that someone else prepared
   D) Crushing tablets or opening capsules
   E) Removing the drug's unit dose wrapper at the client's bedside
   Ans: B, C, D
   Feedback:
   The nurse should always record immediately on the MAR after drug administration. The nurse should never remove a drug from an unlabeled container, give a drug that someone else prepared, or crush tablets or open capsules without consulting a pharmacist. The drug's unit dose wrapper should remain on until the nurse arrives at the client's bedside.

10. Drug errors are most likely to occur at which time? Select all that apply.
   A) When transcribing the drug order
   B) When verifying the client
   C) When dispensing the drug
   D) When charting after drug administration
   E) When administering the drug
   Ans: A, C, E
   Feedback:
   Drug errors may occur in transcribing drug orders, when the drug is dispensed, or in administration of the drug. Nurses, as the drug administrators, serve as the last defense against drug errors. Verifying the client and charting after administration are two important areas to help prevent medication errors.

11. A nurse is preparing a presentation for a group of nurses about actions that nurses can do to help prevent drug errors. Which of the following would the nurse include? Select all that apply.
    A) Rechecking all calculations
    B) Always administering the drug before answering any of the client's questions
    C) Avoiding distractions and concentrating on only one task at a time
    D) Confirming any questionable orders
    E) Practicing the five + 1 rights of drug administration
    Ans: A, C, D, E
    Feedback:
    In addition to following the five + 1 rights of drug administration, a nurse can employ the following strategies to aid in the prevention of drug errors: confirm any questionable orders; when calculations are necessary, verify them with another nurse; listen to the client when he or she questions a drug, the dosage, or the drug regimen; never administer the drug until the client's questions have been adequately researched; and avoid distractions and concentrate on only one task at a time.

12. When documenting, which of the following would be appropriate for the nurse to use at accredited health care organizations? Select all that apply.
    A) IU
    B) QD
    C) 0.2 mg
    D) Units
    E) 2.0 mg
    Ans: C, D
    Feedback:
    Always use a leading zero when writing decimals (i.e., 0.2 mg, not .2 mg) and leave off the trailing zero (i.e., 2 mg, not 2.0 mg). Always write out units, international units, and daily; do not use U, IU, or QD.

13. When using a bar-code point-of-care medication system, the nurse would scan which of the following prior to drug administration? Select all that apply.
    A) Client's hospital chart
    B) Client's identification band
    C) Drug unit dose package
    D) Nurse's identification badge
    E) Client's medication administration record
    Ans: B, C, D
    Feedback:
    The bar-code point-of-care medication system requires that the client's identification band, the drug unit dose package, and the nurse's identification badge are all scanned prior to drug administration.

14. Which of the following is considered a unit dose system? Select all that apply.
    A) Floor stock bottle of aspirin 81 mg
    B) A prefilled Lovenox syringe
    C) One Phenergan suppository
    D) Floor stock bottle of ibuprofen suspension
    E) Single-dose cup of Maalox
    Ans: B, C, E
    Feedback:
    Examples of unit dose medications include a package that contains one tablet or capsule, a premeasured amount of a liquid drug, a prefilled syringe, or one suppository.

15. A nurse is preparing to administer a prescribed drug by the oral route. Which of the following would be most important for the nurse to do? Select all that apply.
    A) Making sure the client is in an upright position prior to administration
    B) Ensuring that a full glass of water is readily available
    C) Leaving PRN drugs at the bedside for ready access if needed
    D) Instructing the client to tilt his or her head back to swallow a capsule
    E) Having the client refrain from sipping on the water before placing the tablet in the mouth
    Ans: A, B
    Feedback:
    Clients should always be in an upright position when receiving oral drugs and a glass of water should be readily available. They should be encouraged to take a few sips of water before placing the tablet or capsule in the mouth. Drugs should never be left at the client's bedside. Instruct clients to tilt their head back to swallow a tablet and slightly forward to swallow a capsule.

16. The nurse is caring for a client who has a nasogastric tube in place. The client is to receive an oral medication through the tube. Which action by the nurse would be most appropriate? Select all that apply.
    A) Not diluting liquids prior to administration
    B) Checking the tube for placement
    C) Dissolving crushed tablets in water prior to administration
    D) Flushing the tube with water after drugs are administered
    E) Clearing the tube with air prior to administration
    Ans: B, C, D
    Feedback:
    Before administration of an oral drug through an NG tube or gastrostomy tube, the nurse should check the tube for placement, dilute and flush liquid drugs through the tube, crush tablets and dissolve them in water before administering them through the tube, and flush the tube with water after the drugs are placed in the tube to clear the tubing completely.

17. When administering parenteral drugs, which of the following routes would the nurse use? Select all that apply.
    A) Subcutaneous
    B) Intramuscular
    C) Intradural
    D) Intravenous
    E) Intradermal
    Ans: A, B, D, E
    Feedback:
    A nurse can administer parenteral drugs via subcutaneous, intramuscular, intravenous, intradermal, and, in some instances, intra-arterial routes by means of a catheter placed by a physician in an artery. The primary health care provider can administer a drug via the intradural route.

18. A nurse is preparing to administer a prescribed drug via an intramuscular injection. Which of the following would be most appropriate for the nurse to do? Select all that apply.
    A) Always wear gloves.
    B) Cleanse skin at injection site.
    C) Place pressure on the area after removing the needle.
    D) Recap the needle before disposal.
    E) Aspirate after inserting the needle.
    Ans: A, B, C, E
    Feedback:
    When administering an intramuscular injection, the nurse should always wear gloves, cleanse the skin at the injection site prior to administration, aspirate for 5 to 10 seconds after inserting the needle, apply pressure to the area after removing the needle, and never recap the needle.

19. When administering an intradermal injection, the nurse would use a 1-mL syringe with which gauge of needle? Select all that apply.
    A) 26 gauge
    B) 28 gauge
    C) 29 gauge
    D) 25 gauge
    E) 27 gauge
    Ans: A, D, E
    Feedback:
    A 1-mL syringe with a 25- to 27-gauge needle that is 1/4 to 5/8 inches long is best suited for intradermal injections.

20. A client has an order to receive 10 units of intermediate-acting insulin at bedtime via subcutaneous injection. The nurse would expect to administer the injection at which site? Select all that apply.
    A) Upper arm
    B) Inner forearm
    C) Upper abdomen
    D) Gluteus maximus
    E) Upper thigh
    Ans: A, C, E
    Feedback:
    The sites for subcutaneous injection are the upper arms, the upper abdomen, and the upper thighs.

21. A nurse is required to give an intramuscular (IM) injection to an 18-month-old toddler. The nurse would prepare which site for administration?
    A) Dorsogluteal site
    B) Deltoid muscle
    C) Vastus lateralis
    D) Ventrogluteal site
    Ans: C
    Feedback:
    The vastus lateralis site is frequently used for infants and small children because it is more developed than the other intramuscular sites such as the dorsogluteal and deltoid muscle. Ventrogluteal sites may be used in children who have been ambulating for more than 2 years.

22. A primary health care provider instructs a nurse to administer a medication to a patient STAT. Which action by the nurse would be most appropriate?
    A) Insist on obtaining a written report before administering any drug.
    B) Administer the drug as ordered by the physician.
    C) Forgo obtaining the physician's order after the drug has been administered.
    D) Document the administration of the drug only after receiving the physician's order.
    Ans: B
    Feedback:
    The nurse should administer the drug as instructed without a written order as it is an emergency. The nurse should, however, ensure that the physician's order is obtained after the drug has been administered. Waiting for a written order during an emergency may exacerbate the patient's condition. The nurse should complete the documentation immediately after the administration of the drug and not wait until the physician's order is received.

23. A nurse has administered an opioid drug to a patient. Which action would be most appropriate for the nurse to do immediately after administering the drug?
    A) Monitoring the vital signs of the patient
    B) Documenting administration of the drug
    C) Informing the patient about the type of drug
    D) Updating the physician regarding the patient's condition
    Ans: B
    Feedback:
    After administration of any drug, the nurse should immediately document the administration. After the documentation is complete, the nurse can record the patient's vital signs. The patient needs to be informed about the drug before the administration. The physician need not be immediately informed, unless the client develops severe adverse reactions.

24. A primary health care provider orders a transdermal drug. When administering this drug, which action by the nurse would be most appropriate?
    A) Apply next dose to a new site.
    B) Check the infusion rate.
    C) Inject only the inner part of the forearm.
    D) Give small volumes of doses.
    Ans: A
    Feedback:
    An important nursing intervention when administrating drugs through the transdermal route is to apply the next dose to a new site. It is important to check the infusion rate every 15 to 30 minutes in patients using infusion controllers or infusion pumps. When using the intradermal route, the inner part of the forearm should be used as the injection site and small volumes of doses should be administered.

25. The physician has asked a nurse to administer a drug intravenously to a patient who is unresponsive. How can the nurse ensure that the drug is administered to the right patient?
    A) By waking him up to ask him his name
    B) By identifying the patient's room number
    C) By checking the patient's wristband
    D) By asking the nursing assistant for the patient's location
    Ans: C
    Feedback:
    The nurse should identify a patient by checking his wristband, which has the patient's name. The nurse should not ask the patient to confirm his name, because some patients, particularly those who are confused or have difficulty hearing, may respond by answering yes. Additionally, this patient is unresponsive. The nurse can obtain the patient's location by asking any other member of the health care staff, but should verify the patient's identity by checking the wristband. The nurse should not rely on the patient's room number alone.

26. A patient is ordered to receive a subcutaneous injection of heparin twice a day. When administering this drug to the patient, which of the following would be most important for the nurse to do to minimize tissue damage?
    A) Insert the needle at the appropriate angle.
    B) Select the needle length based on the patient's weight.
    C) Ensure that there is no hair on the injection site.
    D) Rotate the injection site regularly.
    Ans: D
    Feedback:
    The nurse should rotate the injection sites to minimize the damage caused to the tissue. Inserting the needle at the proper angle and selecting the needle length based on the patient's weight will not significantly help in minimizing tissue damage if the same site is repeatedly injected. It is not necessary to avoid injection sites that have hair as long as the drug is administered in the upper arms, the upper abdomen, and the upper back.

27. The nurse is checking the medical record of an assigned patient for medication orders. The nurse is unable to read the primary health care provider's handwriting. Which action would be most appropriate?
    A) The nurse should question the order with the primary health care provider.
    B) The nurse should try to interpret the handwriting.
    C) The nurse should confirm the order with a nearby health care provider.
    D) The nurse should obtain a verbal order.
    Ans: A
    Feedback:
    Any order that is unclear, particularly due to illegible handwriting, should be questioned. The nurse should not try to interpret the handwriting as it may lead to a misinterpretation. The nurse should also not confirm the order with any other physician who is nearby. Administering drugs based on verbal orders is permissible only during emergencies.

28. A nurse is preparing to administer an intramuscular injection to a patient for the first time. Which of the following would be most important for the nurse to do?
    A) Obtain the patient's allergy history.
    B) Obtain information about the drug.
    C) Inquire if the patient has any objections to syringes.
    D) Discuss the dosage with other nurses.
    Ans: A
    Feedback:
    Before giving any drug for the first time, the nurse should ask the patient about any known allergies as well as any family history of allergies. The nurse need not particularly obtain information about the drug as it has been prescribed by the physician, but needs to be aware of the adverse effects it may cause. There is also no need to discuss the dosage with other nurses or to find out if the client has any objections to syringes. However, the nurse should help allay the patient's fears by reassuring him or her about the administration.

29. After teaching a group of students about the different routes of medication administration, the nursing instructor determines that the teaching was successful when the students identify which of the following as a topical drug? Select all that apply.
    A) Eyedrops
    B) Suppository
    C) Nebulized bronchodilator
    D) Nicotine patch
    E) Capsule
    Ans: A, B
    Feedback:
    Topical drugs are drugs that are applied to the outer layer of the skin but not absorbed through the skin, such as eyedrops and suppositories. A nebulized bronchodilator is an inhaled medication. A nicotine patch delivers the medication transdermally; that is, it is readily absorbed from the skin. A capsule is a form of oral medication.

30. The nurse is preparing to administer a prescribed drug to a patient. The patient looks at the tablet and says, "This doesn't look like my usual pill." Which response by the nurse would be most appropriate?
    A) "This is the same pill your doctor has been ordering."
    B) "It must be from a different manufacturer."
    C) "It looks different? Are you sure?"
    D) "Let me double check with your doctor and the order."
    Ans: D
    Feedback:
    If the patient makes any statement about the drug, the nurse needs to hold the drug and investigate the patient's statement, double checking the chart and the order and obtaining clarification and/or confirmation from the prescriber. It may be that the dosage or manufacturer has changed and that is what makes the pill look different. It is always important to err on the side of caution. Telling the patient that the pill is the same or that it is from a different manufacturer may be true, but the nurse needs to confirm that before giving it to the patient. Repeating the patient's statement and then asking him if he is sure is inappropriate because it implies that the patient is incorrect.

31. A nursing instructor is observing a nursing student prepare an oral drug for administration. The instructor determines that the student is performing the procedure correctly when the student compares the label of the drug with the MAR how many times?
    A) 2
    B) 3
    C) 4
    D) 5
    Ans: B
    Feedback:
    The proper procedure is to compare the drug label with the MAR three times: (a) when the drug is taken from its storage area, (b) immediately before removing the drug from the container, and (c) before administering the drug to the patient.

32. A patient is prescribed a buccal medication. The nurse would instruct the patient to place the drug at which location?
    A) Under the tongue
    B) Against the cheek mucous membrane
    C) Inside the rectum
    D) At the back of the tongue
    Ans: B
    Feedback:
    Buccal drugs are placed in the mouth against the mucous membranes of the cheek in either the upper or lower jaw. Sublingual medications are placed under the tongue. Rectal suppositories are inserted into the rectum. Oral medications are placed at the back of the tongue.

33. The nurse is preparing to administer an intradermal injection. The nurse would insert the needle at which angle?
    A) 15 degrees
    B) 30 degrees
    C) 45 degrees
    D) 90 degrees
    Ans: A
    Feedback:
    When giving an intradermal injection, the needle is inserted bevel up at a 15-degree angle. The nurse would insert the needle at a 90-degree angle for an intramuscular injection or for a patient who is obese and requires a subcutaneous injection. Typically a subcutaneous injection is given at a 45-degree angle.

1. A nursing instructor is describing the various work factors that can lead to errors in dosage calculations to a group of nursing students. The instructor determines that the teaching was successful when the students identify which of the following as a factor? Select all that apply.
   A) Poor lighting
   B) Heavy workload
   C) Noise
   D) Temperature
   E) Interruptions
   Ans: A, B, C, E
   Feedback:
   Factors in the work environment that often contribute to errors made by people include poor lighting, noise, interruptions, and a taxing workload.

2. A nurse is checking the label of a drug. Which of the following would the nurse identify as an important item needed to administer a drug? Select all that apply.
   A) Monitoring parameters
   B) Side effects
   C) Dosage form
   D) Drug name
   E) Dosage strength
   Ans: C, D, E
   Feedback:
   Although drug labels contain a great amount of information about the drug being given, three specific items are needed to administer a drug: the drug name, dosage form, and dosage strength.

3. A nurse is reviewing the package label of a drug. Which name would the nurse find on the drug label? Select all that apply.
   A) Trade name
   B) Scientific name
   C) Pharmacologic name
   D) Nonproprietary name
   E) Generic name
   Ans: A, E
   Feedback:
   The nurse will find two names on the drug label, the trade or brand name and the generic (official) name.

4. A nurse is reading a drug label. Which of the following might help the nurse distinguish between the trade and generic names on the drug label? Select all that apply.
   A) The trade name is written in smaller print.
   B) The trade name is usually capitalized.
   C) The trade name is followed by a registration symbol.
   D) The trade name is often in parentheses.
   E) The trade name is found under the generic name.
   Ans: B, C
   Feedback:
   To help the nurse distinguish between the trade and generic names on a drug label, the nurse should know the following: the trade name is usually capitalized, written first on the label, and identified by the registration symbol, whereas the generic name is written in smaller print, often in parentheses, and usually located under the trade name.

5. A client has been taking warfarin (Coumadin) 5 mg daily. After a check of the client's INR, the physician wants to increase the client's dose to 7.5 mg on Wednesdays and continue 5 mg all the other days of the week. The client has warfarin 5-mg tablets on hand. The nurse would instruct the client to take _____ tablets on Wednesdays.
   Ans: 1.5 tablets
   Feedback:
   7.5 mg/5 mg = 1.5

6. A physician writes an order for a client to receive levothyroxine (Synthroid) 0.2 mg, but 100-mcg tablets are supplied. The nurse would administer _____ tablets to the client.
   Ans: Two tablets
   Feedback:
   1000 mcg/1 mg = 100 mcg/X mg
   X = 100/1000
   X = 0.1 mg
   0.2 mg/0.1 mg = 2

7. A group of nursing students are reviewing the various systems of measurement. The students demonstrate understanding of the information when they identify which of the following as a metric system unit? Select all that apply.
   A) Inch
   B) Milligram
   C) Centimeter
   D) Ounce
   E) Pound
   Ans: B, C
   Feedback:
   The metric system uses the gram, liter, and meter. Milligram and centimeter are metric units.

8. Which of the following drug doses is written correctly? Select all that apply.
   A) Synthroid 0.175 mg
   B) Synthroid .175 mg
   C) Synthroid 175 mcg
   D) Synthroid 175.0 mcg
   E) Synthroid .1750 mg
   Ans: A, C
   Feedback:
   When there is no number to the left of the decimal, a zero is written; therefore, Synthroid 0.175 mg and 175 mcg are correct.

9. A group of nursing students are reviewing information about drugs and how they are supplied for parenteral administration. The students demonstrate understanding of the information when they identify which forms as available for parenteral administration? Select all that apply.
   A) Disposable syringes
   B) Reusable cartridges
   C) Ampules containing liquid form of the drug
   D) Reusable vial containing liquid form of the drug
   E) Vial containing drug powder
   Ans: A, C, D, E
   Feedback:
   Parenteral drugs may be available in the following forms: liquids in disposable cartridges or disposable syringes; ampules or vials that contain the liquid form of the drug; and ampules or vials that contain the powder or crystal form of the drug. These vials may be single-dose or multidose vials.

10. A client weighs 56 kg. The client weighs _____ pounds.
    Ans: 123.2 lb
    Feedback:
    Kilograms must be converted to pounds using the conversion factor of 2.2 pounds in 1 kg. Therefore, 56 × 2.2 = 123.2.

11. The nurse is checking the dosage of a drug ordered in mg/kg. A client weighs 275 lb. The client weighs_____ kilograms.
    Ans: 125 kg
    Feedback:
    Pounds must be converted to kilograms using the conversion factor of 2.2 lb in 1 kg. Therefore, 275/2.2 = 125.

12. A client has a temperature of 39°C. The client's temperature is _____ degrees Fahrenheit.
    Ans: 102.2°F
    Feedback:
    To convert from Celsius to Fahrenheit, the formula F = 9/5 C + 32 is used. Therefore, 9/5 × 39 = 70.2.
    70.2 + 32 = 102.2

13. When assessing a client's temperature, the nurse finds it to be 99°F. The client's temperature is _____ degrees Celsius?
    Ans: 37.2°C
    Feedback:
    To convert Fahrenheit to Celsius, the formula C = 5/9 (F – 32) is used. Therefore, 99 – 32 = 67.
    67 × 5/9 = 37.2

14. Amoxicillin 250 mg is ordered for a child. The pharmacy supplies the drug in a suspension form. The label reads 500 mg/5 mL. The nurse would administer _____ mL.
    Ans: 2.5 mL
    Feedback:
    500 mg/5 mL = 250 mg/X mL
    500 X = 1250
    X = 2.5

15. A client is to receive 0.5 mg of a drug parenterally. The drug is available in a 2-mg/mL vial. The nurse would administer _____ mL.
Ans: 0.25 mL
Feedback:
0.5 mg × 1 mL/2 mg = 0.25 mL.

16. A client is to receive a 7.5-mg/kg dose of a drug. The client weighs 155 lb. The client would receive _____ mg per dose.
Ans: 528.4 mg
Feedback:
First, the client's weight needs to be converted to kilograms. 155 lb × 1 kg/2.2 lb = 70.5 kg. Then the drug dosage is calculated as follows: 70.5 kg × 7.5 mg/kg = 528.4 mg.

17. The physician writes an order for a client to receive 1 mg of vitamin B_{12} once every month. Vitamin B_{12} comes in a 1000-mcg/mL vial. The nurse would administer _____ mL to the client each month.
Ans: 1 mL
Feedback:
First, the nurse needs to convert the milligrams to micrograms. Therefore, 1 mg = 1000 mcg. Since there is 1000 mcg/mL, the nurse would give 1 mL.

18. A client is to receive 250 mg of penicillin VK twice daily for 10 days. Penicillin VK is available in a 500-mg tablet. The nurse would instruct the client to take _____ tablet(s) at each dose.
Ans: 1/2 tablet
Feedback:
250 mg/500 mg = 0.5 tablets.

19. A client weighs 200 lb. The client is to receive 5 mg/kg per dose of drug. The client will receive _____ mg of the drug in each dose.
Ans: 454.5 mg/dose
Feedback:
First, the patient's weight must be converted to kilograms: 200 lb × 1 kg/2.2 lb = 90.9 kg. Then the dosage is calculated: 90.9 kg × 5 mg/kg = 454.5 mg.

20. A nursing instructor is describing the importance of preventing errors in medication administration and doses. Which of the following would the instructor emphasize as the best method for detecting errors?
    A) Checking calculations three times
    B) Having each person involved in the process check the dosage
    C) Reading drug labels very carefully
    D) Checking the dosage in a reputable drug reference
    Ans: B
    Feedback:
    The best method of error detection is the manual redundancy system. This is a system in which each person in the process of medication prescription and delivery checks the drug dosage for accuracy. Nurses use this system when they perform the "5 rights and 3 checks" to catch a potential error in drug administration. Double checking calculations and reading labels carefully are important, but they are not the best method for detecting errors. Checking the dosage in a reputable drug reference would help to ensure that the dosage is within the safe dosage range, but this would do nothing to ensure that the dosage is accurate.

21. After teaching a group of nursing students about measurement systems, the instructor determines that the teaching was successful when the students identify which of the following as units of the metric system?
    A) Minims
    B) Grains
    C) Drams
    D) Grams
    Ans: D
    Feedback:
    Grams are units of weight in the metric system. Minims are units of volume in the apothecary system. Grains and drams are units of weight in the apothecary system.

22. "Dose desired / dose on hand = dose administered" is the formula for calculating the dose to be administered. Under which of the following circumstances is this to be used?
    A) When the physician is not available to calculate the dosage
    B) When the dosage is written in the apothecary system
    C) When the dose desired and dose on hand are in the same system
    D) When the label of the drug is in the metric system
    Ans: C
    Feedback:
    When the dose ordered by the physician (dose desired) is written in the same system as the dose on the drug container (dose on hand), the above formula is used for calculating the dose to be administered. When the physician is not available to calculate the dosage, the dosage is written in the apothecary system, and the label of the drug is in the metric system are circumstances in which it becomes necessary for the nurse to compute the drug dosage.

23. A medication is ordered for a client. The dosage he is to receive is 100,000 U. The drug label reads 400,000 units/mL. When setting up the dosage calculation using dimensional analysis, the nurse identifies the unit of measure to be calculated as which of the following?
    A) Milliliters
    B) Units
    C) Milligrams
    D) Tablets
    Ans: B
    Feedback:
    According to the order, the client is to receive 100,000 units. Therefore, units is the unit of measure and would set up the calculation as units = ____.

24. A nursing instructor is describing how to perform dosage calculations using dimensional analysis. Which of the following would the instructor emphasize to ensure accuracy?
    A) A formula that is specific to the drug being administered is needed.
    B) Decimals rather than fractions are used to determine amounts.
    C) Proportions are needed but labels related to units are not important.
    D) The focus is on the unit of measure set up in a specific order.
    Ans: D
    Feedback:
    Dimensional analysis is a method used to perform calculations where the focus is on the units of measure, thereby eliminating the need to memorize equations. Because the units are set up in a specific order, it eliminates the need to be concerned about setting up proportions correctly. When using DA to calculate dosage problems, dosages are written as common fractions.

25. The health care provider orders chlorpromazine 25 mg IM. The drug is supplied as chlorpromazine 50 mg/mL in a 1-mL ampule. How much would the nurse administer?
    A) 0.25 mL
    B) 0.5 mL
    C) 0.75 mL
    D) 1.0 mL
    Ans: B
    Feedback:
    The drug is supplied as 50 mg in 1 mL. Calculating the dosage using the formula D/H × Q, the equation would read: 25 mg/50 mg × 1 mL = 0.5 mL.

26. A client is prescribed 500 mg of ampicillin IM. The drug is supplied in a multidose vial that requires reconstitution with 2 mL sterile water for injection. The resulting concentration contains 250 mg/mL. The nurse would administer how much of the drug?
    A) 0.5 mL
    B) 1.0 mL
    C) 1.5 mL
    D) 2.0 mL
    Ans: A
    Feedback:
    After reconstitution, the vial yields 500 mg/mL. To calculate the amount needed to give, set up a proportion to read: 500/1 = 250/X; cross-multiply to arrive at 500X = 250; X = 0.5 mL.

27. A home health care nurse is reviewing a client's medication during a home visit. The client is prescribed atorvastatin 10 mg daily, a change from his previous order of 20 mg daily. The client shows the nurse the medication container from the pharmacy. The label reads atorvastatin 20 mg. The nurse determines that the client is taking the correct dosage when the client states he is taking which of the following?
    A) 1/2 tablet every day
    B) 1 tablet every day
    C) 1/2 tablet every other day
    D) 1 tablet every other day
    Ans: A
    Feedback:
    The on-hand dose of the drug is 20 mg, but the client is to take 10 mg daily. So the client is correct when he says that he takes 1/2 tablet daily. Any other dosage would be incorrect.

1. A nursing instructor is reviewing the nursing process with a group of nursing students. The instructor determines that the teaching was successful when the students identify which of the following as a phase? Select all that apply.
   A) Evaluation
   B) Documentation
   C) Analysis
   D) Assessment
   E) Planning
   Ans: A, C, D, E
   Feedback:
   The five phases of the nursing process are assessment, analysis, planning, implementation, and evaluation.

2. Successful use of the nursing process requires which of the following? Select all that apply.
   A) Observation
   B) Teaching
   C) Practice
   D) Experience
   E) Updating
   Ans: A, B, C, D, E
   Feedback:
   Using the nursing process requires practice, experience, and a constant updating of knowledge. Observation is a key component of assessment and teaching is a major intervention that the nurse implements.

3. A nurse is assessing a patient. Which of the following would the nurse document as objective data?
   A) Temperature
   B) Heart rate
   C) Chief complaint
   D) Medication history
   E) Respiratory rate
   Ans: A, B, E
   Feedback:
   Objective data is obtained through physical examination or assessment. Vital signs such as temperature, heart rate, and respiratory rate are all examples of objective data. Subjective data, that which is supplied by the patient or family, would include information such as chief complaint and medication history.

4. When assessing a patient, which of the following would be involved? Select all that apply.
   A) Obtain a medication history.
   B) Obtain vital signs.
   C) Formulate nursing diagnoses.
   D) Ask about chief complaint.
   E) Determine therapeutic response.
   Ans: A, B, D, E
   Feedback:
   The assessment phase of the nursing process involves collecting subjective and objective data, as well as initial and ongoing assessment. Examples include taking medication history and vital signs, asking about the chief complaint, and determining therapeutic response.

5. A nurse is completing an initial assessment of a patient. Which of the following would the nurse include in this assessment? Select all that apply.
   A) Allergy history
   B) Treatment response
   C) Occupational history
   D) Vital signs
   E) Pregnancy status
   Ans: A, C, D, E
   Feedback:
   Allergy history, occupational history, vital signs, and pregnancy status are examples of what should be included in the nurse's initial assessment. Treatment response would be part of an ongoing assessment.

6. When preparing a teaching plan for a group of nursing students about drug administration and the nursing process, the instructor expects to include information about the most frequently used nursing diagnoses associated with drug administration. Which of the following would the instructor most likely include? Select all that apply.
   A) Noncompliance
   B) Ineffective Coping
   C) Deficient Knowledge
   D) Effective Self Health Management
   E) Ineffective Self Health Management
   Ans: A, C, D, E
   Feedback:
   Frequently used nursing diagnoses related to the administration of a drug include Noncompliance, Anxiety, Deficient Knowledge, Effective Self Health Management, and Ineffective Self Health Management. Ineffective Coping is not frequently identified as a nursing diagnosis.

7. A nurse identifies a nursing diagnosis of Ineffective Self Health Management for a patient. Which of the following would the nurse identify as supporting this nursing diagnosis? Select all that apply.
   A) Visual impairment
   B) Forgetfulness
   C) Cognitive deficits
   D) Mobility issues
   E) Order entry error
   Ans: A, B, C, D
   Feedback:
   Possible causes of Ineffective Self Health Management include visual impairment, forgetfulness, cognitive deficits, and mobility issues among several others. Order entry error would be unrelated to the patient's difficulty in managing medications.

8. During the evaluation phase of the nursing process, which of the following would the nurse perform? Select all that apply.
   A) Independent nursing actions
   B) Collection of objective data
   C) Collection of subjective data
   D) Initial assessment
   E) Ongoing assessment
   Ans: B, C, E
   Feedback:
   Evaluation is a decision-making process that involves determining the effectiveness of the nursing interventions in meeting the expected outcomes. To determine if the outcomes have been accomplished, the nurse collects additional data, both subjective and objective, through an ongoing assessment. An initial assessment is completed when the nurse first meets the patient. Independent nursing actions are completed during the implementation phase of the nursing process.

9. A nurse's taking a patient's blood pressure prior to administering a drug could be considered which of the following? Select all that apply.
   A) Assessment
   B) Implementation
   C) Subjective data
   D) Objective data
   E) Analysis
   Ans: A, D
   Feedback:
   A nurse's taking a patient's blood pressure prior to administering a drug would be considered assessment of objective data because the nurse will need to analyze the actual blood pressure reading to determine which plan to implement. Implementation involves carrying out the plan, such as preparing and administering one or more drugs to the patient. Subjective data involves information obtained directly from the patient, such as if the patient reported a headache. Analysis involves clustering data to determine the patient's needs.

10. The nurse identifies a nursing diagnosis of Effective Self Health Management. Which of the following would the nurse use to support this nursing diagnosis? Select all that apply.
   A) Patient demonstrates ability to complete other tasks of daily living.
   B) Patient verbalizes desire to manage the medication regimen.
   C) Patient exhibits difficulty in ability to remember.
   D) Patient demonstrates ability to understand medication regimen.
   E) Patient states desire to learn about the prescribed medication.
   Ans: A, B, D, E
   Feedback:
   For this nursing diagnosis to be used, the patient verbalizes the desire to manage the medication schedule. When the patient is willing and able to manage the treatment activities, he or she may simply need information concerning the drug, method of administration, what type of reactions to expect, and what to report to the primary health care provider. A patient willing to take responsibility may need the nurse to develop a teaching plan that gives the patient the information needed to manage the treatment activities. The patient would also need to demonstrate the ability to remember how and when to take the drug.

11. A nurse is developing a teaching plan for a patient who is receiving medications. Which of the following would the nurse expect to include in the teaching plan? Select all that apply.
    A) Chemical name of the drug
    B) Method for administering the drug
    C) Calculation for the prescribed dosage
    D) Expected effect of the drug
    E) Information to report to the primary health care provider
    Ans: B, D, E
    Feedback:
    When developing a teaching plan, the nurse should include information about how to administer the drug, what to expect from the drug, and what to report to the primary health care provider. Information about the drug's chemical name is not necessary; however, the nurse should address the drug's generic and/or trade names. Typically the patient would not need to calculate the drug dosage, but the nurse should review the dosage with the patient.

12. A nurse identifies a nursing diagnosis of Ineffective Self Health Management. Which of the following would the nurse identify as supporting this nursing diagnosis? Select all that apply.
    A) Financial difficulty in obtaining the medication
    B) Lack of information about the drug therapy
    C) Ability to follow the prescribed medication schedule
    D) Ability to remember to take the drug regimen
    E) No therapeutic effect seen by patient
    Ans: A, B, E
    Feedback:
    Reasons for the nursing diagnosis of Ineffective Self Health Management include the inability of the patient to afford the drug regimen, inadequate information about the drug therapy regimen, and a lack of therapeutic effect seen by the patient. The ability to follow the schedule and the ability to remember to take the drug support the nursing diagnosis of Effective Self Health Management.

13. A nurse identifies a nursing diagnosis of Noncompliance. Which of the following would be most important for the nurse to determine?
    A) When the patient stopped taking the drug
    B) What adverse reactions the patient experienced
    C) What was the exact reason for stopping the drug
    D) Whether the patient's symptoms were relieved with the drug
    Ans: C
    Feedback:
    Noncompliance with drugs can occur for numerous reasons. Therefore, it is most important for the nurse to determine the exact reason that the patient stopped the therapy. Additional information can then be obtained, such as when the patient stopped, if and what adverse reactions the patient experienced, and if relief was obtained.

14. A nurse is developing a plan of care for a patient with a nursing diagnosis of Anxiety related to drug therapy. Which of the following would be important to include to foster a trusting and comfortable nurse–patient relationship? Select all that apply.
    A) Completing follow-up visits with the patient
    B) Sending a certified letter to the patient
    C) Calling the patient on the telephone
    D) Accompanying the patient to all physician appointments
    E) Encouraging the patient to express feelings and concerns
    Ans: A, C, E
    Feedback:
    To develop a trusting and comfortable relationship between the patient and the nurse, the nurse should incorporate follow-up visits, telephone calls, and encouragement of the patient to express feelings and concerns. Sending a certified letter would be ineffective. It would be impossible for the nurse to accompany the patient to all physician appointments.

15. After assessing a patient, the nurse identifies a nursing diagnosis of Deficient Knowledge related to drug self-administration. Which of the following would support this nursing diagnosis? Select all that apply.
    A) Inability to remember
    B) Lack of a college education
    C) Cognitive limitation
    D) Lack of interest in learning
    E) Lack of effectiveness of drug
    Ans: A, C, D
    Feedback:
    Inability to remember, cognitive limitation, and lack of interest in learning are aspects related to drug self-administration that support the nursing diagnosis of Deficient Knowledge. Lack of a college education would not be a supporting factor. Lack of drug effectiveness would more likely be associated with a nursing diagnosis of Noncompliance or Ineffective Self Health Management.

16. A nurse is preparing a presentation for a group of patients requiring long-term medication therapy. The nurse expects to include common reasons for noncompliance with self-medication administration. Which of the following would the nurse be most likely to include? Select all that apply.
    A) Lack of knowledge about expected results
    B) Bothersome adverse effects
    C) Depression
    D) Anxiety
    E) Lack of information about the drug
    Ans: A, B, D, E
    Feedback:
    Reasons for noncompliant behavior in patients administering their own medications include knowledge deficit of expected results, bothersome adverse effects, anxiety, and lack information about the drug.

17. A patient is experiencing anxiety related to drug therapy. Which of the following would the nurse identify as a factor influencing the patient's level of anxiety? Select all that apply.
    A) Fear
    B) Severity of illness
    C) Patient's knowledge level
    D) Good comprehension of information
    E) Nonadherence to the plan
    Ans: A, B, C
    Feedback:
    The anxiety experienced during drug administration depends on fear, severity of illness, and the patient's knowledge level. Anxiety usually decreases with understanding of the information. Anxiety can lead to nonadherence.

18. A nurse has collected all the relevant data and is now clustering the information to determine the patient's needs. The nurse is involved in which phase of the nursing process?
    A) Assessment
    B) Analysis
    C) Planning
    D) Implementation
    Ans: B
    Feedback:
    Analysis is the way nurses cluster data into similar groupings to determine patient needs. Assessment is the collection of data that is used for analysis. Planning involves the development of patient-oriented goals and expected outcomes and identifying actions to achieve these outcomes. Implementation is carrying out the plan of action.

19. A nurse is evaluating a patient's understanding of his prescribed drug therapy regimen. Which of the following would the nurse use as part of this process? Select all that apply.
    A) Facial expressions
    B) "Yes" answers when asked about understanding
    C) Nodding of head through interaction
    D) Regimen being followed correctly
    E) Correct answers to questions asked
    Ans: A, D, E
    Feedback:
    To evaluate the patient's understanding of the drug regimen, behaviors are important. The nurse may note facial expressions, regimen being followed correctly, and correct answers to questions asked. The patient may say "yes" but not truly understand. Additionally, nodding of the head, although suggesting yes, does not demonstrate understanding.

20. A nurse caring for a patient is describing the steps for carrying out nursing activities that will assist in achieving patient goals. The nurse is in which phase of the nursing process?
    A) Assessment
    B) Planning
    C) Implementation
    D) Evaluation
    Ans: B
    Feedback:
    The planning phase of the nursing process involves describing steps for carrying out nursing activities that will assist in achieving patient goals or expected outcomes. The assessment phase involves collecting facts by means of a physical examination and through information supplied by the patient or the patient's family. During the implementation phase, the nurse carries out a defined plan of action. Evaluation is a decision-making process that involves determining the effectiveness of the nursing interventions in meeting the expected outcomes.

21. After teaching a group of nursing students about nursing diagnoses, the instructor determines that the teaching was successful when the students identify which of the following as most useful related to the nursing diagnoses developed by the North American Nursing Diagnosis Association (NANDA)?
    A) Identifying patient problems related to drug therapy
    B) Classifying the patients according to their age groups
    C) Categorizing the drugs based on their therapeutic actions
    D) Identifying the expected outcomes of treatments given
    Ans: A
    Feedback:
    Some of the nursing diagnoses developed by NANDA are useful in identifying patient problems related to drug therapy and are more commonly used when administering drugs. The nursing diagnoses developed by NANDA do not classify the patients according to their age groups or the drugs based on their actions. NANDA nursing diagnoses do not identify the expected outcome of treatments given. An expected outcome will be specifically related to the kind of drug treatment given to the patient. After the nursing diagnoses are formulated, the nurse develops expected outcomes, which are patient oriented. The expected outcomes will be generated through efficient planning and implementation of the care plan. NANDA nursing diagnoses are not used to identify expected outcomes for patients.

22. A nurse is caring for a client diagnosed with a respiratory condition for which drug therapy has been prescribed. Which of the following would the nurse need to address when developing appropriate expected outcomes related to the drug therapy?
    A) Amount of time the patient will take to recover fully
    B) Amount of drugs the patient will require during the treatment
    C) Possible adverse reactions that could occur during the therapy
    D) Maximum level of wellness reasonably attainable for the patient
    Ans: D
    Feedback:
    The nurse should know that the expected outcome describes the maximum level of wellness that is reasonably attainable for the patient and that the therapeutic effect is achieved. The expected outcome for a patient does not include the amount of time the patient will take to recover fully, the amount of drugs the patient will require during the treatment, or the possible adverse reactions that could occur during the therapy.

23. A patient with a cardiac disorder is being discharged home. Which of the following would the nurse include when teaching the patient about administering the prescribed drug therapy at home?
    A) Composition of the drug
    B) Disorders treated using the drug
    C) Method of drug administration
    D) Contraindications of the drug
    Ans: C
    Feedback:
    When the patient is willing and able to manage the treatment regimen, the nurse should provide information concerning the drug, the method of administration, what type of reactions to expect, and what to report to the primary health care provider. A patient willing to take responsibility for his or her treatment may need the nurse to develop a teaching plan that gives the patient the information needed to properly manage the therapeutic regimen. The nurse need not educate the patient on the composition of the drug or the disorders for which the drug is used because this information will not assist the patient in administering the drug by himself or herself to achieve the therapeutic effect. The nurse ensures that the drug is not contraindicated for the patient before its administration. Therefore, it is considered safe for the patient to take the drug independently.

24. A nurse is providing care to a patient who has been admitted to the health care facility. When administering drugs to this patient, which of the following would be most important for the nurse to do before administering a drug to the patient?
    A) Review the subjective and objective data.
    B) Provide the basis for the selection of nursing interventions.
    C) Review the related nursing diagnosis.
    D) List the potential goals to be achieved by the patient.
    Ans: A
    Feedback:
    Before administering a drug, the nurse should review the subjective and objective data obtained on assessment and consider any additional data, such as blood pressure, pulse, or statements made by the patient. The decision of whether to administer the drug is based on an analysis of all information. Listing the potential goals to be achieved helps in determining the expected outcome for the patient from the therapy. The nurse need not always list the potential outcome to be achieved by the patient before administering a drug. Nursing diagnosis provides a framework for the selection of nursing interventions, but it is not a nursing intervention, which should be performed before administering a drug. Nursing diagnosis helps in formulating a care plan for the patient. The nurse need not review the nursing diagnosis before administering drugs to the patient.

25. A nurse who has been caring for a patient determines that the plan has been successful based on which of the following?
    A) Expected outcomes are accomplished.
    B) Patient does not experience anxiety during therapy.
    C) Patient is better able to communicate with the nurse.
    D) Subjective and objective data are successfully obtained.
    Ans: A
    Feedback:
    The evaluation is complete and successful if the expected outcomes are accomplished or if progress occurs. If the outcomes are not accomplished, different interventions are needed. If the patient does not experience anxiety during therapy, then the nurse is better able to implement the care planned for the patient and expect maximum effectiveness during evaluation, but evaluation of the care plan is not considered complete just because the patient does not experience anxiety during therapy, although it facilitates receiving a positive response during evaluation. Similarly, if the patient is able to effectively communicate his or her feelings to the nurse, the nurse can implement the care plan in a better way to yield maximum therapeutic results for the patient, but good communication alone should not be considered a factor that completes the evaluation for the patient. Obtaining subjective and objective data is important for accurate drug administration and therapy implementation. Evaluation for a patient cannot be considered complete only on the basis of subjective and objective data.

26. A nurse is assigned to care for a patient with a cardiac disorder. During assessment, which of the following would be most appropriate to do when obtaining objective data related to the patient's condition?
    A) Review the patient's health history.
    B) Auscultate heart and lung sounds.
    C) Review the patient's family history.
    D) Inquire about the patient's eating habits.
    Ans: B
    Feedback:
    To obtain objective data from the patient, the nurse would auscultate heart and lung sounds. Objective data includes the facts obtained through physical assessment or physical examination. Reviewing the patient's health and family history and inquiring about the patient's eating habits will help the nurse in obtaining subjective data, which includes facts supplied by the patient and the patient's family.

27. A nurse prepares to administer a prescribed medication and collects the necessary data for administering the drug. Based on this information, the nurse decides to withhold the drug and contact the prescriber. The nurse is in which phase of the nursing process?
    A) Assessment
    B) Planning
    C) Implementation
    D) Evaluation
    Ans: C
    Feedback:
    Giving or withholding a drug and contacting the patient's health care provider are nursing activities related to the implementation phase of the nursing process. Assessment is reflected in the data collection that the nurse has completed. Planning anticipates what will happen in the implementation phase. Evaluation would occur after the drug is administered and the nurse determines if the patient is experiencing therapeutic and/or adverse effects.

28. After administering a prescribed medication for pain relief, the nurse is evaluating the patient's response to therapy. Which of the following would the nurse document as objective data?
    A) Patient identifies a pain rating of 3 out of 10.
    B) Patient states that pain is much less.
    C) Patient's wife reports the patient was moaning in his sleep.
    D) Patient complains of feeling sleepy after taking the drug.
    Ans: A
    Feedback:
    Pain rating is an objective measure and thus would be documented as such. Patient statements such as the pain being much less or reports of feeling sleepy are subjective data. Information from others, such as the patient's wife, would also be considered subjective data.

29. A nurse is conducting an initial assessment of a patient. Which of the following would the nurse be most likely to address? Select all that apply.
    A) Use of over-the-counter drugs
    B) Effectiveness of pain relief
    C) History of allergies
    D) Auscultation of bowel sounds
    E) Understanding of newly prescribed medication
    Ans: A, C, D
    Feedback:
    An initial assessment is broad in scope and is used as a baseline for future comparisons. Typically this would include information about the patient's use of over-the-counter drugs, allergy history, and physical examination findings such as auscultation of bowel sounds. Effectiveness of pain relief and an understanding of prescribed medication are areas that would most likely be part of an ongoing assessment.

30. The nurse identifies the nursing diagnosis of Noncompliance for a patient. Which of the following would the nurse most likely identify as the expected outcome?
    A) Patient verbalizes understanding of when to call the health care provider.
    B) Patient demonstrates ability to maintain adherence to prescribed drug therapy.
    C) Patient verbalizes desire to manage prescribed medication schedule.
    D) Patient identifies the reason for the prescribed drug therapy for his illness.
    Ans: B
    Feedback:
    Demonstrating the ability to maintain adherence to the prescribed therapy would be the best outcome for a nursing diagnosis of Noncompliance. Although the reasons for noncompliance can be many, this outcome addresses the importance of the therapeutic plan. Verbalizing an understanding of when to call the health care provider and identifying reasons for the prescribed drug would be appropriate outcomes for the nursing diagnosis of Deficient Knowledge. Verbalizing a desire to manage the prescribed medication schedule would correlate with a nursing diagnosis of Effective Self Health Management.

31. After teaching a group of students about the nursing process, the instructor determines that the teaching was successful when the students identify goals and expected outcomes as components of which phase?
    A) Assessment
    B) Analysis
    C) Planning
    D) Implementation
    Ans: C
    Feedback:
    Patient-oriented goals and expected outcomes are developed during the planning phase. Assessment involves the collection of data. Analysis involves clustering of the data into similar groupings to determine patient need. Implementation involves carrying out the actions identified during the planning phase.

1. Which of the following results occur when nurses teach clients effectively? Select all that apply.
   A) Improved client outcomes
   B) Decreased adherence with drug regimen
   C) Increased ability of client to manage drug therapy
   D) Lengthened time for client outcomes
   E) Limited ability of client to manage drug therapy
   Ans: A, C
   Feedback:
   Client teaching improves the client outcome of being able to manage drug therapy. By understanding the reason for the prescribed medications, the patient is more likely to be adherent to the treatment plan and get better.

2. A nurse is preparing a teaching plan for a client. When developing this plan, which of the following would the nurse do to improve a client's motivation to learn? Select all that apply.
   A) Educate the client about his or her disease process.
   B) Do not include caregivers in the education process as it is a HIPAA violation.
   C) Create an accepting and positive atmosphere.
   D) Ignore the client's questions until you are finished teaching.
   E) Encourage client participation in goal planning.
   Ans: A, C, E
   Feedback:
   The nurse can improve a client's motivation by educating the client about his or her disease process, creating an accepting and positive learning atmosphere, and encouraging the client to participate in goal planning.

3. After teaching a group of students about the domains of learning, the instructor determines that the teaching was successful when the students identify which of the following as a domain? Select all that apply.
   A) Cognitive domain
   B) Affective domain
   C) Physical domain
   D) Psychological domain
   E) Psychomotor domain
   Ans: A, B, E
   Feedback:
   The three domains of learning are the cognitive, affective, and psychomotor domains.

4. A nurse is preparing a teaching plan to address the domains of learning. Which of the following would the nurse address when focusing on the cognitive domain? Select all that apply.
   A) Thought
   B) Feelings
   C) Beliefs
   D) Recall
   E) Decision making
   Ans: A, D, E
   Feedback:
   The cognitive domain refers to intellectual activities such as thought, recall, decision making, and drawing conclusions. The affective domain involves feelings and beliefs.

5. A group of nursing students are reviewing information about the various domains of learning. The students demonstrate understanding of the information when they identify which of the following as reflecting the affective domain? Select all that apply.
   A) Thought
   B) Feelings
   C) Beliefs
   D) Recall
   E) Decision making
   Ans: B, C
   Feedback:
   The affective domain includes attitudes, feelings, beliefs, and opinions of the client or caregiver. The cognitive domain includes thought, recall, and decision making.

6. When teaching a client, the nurse interprets which of the following as indicating that the client is using the cognitive domain to do which of the tasks? Select all that apply.
   A) Form new beliefs
   B) Process new information
   C) Make a decision
   D) Ask questions
   E) Demonstrate a physical skill
   Ans: B, C, D
   Feedback:
   The client uses the cognitive domain to process the information, ask questions, and make decisions. Forming new beliefs is involved with the affective domain. Demonstrating a physical skill reflects the psychomotor domain.

7. The nurse is implementing a teaching plan for a client diagnosed with diabetes and his caregiver. Which of the following actions by the nurse reflects the cognitive domain? Select all that apply.
   A) Instruction on the correct administration of insulin
   B) Review of complications associated with diabetes
   C) Review of adverse reactions associated with insulin
   D) Review of how frequently to administer insulin
   E) Instruction on how to use a glucometer
   Ans: B, C, D
   Feedback:
   The nurse makes use of the cognitive domain when giving information to the client or caregiver about the disease process, medication regimen, and adverse reactions. Instructions on correct administration of insulin and how to use a glucometer involve psychomotor skills, which reflect the psychomotor domain.

8. The nurse makes use of the psychomotor domain when information is given to the client or caregiver about which of the following? Select all that apply.
   A) Instruction on the correct administration of insulin
   B) Review of complications associated with diabetes
   C) Review of adverse reactions associated with insulin
   D) Review of how frequently to administer insulin
   E) Instruction on how to use a glucometer
   Ans: A, E
   Feedback:
   The nurse makes use of the psychomotor domain when information is given to the client or caregiver about a physical skill or task. A review of complications, adverse reactions, and frequency of administration involve the cognitive domain.

9. When reviewing the nursing process during a class discussion, an instructor determines that the teaching was successful when the class identifies which of the following as being involved?
   Select all that apply.
   A) Identifying client health needs
   B) Reviewing client medications
   C) Devising a plan of care
   D) Initiating a nursing plan
   E) Evaluating the effectiveness of a plan
   Ans: A, C, D, E
   Feedback:
   The nursing process is a systematic method of identifying client health needs, devising a plan of care to meet the identified needs, initiating the plan, and evaluating the plan's effectiveness.

10. To develop an effective teaching plan, the nurse must first determine a client's needs, which can include which of the following? Select all that apply.
    A) Information the client needs to know about a particular medication
    B) Client's ability to read
    C) Client's ability to learn the information presented
    D) Client's ability to use the information presented
    E) Client's ability to accept the information presented
    Ans: A, B, C, D, E
    Feedback:
    To develop an effective teaching plan, the nurse must first determine a client's needs, which can include information the client needs to know about a particular medication; the client's ability to learn, accept, and use information; and any barriers or obstacles to learning (which might include the client's ability to read).

11. A nurse is preparing a teaching plan and is determining the best time for teaching. Which of the following would be an inappropriate time for client teaching? Select all that apply.
    A) When there are visitors
    B) Immediately prior to discharge
    C) The day of admission
    D) While the client is sedated
    E) While the client is in pain
    Ans: A, B, D, E
    Feedback:
    Client teaching should not be performed when there are visitors, immediately prior to discharge, or if the client is sedated or in pain.

12. After teaching a client, the nurse is evaluating the client's knowledge of the material presented. Which of the following would be most appropriate to use? Select all that apply.
    A) Client recitation of information
    B) Client return demonstration
    C) Open-ended questions
    D) Closed-ended questions
    E) Nurse review of information
    Ans: A, B, C
    Feedback:
    The nurse can use return demonstration, client recitation of information, and open-ended questions to evaluate a client's knowledge of the material presented.

13. A nursing instructor is teaching a group of students about learning. The instructor determines that the teaching was successful when the students identify which of the following as characteristic of adult learning? Select all that apply.
    A) Adults prefer a formal learning environment.
    B) Adults draw on past experiences to facilitate learning.
    C) Adults learn best by listening.
    D) Adults learn best by active learning.
    E) Adults are most often visual learners.
    Ans: B, D, E
    Feedback:
    The following are true of adult learners: they prefer an informal learning environment; they draw on past experiences to facilitate learning; most adults are visual learners; and adults learn best and retain more by active or hands-on learning.

14. A nurse is working with a client on ways to help the client adapt drug administration in the home. Which of the following would be appropriate? Select all that apply.
    A) Preparing a daily calendar
    B) Preparing a pill box
    C) Providing written instructions
    D) Placing all medication in one bottle
    E) Developing a clear, easy-to-read dosing schedule
    Ans: A, B, C, E
    Feedback:
    The nurse can employ the following methods to help the client adapt drug administration in the home: prepare a daily calendar, prepare a pill box, provide written instructions, and develop a clear, easy-to-read dosing schedule.

15. A nurse is formulating a teaching plan for a client receiving a new drug. Which of the following information would the nurse expect to include in the teaching plan? Select all that apply.
    A) Adverse reactions to expect from the drug
    B) Adverse reactions to report to the physician
    C) Therapeutic response to expect from the drug
    D) The route of administration
    E) The dose of drug to administer
    Ans: A, B, C, D, E
    Feedback:
    The following information should be included in the teaching plan when discussing a new drug with the client: adverse reactions to expect from the drug, adverse reactions to report to the physician, therapeutic response to expect from the drug, the route of administration, and the dose of drug to administer.

16. To facilitate the teaching and learning process, the nurse demonstrates understanding of the need for developing a therapeutic relationship with a client. The nurse would ensure development of which of the following? Select all that apply.
    A) Trust
    B) Education
    C) Commitment
    D) Dedication
    E) Respect
    Ans: A, E
    Feedback:
    Development of a therapeutic relationship with a client is based on trust and respect. Optimizing the relationship helps accomplish the task of client teaching. Education, commitment, and dedication are not involved.

17. Which of the following dosage forms would most likely require relatively little client teaching? Select all that apply.
    A) Injectables
    B) Inhalers
    C) Tablets
    D) Capsules
    E) Transdermal patches
    Ans: C, D
    Feedback:
    Tablets and capsules are dosage forms that require relatively little client teaching because they often have simple uses in comparison to other forms such as injectables, inhalers, transdermal patches, suppositories, nasal sprays, and eye or ear drops.

18. A nurse is assessing a client's ability to learn. Which of the following would be most important for the nurse to consider? Select all that apply.
    A) Literacy level
    B) Language
    C) Presence of a learning impairment
    D) Visual impairment
    E) Hearing impairment
    Ans: A, B, C, D, E
    Feedback:
    When a nurse assesses a client's ability to learn, the nurse takes the following into consideration: client's literacy level, language, presence of a learning impairment, and hearing or visual impairment.

19. Client goals are set during the planning stage of the client's teaching plan. When the nurse is developing client-specific goals, which of the following should the nurse keep in mind? Select all that apply.
    A) Goals should be measurable.
    B) Goals should be attainable.
    C) Goals should be set by the client.
    D) Goals should be set by the physician.
    E) Goals should be set by the nurse.
    Ans: A, B
    Feedback:
    When the nurse is developing client-specific goals, the nurse should keep in mind that goals should be measurable and attainable and should include all parties involved, including the physician's, nurse's, and client's input.

20. Which of the following would be considered an appropriate client goal when teaching a client how to use a glucometer? Select all that apply.
    A) Demonstration of appropriate testing procedure
    B) Understanding of steps to take in the case of low blood glucose
    C) Understanding of blood glucose goals
    D) Understanding of the pathophysiology of diabetes
    E) Understanding of frequency of blood glucose testing
    Ans: A, B, C, E
    Feedback:
    Demonstration of appropriate testing procedure, understanding of steps to take in the case of low blood glucose, understanding of blood glucose goals, and understanding of frequency of blood glucose testing would be considered appropriate client goals for the nurse to set when teaching a client how to use a glucometer. Understanding of the pathophysiology of diabetes may be too much information for the client to grasp during instruction on how to use a glucometer. (This may be discussed at a later time).

21. A nurse is caring for a client with high blood pressure. The client has a sphygmomanometer at home. A family member wishes to learn how to measure blood pressure. The nurse demonstrates to the client and the family member how to take blood pressure measurements using the sphygmomanometer. The nurse identifies which domain of learning as being addressed?
    A) Psychomotor domain
    B) Affective domain
    C) Cognitive domain
    D) Intellectual domain
    Ans: A
    Feedback:
    Measuring blood pressure is a physical skill, which falls under the psychomotor domain of learning. The cognitive or the intellectual domain involves intellectual activities such as thought, recall, decision making, and drawing conclusions. The affective domain involves the patient's and the caregiver's attitudes, feelings, beliefs, and opinions.

22. A patient with seasonal allergies has been prescribed a nasal spray, which will be administered at home. The patient wants to know about the addictive nature of the nasal spray, the adverse reactions, and the harmful effects involved. Which of the following nursing diagnoses should the nurse address while educating the patient?
    A) Ineffective Self Health Management
    B) Anxiety
    C) Deficient Knowledge
    D) Effective Self Health Management
    Ans: D
    Feedback:
    Effective Self Health Management indicates a desire by the client to manage his or her own treatment regimen. It includes teaching about adverse drug reactions, harmful drug effects, and management of harmful effects. Ineffective Self Health Management helps in teaching patients who have complicated postdischarge medical regimens. Anxiety is appropriate for the client who has uncertainty and fear related to the regimen, for example, a person who is apprehensive about self-injections. Deficient Knowledge is used for patients who are deficient in cognitive knowledge and psychomotor skills.

23. A client is to be discharged from a nursing home. The nurse caring for the client has to educate the client regarding the appropriate use of prescribed drugs. Which factor would be most important in promoting learning?
    A) Attitude
    B) Motivation
    C) Interest
    D) Grasping power
    Ans: B
    Feedback:
    Motivation is probably the key factor in providing an impetus to the process of patient learning and teaching. Attitude, interest, and grasping power may also help the learning process, but without motivation the patient could be noncompliant to the treatment.

24. A cancer patient requires supplemental oxygen at home through an oxygen cylinder. The nurse assigned to the patient teaches the patient's brother to administer oxygen from the cylinder at home. Which of the following is most effective for the nurse to use when evaluating the patient's brother's understanding?
    A) Ask questions such as “Do you understand?”
    B) Ask the patient's brother to demonstrate the procedure.
    C) Ask the patient's brother to document the technique.
    D) Ask the patient's brother questions related to the procedure.
    Ans: B
    Feedback:
    To determine the effectiveness of teaching in this case, the nurse must evaluate the patient's brother's knowledge of the materials presented. This can be done by asking the patient's brother to demonstrate or explain the presented information. The nurse should not ask questions such as “Do you understand?” as the patient may be uncomfortable admitting a lack of understanding. Asking questions related to the procedure may confuse the person. Asking the patient's brother to document the technique would not provide enough information about whether or not he does understand what to do.

25. A patient in a local health care center is presented information on drug administration by the nurse. Which of the following would the nurse identify as having the least impact on the patient's learning?
    A) Patient's financial status
    B) Prior knowledge
    C) Prior perceptions
    D) Previous experiences
    Ans: A
    Feedback:
    Financial status would have no impact on the patient's learning. To interpret information using the cognitive domain, the patient uses prior knowledge, perceptions, and previous experiences. The patient's opinions and feelings are used in the affective domain.

26. A patient admitted to a hospital has difficulty with information recall, decision making, and conclusion-drawing skills. The patient also lacks proper psychomotor knowledge. Which of the following nursing diagnoses would the nurse most likely identify for this patient?
    A) Knowledge Deficit
    B) Ineffective Self Health Management
    C) Effective Self Health Management
    D) Anxiety
    Ans: A
    Feedback:
    The nursing diagnosis used for patients with deficient cognitive knowledge and psychomotor skills is Deficient Knowledge. Ineffective Self Health Management is useful in discharge teaching. Effective Self Health Management describes a patient who is successfully managing the medication regimen. Anxiety would reflect a patient who is fearful or expresses concern regarding the drug regimen or shows a total lack of adherence to the drug regimen.

27. A nurse is caring for a patient with liver cirrhosis. The nurse has to collaborate on an individualized teaching plan to help the client administer the postdischarge medications. Which of the following would the nurse need to integrate into the plan? Select all that apply.
    A) The nurse's teaching ability
    B) The prescribed drug
    C) The patient's learning skills
    D) The patient's need to know the drugs
    E) The health care provider's preference
    Ans: B, D, E
    Feedback:
    Individualized teaching plans vary depending on the prescribed drug, health care provider's preference for facts to include and exclude, and what the patient needs to know to take the drug correctly. Factors such as the patient's learning skills and the nurse's teaching abilities are not considered when formulating an individualized teaching plan.

28. A patient with diabetes is being prepared for discharge. The nurse presents information to the patient regarding injections to be administered at home. Which intellectual activities are involved when the patient interprets this information using the cognitive domain of learning? Select all that apply.
    A) Recall
    B) Opinions
    C) Thought
    D) Attitude
    E) Decision making
    Ans: A, C, E
    Feedback:
    To interpret information using the cognitive domain, the patient uses intellectual activities such as recall, thought, and decision making. Opinions and attitude come under the affective domain of learning.

29. The nurse prepares a teaching plan to help a patient with viral influenza learn how to administer the prescribed drugs at home. Which factor would the nurse be alert to as posing an obstacle in the patient's learning process?
    A) Varied or different literacy levels
    B) Lack of high grasping skills
    C) Previous experience
    D) Prior knowledge
    Ans: A
    Feedback:
    Varied literacy levels pose obstacles in the patient's learning levels. Lack of high grasping skills, previous experience, and prior knowledge do not pose obstacles in the patient's learning process.

30. A nurse is caring for a 70-year-old patient diagnosed with diabetes. The patient is to be discharged soon, and the nurse needs to teach him about the administration of the oral medications. Which of the following would be most appropriate in helping the nurse learn about the patient's affective behavior? Select all that apply.
    A) Developing a therapeutic relationship with the patient
    B) Overlooking the concern of the patient's family
    C) Approaching the patient with respect
    D) Nurturing a relationship based on trust and respect
    E) Avoiding the patient's queries on sensitive issues
    Ans: A, C, D
    Feedback:
    To learn about the patient's affective behavior, the nurse should always approach the patient with respect and try to develop a therapeutic relationship with the patient. Such a relationship must be based on trust and respect. Overlooking the concern of the patient's family and avoiding the patient's queries on sensitive issues will not help the nurse to learn about the patient's affective behavior.

31. A patient is a kinesthetic learner. Which of the following would the nurse focus on when teaching this patient about drug administration?
    A) Doing the actual steps of the procedure
    B) Watching the nurse perform the procedure
    C) Listening to the nurse's instructions
    D) Observing how to perform the steps
    Ans: A
    Feedback:
    A kinesthetic learner learns by moving, touching, and doing. Therefore, the nurse would focus on having the patient perform the actual steps of the procedure. Watching the nurse perform the procedure and observing how to perform the steps would be appropriate for a patient who is a visual learner. Listening to the nurse's instructions would be appropriate for an auditory learner.

32. The nurse is assessing a patient and suspects that the patient may have limited health literacy. Which of the following would support this suspicion? Select all that apply.
    A) Clear description of how to take the medication
    B) Difficulty naming the medication
    C) Problems filling out forms accurately
    D) English as the primary language
    E) Inability to explain the purpose of the medication
    Ans: B, C, E
    Feedback:
    Behaviors indicating limited health literacy include filling out forms incompletely or inaccurately, an inability to name or give the purpose of medications, and an inability to describe how to take the medications. Higher rates of low health literacy are found in individuals with English as a second language.

33. A nurse is engaged in teaching a patient with low health literacy. Which statement would be most appropriate? Select all that apply.
    A) "Your test results are all negative."
    B) "Your doctor wants you to take this analgesic."
    C) "This medication will help your tumor get smaller."
    D) "You should take this pain killer when you start to hurt."
    E) "This cream is for the lesion on your arm."
    Ans: C, D
    Feedback:
    When teaching a patient with limited health literacy, use simple and clear language. People who are highly literate can have problems understanding language used in health care. The word "negative" is a positive finding when discussing an infection or cancer. This can be confusing to those who use negative in a different context. The nurse should avoid medical terms and instead use everyday language, for example, saying "pain killer" instead of "analgesic" when talking to patients. Other examples include "wound" instead of "lesion" or "tumor" instead of "carcinoma."

34. After teaching a group of nursing students about health communication, the instructor determines that the teaching was successful when the students identify which of the following as being an important factor? Select all that apply.
    A) Health literacy
    B) Learning style
    C) Cultural competency
    D) Identification of limited English proficiency
    E) Learning domain
    Ans: A, C, D
    Feedback:
    Three important factors to good health communication include health literacy, cultural competency, and identification of limited English proficiency. Learning style and learning domain are two aspects to consider for the teaching and learning process.

35. A group of nursing students are reviewing information about the patient–nurse relationship and the various factors affecting it. The students demonstrate a need for additional review when they identify which of the following as a factor?
    A) Health care reform
    B) Health care practice attitudes
    C) Increased rates of chronic illness
    D) Increased cultural diversity
    Ans: D
    Feedback:
    Factors that affect the patient–nurse relationship include changes in health care delivery and health care reform, change in attitudes of health care practices, the aging population, and the increase in chronic illness. Cultural diversity affects health communication.

1. After teaching a group of nursing students about sulfonamides, the instructor determines that the teaching was successful when the students identify which of the following as an example of a sulfonamide antibiotic? Select all that apply.
   A) Amoxicillin (Amoxil)
   B) Ciprofloxacin (Cipro)
   C) Sulfamethoxazole/trimethoprim (Bactrim)
   D) Clarithromycin (Biaxin)
   E) Silver sulfadiazine (Silvadene)
   Ans: C, E
   Feedback:
   Silver sulfadiazine (Silvadene) and sulfamethoxazole/trimethoprim (Bactrim) are sulfonamide antibiotics. Amoxicillin is an aminopenicillin. Ciprofloxacin is classified as a fluoroquinolone. Clarithromycin is a macrolide.

2. A group of nursing students are reviewing information about sulfonamides. Which of the following if stated by the students indicate understanding of this drug class? Select all that apply.
   A) Sulfonamides are well absorbed when given orally.
   B) Sulfonamides are poorly absorbed when given orally.
   C) Sulfonamides treat only gram-positive infections.
   D) Sulfonamides treat only gram-negative infections.
   E) Sulfonamides are excreted by the kidneys.
   Ans: A, E
   Feedback:
   Sulfonamides are well absorbed by the GI tract and are excreted by the kidneys. Sulfonamides treat both gram-positive and gram-negative infections.

3. When reviewing the medical records of several clients who are prescribed sulfonamide therapy, the nurse would expect laboratory findings related to which bacteria? Select all that apply.
   A) *Pseudomonas aeruginosa*
   B) *Escherichia coli*
   C) *Klebsiella pneumoniae*
   D) *Streptococcus pyogenes*
   E) *Staphylococcus aureus*
   Ans: B, C, E
   Feedback:
   Sulfonamides are often used to control infections caused by both gram-negative and gram-positive bacteria, such as *Escherichia coli*, *Klebsiella pneumoniae*, and *Staphylococcus aureus*. Typically, sulfonamides are not used to treat infections caused by *Pseudomonas aeruginosa* or *Streptococcus pyogenes*.

4. Sulfonamides are commonly used to treat which of the following types of infections? Select all that apply.
   A) Ulcerative colitis
   B) Urinary tract infection
   C) Acute otitis media
   D) Upper respiratory tract infection
   E) Osteomyelitis
   Ans: A, B, C
   Feedback:
   Sulfonamides are often used to treat ulcerative colitis, urinary tract infection, and acute otitis media.

5. A client is taking trimethoprim and sulfamethoxazole (Bactrim DS) one tablet twice daily for 14 days. Which of the following would the nurse include when teaching the client about possible adverse reactions? Select all that apply.
   A) Muscle pain
   B) Blurred vision
   C) Anorexia
   D) Crystalluria
   E) Photosensitivity
   Ans: C, D, E
   Feedback:
   Teaching should address potential adverse reactions that can occur while taking a sulfonamide. These adverse reactions include nausea, vomiting, anorexia, stomatitis, chills, fever, crystalluria, and photosensitivity.

6. The nurse suspects that a client who is taking a sulfonamide has leukopenia. Which assessment findings would support this suspicion? Select all that apply.
   A) Sore throat
   B) Cough
   C) Nausea
   D) Photosensitivity
   E) Bruising
   Ans: A, B
   Feedback:
   Antibiotics including sulfonamides can lead to leukopenia, which would be manifested by fever, sore throat, or cough. Thrombocytopenia is also possible and would be manifested by easy bruising or unusual bleeding from minor to moderate trauma. Nausea and photosensitivity are adverse reactions to sulfonamides.

7. A nurse is reviewing the laboratory test results of a client receiving sulfasalazine therapy for ulcerative colitis. Which of the following would the nurse anticipate finding? Select all that apply.
   A) Pancytopenia
   B) Leukopenia
   C) Thrombocytopenia
   D) Aplastic anemia
   E) Iron deficiency anemia
   Ans: B, C, D
   Feedback:
   Leukopenia, thrombocytopenia, and aplastic anemia are hematologic changes that may occur during prolonged sulfonamide therapy, such as during ulcerative colitis treatment with sulfasalazine.

8. Which of the following represent contraindications to treatment with a sulfonamide? Select all that apply.
   A) Children younger than 6 years of age
   B) Adults older than 65 years of age
   C) Lactating females
   D) Clients with group A beta-hemolytic streptococci infections
   E) Women in the second trimester of pregnancy
   Ans: C, D
   Feedback:
   The sulfonamides are contraindicated in clients with hypersensitivity to the sulfonamides, during lactation, in children younger than 2 years of age, near the end of pregnancy, and for infections caused by group A beta-hemolytic streptococci.

9. The nurse is providing care to a client with diabetes who is receiving sulfonamides. The nurse counsels the client about the increased risk of hypoglycemia, especially if the client is taking which of the following medications? Select all that apply.
   A) Tolbutamide (Orinase)
   B) Lisinopril (Prinivil)
   C) Simvastatin (Zocor)
   D) Losartan (Cozaar)
   E) Chlorpropamide (Diabinese)
   Ans: A, E
   Feedback:
   Sulfonamides may inhibit the hepatic metabolism of the oral hypoglycemic drugs tolbutamide (Orinase) and chlorpropamide (Diabinese). Elderly clients may be especially sensitive to this reaction. Lisinopril, simvastatin, and losartan are used for cardiac conditions.

10. A client is diagnosed with a urinary tract infection. When obtaining the client's drug history, the client reports using an herbal product in the past to prevent and relieve the symptoms. Which of the following would the client most likely identify?
    A) Ginger
    B) Feverfew
    C) Saw palmetto
    D) Cranberry
    Ans: D
    Feedback:
    Cranberries and cranberry juice are commonly used remedies for preventing and relieving symptoms of UTIs. However, if an individual suspects a UTI, medical attention is necessary.

11. A nurse is working in an ambulatory care setting that involves seeing clients with infections that require treatment. Which of the following would be important for the nurse to assess in these clients? Select all that apply.
    A) Client's use of self-remedies
    B) Review of lab results
    C) Vital signs
    D) Client's symptoms
    E) Client's general appearance
    Ans: A, B, C, D, E
    Feedback:
    When assessing a client who may have an infection, the nurse should gather information about the client's general appearance; vital signs; symptoms, including the length of time the client has been experiencing them; and any self-remedies used. In addition, the nurse should review the results of any laboratory and diagnostic tests.

12. A client with a fever is ordered to receive sulfonamide therapy for an infection. The nurse needs to evaluate the client for which of the following during the course of therapy? Select all that apply.
    A) Response to drug therapy
    B) Elevated blood glucose levels
    C) Mental status changes
    D) Occurrence of adverse reactions
    E) Decrease in temperature
    Ans: A, D, E
    Feedback:
    During the course of therapy, the nurse evaluates the client at periodic intervals for response to the drug, including relief of symptoms and decrease in temperature, as well as the occurrence of any adverse reactions.

13. The nurse is preparing to administer a prescribed sulfonamide. Which of the following would the nurse do? Select all that apply.
    A) Have the client sit up to take the drug
    B) Give the prescribed drug on an empty stomach
    C) Be sure to administer the drug immediately after a meal
    D) Have the client decrease his fluid intake
    E) Encourage the client to drink additional fluids
    Ans: A, B, E
    Feedback:
    Oral medication should be administered to clients only when they are in an upright or sitting position. Sulfonamides should be administered on an empty stomach if tolerated with 8 ounces of water. Increased fluid intake is encouraged to prevent crystalluria.

14. A nurse is preparing a plan of care for an older adult client who is receiving sulfonamide therapy. Which of the following would the nurse include in the plan of care to reduce the likelihood of causing renal damage? Select all that apply.
    A) Administer sulfonamides once daily.
    B) Increase fluid intake up to 2000 mL if tolerated.
    C) Use sulfonamides cautiously in clients with renal impairment.
    D) Administer the dose intravenously instead of orally.
    E) Ask the prescriber to change the medication ordered.
    Ans: B, C
    Feedback:
    Older adults experience a decline in renal function with aging. Therefore, sulfonamides must be used cautiously in older clients. In addition, increasing fluid intake up to 2000 mL daily can decrease the likelihood of causing renal damage in older clients. The drug is administered throughout the day, not as a once-daily dose. Sulfonamides can affect renal function regardless of the route administered. Asking the prescriber to change the medication ordered may be appropriate but is not necessary as long as the drug is administered cautiously and the client is monitored closely.

15. A nurse is applying silver sulfadiazine to a client's burn. Which of the following would be important for the nurse to do? Select all that apply.
    A) Clean and remove debris from the burned area before application
    B) Allow air drafts over the burn area to speed the healing process
    C) Apply a 1/2-inch-thick layer of cream to the burn
    D) Wear sterile gloves when applying the cream to the burn
    E) Warn client of burning sensation during and shortly following application
    Ans: A, D, E
    Feedback:
    When applying silver sulfadiazine cream to a burn, clean and remove debris from the burned area, apply cream while wearing sterile gloves, apply a 1/16-inch-thick layer to the area, keep the client away from air drafts to decrease pain, and warn the client that he or she may experience a burning sensation during and shortly following cream application.

16. A client is being discharged with a prescription for sulfasalazine. Which of the following would the nurse include in the discharge teaching plan? Select all that apply.
    A) Take the drug 1 hour before or 2 hours after meals.
    B) Use protective sunscreen or cover exposed areas when going outside.
    C) Finish the entire course of sulfonamide even if you begin feeling better.
    D) Decrease fluid intake to prevent increased excretion of the drug.
    E) Keep all follow-up appointments.
    Ans: B, C, E
    Feedback:
    The nurse should teach the client to take sulfasalazine with food or immediately after a meal, to use sunscreen or cover exposed areas to prevent severe sunburn, to increase fluid intake to prevent renal calculi, to finish the entire course of drug even if the symptoms go away, and to keep all follow-up appointments.

17. A female client receiving methotrexate for the treatment of rheumatoid arthritis is given a prescription for trimethoprim and sulfamethoxazole (Bactrim DS). The client returns to the physician's office feeling worse than before. She now has a cough and unusual bruising on the extremities. The physician orders a complete blood count and a complete metabolic profile. Which test results would the nurse expect to find? Select all that apply.
    A) Increased hemoglobin
    B) Decreased number of white blood cells
    C) Increased number of red blood cells
    D) Decreased number of platelets
    E) All values should be within normal limits
    Ans: B, D
    Feedback:
    The concomitant use of methotrexate and sulfonamides, like trimethoprim and sulfamethoxazole (Bactrim DS), can result in increased bone marrow suppression, leading to decreased amounts of white blood cells, red blood cells, and platelets in the blood.

18. A client is prescribed sulfadiazine one tablet twice daily for 10 days. When reviewing the client's history, the nurse notes that the client is also taking warfarin. The nurse would be alert for which of the following?
    A) Prolonged clotting times
    B) Increased risk of infection
    C) Decreased antibiotic effect
    D) Decreased white blood cell count
    Ans: A
    Feedback:
    When warfarin and sulfonamides are given concomitantly, an increase in action of the anticoagulant is seen, leading to an increase in clotting time, such as PT/INR, and an increased risk of bleeding. An increased risk of infection and a decrease in the white blood cell count would occur when a sulfonamide is given with methotrexate. The combination of warfarin and sulfonamide does not impact the effect of the antibiotic.

19. A nurse is to administer sulfasalazine to a client with ulcerative colitis. Which of the following interventions would be most important while caring for this client?
    A) Stop dosage if skin turns orange-yellow color.
    B) Regularly inspect client's stool samples.
    C) Give the drug on an empty stomach.
    D) Administer cranberry juice to the client.
    Ans: B
    Feedback:
    While providing care to a client receiving sulfasalazine therapy for ulcerative colitis, the nurse should regularly inspect all stool samples and record their number and appearance. Yellow skin or urine in clients receiving sulfasalazine is normal, and the nurse should not stop the dosage. Sulfasalazine is administered with meals or immediately afterward, not on an empty stomach. Administering cranberry juice is helpful for clients with urinary tract infections, but not for clients with ulcerative colitis.

20. A nurse is caring for a client with a urinary tract infection. After administering a sandwich and a large glass of cranberry juice to a client, the nurse observes that the client has developed diarrhea. Which of the following is the most likely cause of the client's condition?
    A) Extremely large dosage of cranberry juice
    B) Lack of activity or exercise
    C) Occurrence of crystalluria
    D) Minimized food and fluid intake
    Ans: A
    Feedback:
    Clients may develop gastrointestinal distress such as diarrhea if they have consumed extremely large doses of cranberry juice. The recommended dose is 6 ounces of juice twice daily. Cranberry juice on an empty stomach or immediately after dosage will not lead to diarrhea if taken in the recommended amount. Minimized food and fluid intake or lack of exercise does not increase the chances of diarrhea. Crystalluria does not cause diarrhea.

21. A nurse is to administer mafenide to a client. The nurse would be alert for which of the following?
    A) Rash, itching, or other allergic reactions
    B) Crystals in the urine sample
    C) Inflammation of the mouth
    D) Loss of appetite
    Ans: A
    Feedback:
    The nurse should assess for allergic reactions such as rash, itching, edema, and urticaria when administering mafenide. Topical sulfonamides like mafenide do not cause crystalluria, inflammation of the mouth, or loss of appetite.

22. After administering sulfonamides to a client, the nurse observes that he has developed a fever, cough, and muscular aches. The nurse also observes that the client has developed lesions in the form of red wheals on the neck and the mouth. The nurse interprets these findings as indicating which of the following?
    A) Stevens-Johnson syndrome (SJS)
    B) Anaphylactic shock
    C) Thrombocytopenia
    D) Leukopenia
    Ans: A
    Feedback:
    Clients with Stevens-Johnson syndrome (SJS) may complain of fever, cough, muscular aches and pains, and headache. Additional signs include lesions on the neck and mouth. Lesions are not symptoms of leukopenia or anaphylactic shock. A client with thrombocytopenia develops bruises on the skin but not lesions in the form of red wheals.

23. The health care professional has recommended sulfonamide therapy for a client. While obtaining the client's medical history, the nurse discovers that he is taking oral anticoagulants. Which of the following are the possible effects of combining sulfonamide therapy with oral anticoagulants?
    A) Increased action of the anticoagulant
    B) Increased risk of anaphylactic shock
    C) Rendering of sulfonamide therapy ineffective
    D) Development of leukopenia
    Ans: A
    Feedback:
    Taking sulfonamide drugs when the client is already taking oral anticoagulants may result in increased action of the anticoagulants. Anaphylactic shock and leukopenia are some of the adverse reactions of sulfonamides but are not associated with mixing sulfonamides and anticoagulants. Oral anticoagulants do not decrease the effectiveness of sulfonamides.

24. A client who is on sulfonamide therapy is about to be discharged. Which of the following precautions should the nurse instruct the client to follow to reduce the effects of photosensitivity?
    A) Wear protective clothing and sunscreen when outside.
    B) Increase fluid intake.
    C) Avoid lights while indoors.
    D) Wear protective footwear.
    Ans: A
    Feedback:
    The nurse should encourage a client to wear protective clothing while going out in the sun to reduce the effect of photosensitivity. While increasing the fluid intake is recommended, it does not help combat the effects of photosensitivity. There is no need to avoid lights while indoors; the skin becomes sensitive only to harsh sunlight during sulfonamide therapy. Wearing protective footwear may protect the feet from injury, but it will not protect the skin from the harmful effects of photosensitivity.

25. A 60-year-old client who is on sulfonamide therapy has impaired urinary elimination. She does not want to increase her oral fluid intake because of fear of incontinence. Which of the following nursing interventions would be most appropriate?
    A) Inform the client that there is no need to increase fluid intake.
    B) Inform the client that increasing fluid intake will not result in incontinence.
    C) Teach the client the times to take fluids to maintain continence.
    D) Increase fluid intake by 1000 mL instead of 2000 mL to avoid incontinence.
    Ans: C
    Feedback:
    The nurse's responsibility is to help the client overcome the fear of incontinence and to teach her when to take fluids to maintain continence. Instead of telling the client that increasing fluid intake has no effect on continence, the nurse should focus on helping the client with her problems of incontinence. The nurse should instruct the client to increase the fluid intake by at least 2000 mL, instead of only 1000 mL; however, this will not help control incontinence.

26. A nurse is caring for a client who is being administered sulfasalazine. Which of the following instructions should the nurse include to ensure that the client gets the full benefits of the treatment?
    A) Take dosage while eating or immediately after eating.
    B) Increase food intake for the duration of sulfonamide therapy.
    C) Take the drug with a full glass of milk instead of water.
    D) Drink at least two to three 8-ounce glasses of fluid every day.
    Ans: A
    Feedback:
    The nurse should administer sulfasalazine with food or immediately afterward. Increasing the food intake during sulfonamide therapy is not necessary, as long as a proper diet is maintained and the physician's recommendations are followed. Two to three 8-ounce glasses of fluid is not enough; the client should drink at least eight to ten 8-ounce glasses of fluid every day. All drugs should be taken with water and not milk, juice, or any other liquid, unless specifically instructed by the physician.

27. A client who is being discharged has been instructed to continue with sulfonamide therapy for a week. Which of the following points should the nurse include in the teaching plan to educate the client about the therapy?
    A) Discontinue dosage if symptoms of infection disappear.
    B) Take the drug a few minutes before a meal.
    C) Take any off-the-shelf medication if fever occurs.
    D) Ensure that all follow-up appointments are met.
    Ans: D
    Feedback:
    The nurse's plan should include educating the client about the importance of keeping the follow-up appointments. The nurse should instruct the client to adhere to the dosage schedule and not discontinue it even if the symptoms of the infection have gone. The client should inform the primary health care provider if fever, skin rash, or nausea occurs during the therapy. The client should be instructed to take the drug on an empty stomach (at least 2 hours before or after a meal) and not just before a meal.

28. A nurse is caring for a client with burns. The client is prescribed topical silver sulfadiazine. The nurse would be alert for which of the following?
    A) Facial edema
    B) Skin necrosis
    C) Headache
    D) Rash
    Ans: B
    Feedback:
    Skin necrosis is an adverse effect of silver sulfadiazine that the nurse should be alert for. Facial edema and rash are adverse effects of mafenide, used for second- and third-degree burns. Headache is an adverse effect of sulfadiazine, used for urinary tract infection.

29. After teaching a group of nursing students about the action of sulfonamides, the instructor determines that the teaching was successful when the students state that the action of this class of drugs is primarily which of the following?
    A) Bacteriostatic
    B) Bactericidal
    C) Promotor of folic acid activity
    D) Bacterial cell metabolizer
    Ans: A
    Feedback:
    The sulfonamides are primarily bacteriostatic because of their ability to inhibit the activity of folic acid in bacterial cell metabolism. They are not bactericidal.

30. When developing the plan of care for a client receiving sulfonamides for treatment of a urinary tract infection, the nurse identifies actions for encouraging fluid intake and monitoring intake and output based on which nursing diagnosis?
    A) Risk for Fluid Imbalance
    B) Impaired Urinary Elimination
    C) Risk for Ineffective Renal Perfusion
    D) Stress Incontinence
    Ans: B
    Feedback:
    A client with a urinary tract infection already is experiencing an alteration in urinary elimination. Because one adverse effect of the sulfonamide drugs is altered elimination patterns, it is important to help the client maintain adequate fluid intake and output. The nurse would encourage clients to increase fluid intake to 2000 mL or more per day to prevent crystalluria and stones (calculi) forming in the genitourinary tract, as well as to aid in removing microorganisms from the urinary tract. It is important to measure and record the client's intake and output every 8 hours and notify the primary health care provider if the urinary output decreases or the client fails to increase his or her oral intake. If the client is unable to maintain adequate intake, then he or she would be at risk for fluid imbalance. If renal injury would occur, then the client would be at risk for ineffective renal perfusion. Bladder training would be an appropriate intervention to address stress incontinence.

31. After teaching the client about taking his prescribed sulfonamide therapy, the nurse determines that the client needs additional teaching when he states which of the following?
    A) "I should take the drug with a large glass of water each time."
    B) "I can take the drug at different times of the day each day."
    C) "I have to finish the full prescription for the medication."
    D) "I should call my doctor if my symptoms seem to get worse."
    Ans: B
    Feedback:
    It is important that the client takes the drug at the scheduled intervals consistently throughout the course of the therapy because a certain amount of the drug must be in the body at all times for the infection to be controlled. The client is correct in taking the drug with a large glass of water each time, finishing the full prescription, and calling the doctor if symptoms get worse.

32. A client develops a cough and fever and laboratory test results reveal leukopenia after the client receives sulfonamide therapy. When developing the client's plan of care, the nurse would identify which nursing diagnosis?
    A) Impaired Urinary Elimination
    B) Impaired Skin Integrity
    C) Risk for Secondary Infection
    D) Deficient Knowledge
    Ans: C
    Feedback:
    Fever and leukopenia suggest an infection, which can occur secondarily with sulfonamide therapy. Therefore, Risk for Infection would be the most appropriate nursing diagnosis. Impaired Urinary Elimination would be appropriate if the client was experiencing changes in urinary output. Impaired Skin Integrity would be appropriate if the client developed a rash or hypersensitivity reaction. Deficient Knowledge would be appropriate if the client lacked understanding of the drug therapy, which is not evident in this situation.

33. A client asks the nurse why she needs to increase her fluid intake while taking sulfonamides. Which response by the nurse would be most appropriate?
    A) "The fluids will help to decrease your risk for kidney stones."
    B) "You need fluids so that you won't develop a reaction in the sunlight."
    C) "Fluids prevent you from getting dehydrated."
    D) "You need fluids to keep your blood count from dropping too low."
    Ans: A
    Feedback:
    With sulfonamides, the client is at risk for crystalluria and kidney stones. Increasing fluid intake helps to reduce the risk for their development. Fluids will have no effect on the development of photosensitivity or maintaining blood counts. Although fluids help to minimize the risk for dehydration, this is not the reason for increasing fluid intake with sulfonamide therapy.

1. After teaching a group of nursing students about penicillins, the instructor determines that the teaching was successful when the students identify which of the following as a group? Select all that apply.
   A) Synthetic penicillins
   B) Natural penicillins
   C) Penicillinase-resistant penicillins
   D) Aminopenicillins
   E) Extended-spectrum penicillins
   Ans: B, C, D, E
   Feedback:
   Penicillins are categorized into four groups including the natural penicillins, penicillinase-resistant penicillins, aminopenicillins, and extended-spectrum penicillins.

2. A group of students are reviewing information about the different penicillins. The students demonstrate understanding of the information when they identify which of the following as an example of a beta-lactamase inhibitor? Select all that apply.
   A) Piperacillin
   B) Amoxicillin
   C) Tazobactam
   D) Sulbactam
   E) Clavulanic acid
   Ans: C, D, E
   Feedback:
   Examples of beta-lactamase inhibitors are clavulanic acid, sulbactam, and tazobactam. Amoxicillin is an example of an aminopenicillin. Piperacillin is an example of an extended-spectrum penicillin.

3. A nurse is monitoring a client who is receiving penicillin. The nurse would assess the client for which of the following common GI tract adverse reactions? Select all that apply.
   A) Glossitis
   B) Stomatitis
   C) Esophagitis
   D) Diarrhea
   E) Gastritis
   Ans: A, B, D, E
   Feedback:
   A nurse monitoring a client taking penicillin should be aware of the common GI tract adverse reactions, including glossitis, stomatitis, gastritis, nausea, vomiting, diarrhea, and abdominal pain.

4. A nurse suspects that a client receiving oral penicillin therapy is developing pseudomembranous colitis based on assessment of which of the following?
   A) Bloody diarrhea
   B) Pruritus
   C) Chills
   D) Hives
   Ans: A
   Feedback:
   Pseudomembranous colitis is a severe, life-threatening form of diarrhea that occurs when normal flora of the bowel is eliminated and replaced with *C. difficile* (*C. diff*) bacteria. It is manifested by bloody diarrhea. Pruritus and hives would suggest an allergic reaction. Chills could indicate a wide range of problems.

5. A nurse is reviewing the laboratory test results of a client receiving penicillin therapy. Which of the following would the nurse identify as indicating an adverse hematologic reaction? Select all that apply.
   A) Pancytopenia
   B) Anemia
   C) Thrombocytopenia
   D) Leukopenia
   E) Hemoglobulinemia
   Ans: B, C, D
   Feedback:
   Nurses should monitor blood counts of clients taking penicillins for the following hematopoietic changes: anemia, thrombocytopenia, leucopenia, and bone marrow suppression.

6. A nurse is preparing to administer penicillin therapy. The nurse would expect to administer penicillins cautiously to clients with which of the following? Select all that apply.
   A) History of allergies
   B) Diabetes
   C) Asthma
   D) Bleeding disorders
   E) Hypertension
   Ans: A, C, D
   Feedback:
   Penicillins should be used cautiously in clients with renal disease, asthma, bleeding disorders, GI disease, pregnancy or lactation, and a history of allergies.

7. Which of the following should be included in the nurse's preadministration assessment prior to administering a penicillin to a client? Select all that apply.
   A) Allergy history
   B) Medical history
   C) Medication history
   D) Blood glucose levels
   E) Current symptoms
   Ans: A, B, C, E
   Feedback:
   An allergy history, medical and surgical history, medication history, and the current symptoms of the infection should be included in the nurse's preadministration assessment prior to a client receiving a penicillin.

8. A group of nursing students are reviewing the different groups of penicillins. The students demonstrate understanding when they identify which of the following as an example of a penicillinase-resistant penicillin? Select all that apply.
   A) Dicloxacillin
   B) Penicillin G
   C) Nafcillin
   D) Oxacillin
   E) Ampicillin
   Ans: A, C, D
   Feedback:
   Dicloxacillin, nafcillin, and oxacillin are examples of penicillinase-resistant penicillins. Penicillin G is an example of a natural penicillin. Ampicillin is an example of an aminopenicillin.

9. When performing an ongoing assessment of a client receiving amoxicillin (Amoxil), the nurse should monitor the client for which of the following? Select all that apply.
   A) Relief of symptoms
   B) Development of a rash
   C) Increase in appetite
   D) Change in appearance or amount of drainage
   E) Decrease in temperature
   Ans: A, C, D, E
   Feedback:
   An ongoing assessment is important in evaluating the client's response to therapy, such as a decrease in temperature, relief of symptoms caused by the infection, an increase in appetite, and a change in the appearance and amount of drainage.

10. A group of nursing students are reviewing information about administering penicillins. The students demonstrate an understanding of the information when they identify which drugs as being given without regard to meals? Select all that apply.
    A) Amoxicillin (Amoxil)
    B) Ampicillin (Principen)
    C) Penicillin V (Veetids)
    D) Amoxicillin/clavulanate (Augmentin)
    E) Carbenicillin indanyl (Geocillin)
    Ans: A, C
    Feedback:
    Amoxicillin and penicillin V can be administered without regard to meals, unlike the rest of the penicillins, such as ampicillin, amoxicillin/clavulanate, or carbenicillin indanyl, which should be given on an empty stomach.

11. A client develops a mild skin irritation while receiving penicillin therapy. Which of the following would the nurse advise the client to avoid? Select all that apply.
    A) Harsh soaps
    B) Perfumed lotions
    C) Antipyretic creams
    D) Rubbing the irritating area
    E) Wearing rough or irritating clothing
    Ans: A, B, D, E
    Feedback:
    When skin irritation is present during the administration of penicillin, the nurse should advise the client to avoid harsh soaps, perfumed lotions, rubbing the irritated area, or wearing rough or irritating clothing.

12. A client is prescribed penicillin therapy to treat an infection. Which of the following would the nurse include in the teaching plan for the client to reduce her risk of fungal superinfections? Select all that apply.
    A) "Yogurt can sometimes help."
    B) "Try drinking some buttermilk."
    C) "You could take *Acidophilus* capsules."
    D) "Rinse your mouth daily with an alcohol-based mouthwash."
    E) "Use a soft-bristle toothbrush when brushing."
    Ans: A, B, C, E
    Feedback:
    The nurse can recommend that, if the diet permits, yogurt, buttermilk, or *Acidophilus* capsules may be taken to reduce the risk of fungal superinfection. Also, brushing with a soft-bristle toothbrush and frequent mouth care with a nonirritating solution can be helpful.

13. A patient who has been on penicillin therapy for several days has developed inflamed oral mucous membranes and swelling in the tongue and the gums. The primary health care provider has diagnosed it as a fungal superinfection of the oral cavity resulting in impaired oral mucous membranes. Which of the following interventions should the nurse perform?
    A) Inspect mouth and gums regularly.
    B) Instruct patient to avoid brushing teeth.
    C) Offer patient a liquid diet.
    D) Instruct the patient to gargle every 2 hours.
    Ans: A
    Feedback:
    The nurse should regularly inspect the patient's mouth and gums to assess the patient's progress. The nurse should instruct the patient to use a soft-bristled toothbrush. The patient need not follow a liquid diet; a nonirritating soft diet can be recommended. Gargling every 2 hours may not help relieve the symptoms and may even aggravate the existing condition.

14. Before administering the first dose to the client, which assessment should the nurse perform as part of the preadministration assessment?
    A) Review of renal and hepatic function tests
    B) Inspection of patient's stools
    C) Evaluation of patient's lifestyle and diet
    D) General history of patient's health
    Ans: D
    Feedback:
    Before administering the first dose of penicillin, the nurse should obtain and review the patient's general health history, including any allergy history, a history of all medical and surgical treatments, a drug history, and the current symptoms of the infection. The patient's stool is examined only after penicillin has been administered if the patient has diarrhea. It is not required to evaluate the patient's lifestyle and diet as part of the preadministration assessment for the first dose. Renal and hepatic function tests may be performed at intervals during penicillin therapy, usually not before it.

15. A 26-year-old female patient with a skin infection has been prescribed 400 mg ampicillin to be taken orally. Which of the following instructions should the nurse include in the patient teaching plan?
    A) If a dosage is missed, increase the next dosage to meet the daily quota.
    B) Ampicillin will reduce the effectiveness of birth control pills.
    C) Take drug on an empty stomach, an hour before or 2 hours after meals.
    D) Avoid use of skin care products, like moisturizers, when on penicillin therapy.
    Ans: B
    Feedback:
    Ampicillin (also penicillin V) reduces the effectiveness of birth control pills. Increasing a dosage to compensate for a missed dosage should not be done. The patient should adhere to the prescribed regimen as strictly as possible. Ampicillin and penicillin V may be taken without regard to meals. The patient need not avoid use of skin care products when on penicillin therapy.

16. A patient undergoing penicillin therapy shows improvement and states that he is feeling better. Which of the following interventions is the nurse most likely to perform in such a situation?
    A) Instruct patient to increase dietary intake.
    B) Inform the primary health provider immediately.
    C) Record assessments on patient's chart.
    D) Inquire about any previous drug allergies.
    Ans: C
    Feedback:
    When the patient declares that he is feeling better and is also showing improved health, it should be recorded on the patient's chart. If the condition of the patient has improved, the patient will show an increased appetite, but there is no need to instruct the patient to increase dietary intake. The primary health provider need not be informed about the condition immediately unless the patient shows signs of deterioration or complications. The nurse should inquire about previous drug allergies before the start of therapy.

17. After taking penicillin as prescribed, a patient shows signs of diarrhea and informs the nurse that there is blood in his stools. Which of the following interventions should the nurse do next?
    A) Contact primary health provider immediately.
    B) Have the patient consume yogurt with his next meal.
    C) Decrease fiber content in diet.
    D) Continue with prescribed regimen.
    Ans: A
    Feedback:
    If diarrhea is suspected, the nurse should notify the primary health care provider immediately. The nurse should wait for the primary health care provider's instructions before continuing with the prescribed regimen. Yogurt or buttermilk may help prevent fungal superinfections, but they will not help alleviate the patient's condition at this stage. Changes in the diet are not recommended unless instructed by the primary health care provider.

18. A nurse is caring for a patient who is receiving penicillin. The nurse would assess for which of the following as a common adverse reaction?
    A) Inflammation of the tongue and mouth
    B) Impaired oral mucous membranes
    C) Severe hypotension
    D) Sudden loss of consciousness
    Ans: A
    Feedback:
    Some of the common adverse effects of penicillin are glossitis (inflammation of the tongue), stomatitis (inflammation of the mouth), and gastritis (inflammation of the stomach). Unless the adverse effects are severe, the drug may be continued as prescribed and the nurse would intervene to help the patient manage the common adverse reactions. Impaired oral mucous membranes would suggest a possible fungal superinfection in the oral cavity, whereas severe hypotension and sudden loss of consciousness are signs of anaphylactic shock; these are not common adverse effects of penicillin and require immediate medical attention.

19. A nurse is required to administer a parenteral form of penicillin to a patient. Which of the following interventions would be most appropriate for the nurse to do when preparing penicillin in parenteral form?
    A) Extract penicillin from vial and then reconstitute.
    B) Save excess antibiotic after reconstitution for later use.
    C) Use any available diluent for reconstitution.
    D) Shake the vial well to distribute the drug evenly.
    Ans: D
    Feedback:
    When preparing a parenteral form of penicillin, the nurse should shake the vial thoroughly before withdrawing the drug to ensure its even distribution in the solution. Penicillins in powder or crystalline form must be reconstituted before being withdrawn from the vial. Excess antibiotic after reconstitution should never be saved, as the drug loses its potency when stored. Reconstitution should be done only with the diluent prescribed on the manufacturer's label.

20. The nurse is obtaining a medication history of a 48-year-old patient with an ear infection who is to receive penicillin therapy. The patient reports taking a beta-adrenergic blocker for his hypertension. The nurse would identify that this patient is at increased risk for which of the following if penicillin is administered?
    A) Anaphylactic shock
    B) Higher blood pressure
    C) Excess bleeding
    D) Heart attack
    Ans: A
    Feedback:
    Combining penicillins with beta-adrenergic blocking drugs increases the risk of anaphylactic shock. Beta-adrenergic blocking drugs are used to control blood pressure and heart problems, but combining them with penicillins does not increase the risk of high blood pressure or heart attack. Risk of bleeding is maximized if penicillins are combined with anticoagulants.

21. A nursing instructor is preparing a class about cephalosporins for a group of nursing students. When describing progression from first-generation to fourth-generation cephalosporins, which of the following would the instructor include as the result? Select all that apply.
    A) An increase in the sensitivity of gram-negative microorganisms
    B) A decrease in the sensitivity of gram-negative microorganisms
    C) An increase in the sensitivity of gram-positive microorganisms
    D) A decrease in the sensitivity of gram-positive microorganisms
    E) An increase in the sensitivity of viral microorganisms
    Ans: A, D
    Feedback:
    In general, progression from first-generation to fourth-generation cephalosporins shows an increase in the sensitivity of gram-negative microorganisms and a decrease in the sensitivity of gram-positive microorganisms.

22. A 75-year-old patient with a history of renal impairment is admitted to the primary health care center with a UTI and has been prescribed a cephalosporin. Which of the following interventions is most important for the nurse to perform when caring for this patient?
    A) Monitoring fluid intake
    B) Monitoring blood creatinine levels
    C) Testing for occult blood
    D) Testing for increased glucose levels
    Ans: B
    Feedback:
    An elderly patient is more susceptible to the nephrotoxic effects of the cephalosporins. Since renal impairment is present, it is important for the nurse to closely monitor the patient's blood creatinine levels. The nurse should conduct a test for occult blood if blood and mucus occur in the stool and monitor the fluid intake if there is a decrease in urine output. The nurse does not need to monitor for increased glucose levels unless the patient has a history of diabetes.

23. The nurse administers cefuroxime to a patient at least 1 hour before meals, as prescribed. However, the patient experiences GI upset. Which of the following would be most appropriate for the nurse to do?
    A) Administer an antacid.
    B) Lower the dosage.
    C) Discontinue the drug.
    D) Administer the drug with food.
    Ans: D
    Feedback:
    If the patient experiences GI upset, the nurse can administer cefuroxime with food. A decrease in the dosage is suggested in a patient with renal impairment. A change in dosage, discontinuation of the drug, or use of an antacid is recommended only if prescribed by the physician.

24. A nurse needs to administer a cephalosporin to a patient. The patient informs the nurse that he is allergic to penicillin. Which action by the nurse would be most appropriate?
    A) Inform the primary health care provider.
    B) Obtain the patient's occupational history.
    C) Administer an antipyretic drug.
    D) Obtain specimens for kidney function tests.
    Ans: A
    Feedback:
    Patients with a history of an allergy to penicillin may also be allergic to cephalosporin, so the nurse needs to inform the primary health care provider before the first dose of the drug is given. An antipyretic drug is administered when there is an increase in the body temperature of a patient receiving cephalosporin. Liver and kidney function tests may be ordered by the primary health care provider, not the nurse. Occupational history should be obtained before administration of any drug, irrespective of the patient's allergies.

25. A nurse is preparing to administer a prescribed cephalosporin by injection. Which of the following would be most important for the nurse to keep in mind? Select all that apply.
    A) Thrombophlebitis can occur when cephalosporins are given IV.
    B) Phlebitis can occur when cephalosporins are given IM.
    C) Pain can occur when cephalosporins are given IM.
    D) Tenderness can occur when cephalosporins are given IM.
    E) Swelling can occur when cephalosporins are given IM.
    Ans: A, C, D, E
    Feedback:
    Administration route reactions include pain, tenderness, and inflammation at the injection site when cephalosporins are given IM, and phlebitis and thrombophlebitis along the vein may occur when cephalosporins are given IV.

26. A nurse suspects that a client who is receiving a cephalosporin and has ingested alcohol may be experiencing a disulfiram-like reaction based on assessment of which of the following? Select all that apply.
    A) Flushing
    B) Respiratory difficulty
    C) Hypertension
    D) Vomiting
    E) Sweating
    Ans: A, B, D, E
    Feedback:
    Flushing, throbbing in the head and neck, respiratory difficulty, vomiting, sweating, chest pain, and hypotension are symptoms a nurse might observe in a client having a disulfiram-like reaction with administration of a cephalosporin and alcohol.

27. After teaching a group of nursing students about the different generations of cephalosporins, the instructor determines that the teaching was successful when the students identify which of the following as an example of a first-generation cephalosporin? Select all that apply.
    A) Cefepime (Maxipime)
    B) Cefazolin (Ancef)
    C) Cefoxitin (Mefoxin)
    D) Cephalexin (Keflex)
    E) Cefaclor (Raniclor)
    Ans: B, D
    Feedback:
    Cefazolin and cephalexin are examples of first-generation cephalosporins. Cefoxitin and cefaclor are examples of second-generation cephalosporins. Cefepime is an example of a fourth-generation cephalosporin.

28. A nurse is conducting an in-service training program for a group of nurses about antibacterial drugs such as penicillins and cephalosporins. During the question-and-answer period, the audience asks for examples of conditions that can be treated by cephalosporins. Which of the following would the nurse include in the response?
    A) Hemolysis
    B) Urinary tract infections
    C) Nausea and diarrhea
    D) Jaundice
    Ans: B
    Feedback:
    Cephalosporins are used to treat respiratory infections, otitis media, urinary tract infections, and bone and joint infections, and prophylactically to treat infections that may result from a sexual assault. Cephalosporins are not used to treat hemolysis or jaundice. Nausea and diarrhea are some of the adverse reactions that can occur when a patient is on cephalosporin therapy.

29. The nurse is providing care to a patient who is receiving an aminoglycoside for a wound infection. The patient is also ordered to receive a cephalosporin. The nurse would carefully assess the patient for which of the following?
    A) Nausea
    B) Nephrotoxicity
    C) Increased bleeding
    D) Respiratory difficulty
    Ans: B
    Feedback:
    When cephalosporin is administered with aminoglycosides, it increases the risk for nephrotoxicity and should be closely monitored. Nausea is an adverse reaction of cephalosporins in patients with gastrointestinal tract infection. The risk of bleeding increases when cephalosporin is administered with oral anticoagulants. The risk for respiratory difficulty and a disulfiram-like reaction increases if alcohol is consumed within 72 hours after administration of certain cephalosporins.

30. While the nurse is obtaining a drug history from a patient, the patient tells the nurse that he is allergic to penicillins and has also experienced a rash when he took a cephalosporin. The nurse interprets this information as indicating which of the following?
    A) Hypersensitivity
    B) Cross-sensitivity
    C) Anaphylactoid reaction
    D) Anaphylaxis
    Ans: B
    Feedback:
    Once an individual is allergic to one penicillin, he or she is usually allergic to all of the penicillins. Those allergic to penicillin also have a higher incidence of allergy to the cephalosporins. Allergy to drugs in the same or related groups is called cross-sensitivity. Hypersensitivity is an allergic reaction to one substance. Anaphylactoid reaction is an unusual or exaggerated allergic reaction. Anaphylaxis or anaphylactic shock is a severe form of hypersensitivity that occurs immediately and can be fatal.

31. A nurse is teaching a patient about the common adverse reactions that can occur with his prescribed therapy with cephalosporins. The nurse determines that the teaching was successful when the patient identifies which of the following? Select all that apply.
    A) Drowsiness
    B) Headache
    C) Constipation
    D) Heartburn
    E) Vomiting
    Ans: B, D, E
    Feedback:
    Common adverse reactions to cephalosporins include nausea, vomiting, diarrhea, headache, dizziness, malaise, heartburn, and fever.

32. A patient receiving penicillin therapy tells the nurse that she feels like her mouth is irritated and that she has a sore throat. Inspection reveals a red, swollen tongue with ulcerations. The nurse suspects a fungal superinfection and identifies which nursing diagnosis as most appropriate for this patient?
    A) Impaired Comfort
    B) Impaired Oral Mucous Membranes
    C) Deficient Knowledge
    D) Inadequate Nutrition: Less Than Body Requirements
    Ans: B
    Feedback:
    The assessment suggests a fungal superinfection, which would lead to the nursing diagnosis of Impaired Oral Mucous Membranes. Although Impaired Comfort may be appropriate, Impaired Oral Mucous Membranes is more specific. There is no evidence of lack of knowledge or problems with nutrition. However, if the superinfection is not addressed, the patient may experience difficulty eating due to the irritation and discomfort.

33. A patient is ordered to receive vancomycin IV. When administering the drug, the nurse would infuse the drug over which time frame?
    A) 15 minutes
    B) 30 minutes
    C) 45 minutes
    D) 60 minutes
    Ans: D
    Feedback:
    Each IV dose of vancomycin is infused over 60 minutes. Too rapid an infusion may result in a sudden and profound fall in blood pressure and shock.

34. While administering vancomycin IV to a patient, the nurse suspects that the patient is developing red-man syndrome based on assessment of which of the following? Select all that apply.
    A) Headache
    B) Throbbing neck pain
    C) Chills
    D) Erythema of the neck and back
    E) Difficulty breathing
    Ans: B, C, D
    Feedback:
    Red-man syndrome is manifested by a decrease in blood pressure, occurrence of throbbing neck or back pain, fever, chills, paresthesias, and erythema of the neck and back. Headache is unrelated to this syndrome. Difficulty breathing might suggest an anaphylactic reaction.

35. After teaching a group of students about antibacterial drugs that disrupt the bacterial cell wall, the instructor determines that the teaching was successful when the students identify which of the following as an example of a carbapenem? Select all that apply.
    A) Vancomycin
    B) Imipenem-cilastatin
    C) Meropenem
    D) Aztreonam
    E) Ceftriaxone
    Ans: B, C
    Feedback:
    Carbapenems include imipenem-cilastatin and meropenem. Vancomycin and aztreonam are classified as miscellaneous drugs that disrupt the bacterial cell wall. Ceftriaxone is a third-generation cephalosporin.

1. After teaching a group of students about tetracyclines, the instructor determines that the teaching was successful when the students identify which of the following as a true statement? Select all that apply.
   A) Tetracyclines are broad-spectrum antibiotics.
   B) Tetracyclines may cause permanent discoloration of the teeth in children.
   C) Tetracyclines can be used when penicillins are contraindicated.
   D) Tetracyclines are contraindicated in children younger than 6 years.
   E) Tetracyclines are used to treat Rocky Mountain spotted fever.
   Ans: A, B, C, E
   Feedback:
   Tetracyclines are broad-spectrum antibiotics used to treat rickettsial disease, such as Rocky Mountain spotted fever, and when the use of penicillins is contraindicated. Tetracyclines are not given to children younger than 9 years of age unless absolutely necessary because these drugs may cause permanent yellow-gray-brown discoloration of the teeth.

2. The nurse is teaching a client about possible adverse reactions that can occur with tetracyclines. The nurse determines that the teaching was successful when the client identifies which of the following? Select all that apply.
   A) Photosensitivity
   B) Hypoglycemia
   C) Hypotension
   D) Diarrhea
   E) Stomatitis
   Ans: A, D, E
   Feedback:
   The nurse should advise the client that nausea, vomiting, diarrhea, epigastric distress, stomatitis, sore throat, skin rashes, and photosensitivity are adverse reactions that may occur with the administration of tetracyclines.

3. A nurse is reviewing the medical record of a client who is prescribed tetracycline. The nurse would be alert for an increased risk of toxicity if the client is taking which of the following? Select all that apply.
   A) Digoxin (Lanoxin)
   B) Phenytoin (Dilantin)
   C) Vancomycin (Vancocin)
   D) Warfarin (Coumadin)
   E) Carbamazepine (Tegretol)
   Ans: A, D
   Feedback:
   Tetracyclines may increase the risk of toxicity in clients who take digoxin for heart disease and increase the risk of bleeding in clients who take warfarin.

4. A group of nursing students are reviewing information about aminoglycosides. The students demonstrate understanding when they identify which of the following as an example? Select all that apply.
   A) Amikacin (Amikin)
   B) Amoxicillin (Amoxil)
   C) Vancomycin (Vancocin)
   D) Kanamycin (Kantrex)
   E) Azithromycin (Zithromax)
   Ans: A, D
   Feedback:
   The aminoglycosides include amikacin, gentamicin, kanamycin, neomycin, streptomycin, and tobramycin. Amoxicillin is an aminopenicillin. Vancomycin is a miscellaneous agent that disrupts the bacterial cell wall. Azithromycin is classified as a macrolide.

5. A nurse is preparing to administer an aminoglycoside to a client. The nurse would be alert for the development of which of the following toxicities? Select all that apply.
   A) Nephrotoxicity
   B) Cardiotoxicity
   C) Ototoxicity
   D) Hepatotoxicity
   E) Neurotoxicity
   Ans: A, C, E
   Feedback:
   More serious adverse reactions of aminoglycosides include nephrotoxicity, ototoxicity, and neurotoxicity. A nurse recognizing these can greatly reduce permanent damage to the client's hearing, kidneys, and nerves. Aminoglycosides are not associated with cardiotoxicity or hepatotoxicity.

6. A client is receiving gentamicin. Assessment of which of the following would lead the nurse to suspect that the client is developing nephrotoxicity? Select all that apply.
   A) Proteinuria
   B) Hematuria
   C) Decreased urine output
   D) Increased serum creatinine
   E) Decreased fluid intake
   Ans: A, B, C, D
   Feedback:
   Proteinuria, hematuria, decreased urine output, increased serum creatinine, and increased blood nitrogen urea (BUN) are suggestive of nephrotoxicity. Decreased fluid intake would support dehydration.

7. A nurse is reviewing the medical records of several patients who are to receive antibacterial drug therapy. The nurse understands that aminoglycosides would be contraindicated in clients with which of the following conditions? Select all that apply.
   A) Pre-existing hearing loss
   B) Pregnancy
   C) Parkinsonism
   D) Diabetes
   E) Hyperlipidemia
   Ans: A, B, C
   Feedback:
   The aminoglycosides are contraindicated in clients with pre-existing hearing loss, myasthenia gravis, and parkinsonism and during lactation and pregnancy.

8. A nursing instructor is preparing a teaching plan for a group of nursing students about macrolide antibacterial drugs. Which of the following would the instructor expect to include? Select all that apply.
   A) Macrolides are broad-spectrum antibiotics.
   B) Macrolides are contraindicated in clients with renal dysfunction.
   C) Macrolides may cause visual disturbances.
   D) Macrolides can be used in clients allergic to penicillins.
   E) Macrolides can be used to treat acne vulgaris.
   Ans: A, C, D, E
   Feedback:
   Macrolides are broad-spectrum antibiotics that can be used in clients with penicillin allergies and can be used to treat acne vulgaris. Macrolides can cause visual disturbances and are contraindicated in clients with pre-existing liver disease.

9. A group of nursing students are reviewing information about clindamycin (Cleocin). The students demonstrate understanding of this drug when they identify that it should be used with caution in clients with which of the following? Select all that apply.
   A) Seizure disorder
   B) GI disorders
   C) Myasthenia gravis
   D) Diabetes
   E) Hepatic impairment
   Ans: B, C, E
   Feedback:
   Clindamycin, a lincosamide, should be used cautiously in clients with a history of GI disorders, renal disease, liver impairment, or myasthenia gravis.

10. The nurse is completing an ongoing assessment of a client receiving erythromycin. The nurse would notify the primary health care provider immediately if assessment reveals which of the following? Select all that apply.
    A) Significant drop in blood pressure
    B) Increase in heart rate
    C) Decrease in temperature
    D) Increase in respiratory rate
    E) Sudden increase in temperature
    Ans: A, B, D, E
    Feedback:
    During ongoing assessment of a client receiving erythromycin, the nurse should notify the primary health care provider immediately if the client has a significant drop in blood pressure, increase in heart rate, increase in respiratory rate, or sudden increase in temperature.

11. A client has been receiving an aminoglycoside for several weeks and comes to the clinic complaining of ringing in his ears and some dizziness. The nurse suspects ototoxicity. When developing this client's plan of care, which nursing diagnosis would be the priority?
    A) Impaired Comfort
    B) Altered Thought Process
    C) Diarrhea
    D) Risk for Injury
    Ans: D
    Feedback:
    The development of ototoxicity would lead the nurse to identify a nursing diagnosis of Risk for Injury related to the effects of ototoxicity. Although the client's ringing in the ears could cause discomfort, the priority nursing diagnosis would be Risk for Injury. There is no evidence of impaired comfort, altered thought process or diarrhea.

12. A client is receiving iron therapy for anemia. The prescriber has ordered tetracycline as treatment for the client's infection. Which of the following would be most appropriate for the nurse to do?
    A) Give the drugs at the same time.
    B) Give the iron first, then follow with the tetracycline in 30 minutes.
    C) Separate administration times by 2 hours.
    D) Withhold the iron until the tetracycline therapy is completed.
    Ans: C
    Feedback:
    Iron therapy can interfere with the absorption of tetracycline. Therefore, the nurse should give the iron 2 hours before or after administering tetracycline. The two drugs should not be given at the same time. Withholding the iron would be inappropriate.

13. A nurse is preparing to administer lincomycin via IM injection. Which of the following would be most appropriate for the nurse to do? Select all that apply.
    A) Inspect previous injection sites.
    B) Rotate the injection site.
    C) Use the abdomen for intramuscular injections.
    D) Note the site used for injection in the client's chart.
    E) Notify the physician of any persistent localized reactions.
    Ans: A, B, D, E
    Feedback:
    When giving lincomycin intramuscularly, the nurse inspects previous injection sites for signs of pain or tenderness, redness, and swelling; reports the persistence of a localized reaction to the physician; rotates the injection sites; and records the site used for injection in the client's chart.

14. A patient is prescribed demeclocycline. The nurse would teach the patient to be alert for signs of which of the following?
    A) Photosensitivity
    B) Abdominal pain
    C) Cramping
    D) Blood dyscrasias
    Ans: A
    Feedback:
    Demeclocycline causes photosensitivity reactions. Abdominal pain and cramping are adverse reactions of macrolides. Blood dyscrasias are an adverse reaction of lincosamides.

15. A patient has been prescribed a tetracycline drug for Rocky Mountain spotted fever. The patient also takes antacids. Which of the following effects is likely to occur due to an interaction between the two drugs?
    A) Increased risk of bleeding
    B) Increased action of neuromuscular blocking drugs
    C) Increased profound respiratory depression
    D) Decreased absorption of tetracycline
    Ans: D
    Feedback:
    Interaction of antacids with a tetracycline drug causes decreased absorption of tetracycline. Increased action of neuromuscular blocking drugs and increased profound respiratory depression are the result of interaction between neuromuscular blocking drugs and tetracyclines. Increased risk of bleeding is a result of interaction between anticoagulants and tetracyclines.

16. After reviewing information about lincosamide therapy, a group of nursing students demonstrate understanding of the information when they identify which of the following as a contraindication?
    A) Children younger than 9 years
    B) Patients with pre-existing liver disease
    C) Patients taking cisapride
    D) Patients with myasthenia gravis
    Ans: C
    Feedback:
    Lincosamide is contraindicated in patients taking cisapride. Tetracyclines are contraindicated in children younger than 9 years of age and pregnant women. Macrolides are contraindicated in patients with pre-existing liver disease and patients with myasthenia gravis.

17. A middle-aged patient has been prescribed tetracycline as part of his treatment of *H. pylori*. The patient has a history of heart disease for which he is receiving digoxin. Given his history and current medications, the patient is at risk for which of the following conditions?
    A) Respiratory depression
    B) Decreased effectiveness of tetracycline
    C) Prolonged clotting times
    D) Risk of digoxin toxicity
    Ans: D
    Feedback:
    When digoxin interacts with tetracyclines, the patient is at risk for digoxin toxicity. Respiratory depression is an effect observed when neuromuscular blocking drugs interact with lincosamides. A decrease in the effectiveness of tetracycline is seen when the drug is taken with antacids, dairy products, or iron. An increased risk for bleeding with prolonged clotting times is noted when tetracycline is given with anticoagulants.

18. A patient has been prescribed oral tetracycline for the treatment of acne. Which of the following must the nurse include in the patient teaching plan?
    A) Take the drug on an empty stomach.
    B) Take the drug along with a meal.
    C) Take the drug along with milk or fruit juice.
    D) Take the drug immediately after meals.
    Ans: A
    Feedback:
    Oral preparations of tetracycline should be administered on an empty stomach with a full glass of water to maximize absorption. Tetracycline is not absorbed effectively if taken with food, with dairy products, or immediately after meals.

19. A patient is receiving telithromycin. Based on the nurse's understanding of potential adverse reactions, the nurse would identify which nursing diagnosis as a priority?
    A) Ineffective Renal Tissue Perfusion
    B) Risk for Injury
    C) Diarrhea
    D) Risk for Impaired Skin Integrity
    Ans: B
    Feedback:
    Telithromycin can cause visual disturbances such as difficulty focusing and accommodating to light. Therefore, the priority nursing diagnosis would be Risk for Injury related to these visual disturbances. Aminoglycosides can cause nephrotoxicity, leading to a nursing diagnosis of Ineffective Renal Perfusion. Although diarrhea and skin rashes can occur, these would not be a priority at this time.

20. A client is receiving quinupristin/dalfopristin via a peripheral intravenous infusion. After the drug is administered, the nurse would flush the intravenous line with which of the following?
    A) Normal saline
    B) 0.45% sodium chloride
    C) Dextrose 5% and water
    D) Heparin
    Ans: C
    Feedback:
    Quinupristin/dalfopristin is irritating to the vein. After peripheral infusion, the vein should be flushed with 5% dextrose in water (D5W), because the drug is incompatible with saline or heparin flush solutions.

21. A patient is receiving linezolid. The patient is fond of eating chocolates and coffee, both of which contain tyramine. The nurse would instruct the patient that he is at risk for which of the following should he consume foods containing tyramine while taking linezolid?
    A) Severe hypertension
    B) Drowsiness
    C) Nervousness
    D) Nausea
    Ans: A
    Feedback:
    The nurse should inform the patient that if tyramine found in chocolates and coffee interacts with linezolid, the patient will develop an increased risk for severe hypertension. Tyramine-containing foods interacting with linezolid do not cause drowsiness, nervousness, or nausea.

22. A client who is receiving statin therapy as treatment for elevated lipid levels is also prescribed daptomycin. The nurse would assess which of the following laboratory test results for changes?
    A) Creatine phosphokinase levels
    B) Blood glucose levels
    C) White blood cell count
    D) International normalized ratio
    Ans: A
    Feedback:
    Myopathy with elevated creatine phosphokinase (CPK) levels may occur if daptomycin is administered with statin drugs (cholesterol reduction). Therefore, the nurse would assess CPK levels. The combination of statin therapy and daptomycin has no effect on blood glucose levels, white blood count, or international normalized ratio (INR).

23. After teaching a group of nursing students about indications for linezolid (Zyvox), the instructor determines a need for additional teaching when the students identify which of the following as an indication?
    A) Community-acquired pneumonia (CAP)
    B) Vancomycin-resistant *Enterococcus faecium* (VREF)
    C) Methicillin-resistant *Staphylococcus aureus* (MRSA)
    D) Acute otitis media
    Ans: D
    Feedback:
    Linezolid is used in the treatment of vancomycin-resistant *Enterococcus faecium* (VREF), health care– and community-acquired pneumonias, and skin and skin structure infections, including those caused by methicillin-resistant *Staphylococcus aureus* (MRSA). It is not used to treat otitis media.

24. A nurse is reading a journal article about spectinomycin. Which of the following would the nurse expect to find as being discussed about this drug? Select all that apply.
    A) Spectinomycin is used to treat chlamydia infections.
    B) Spectinomycin is used to treat gonorrhea infections.
    C) Spectinomycin is chemically unrelated to aminoglycosides.
    D) Spectinomycin can be used in clients with penicillin allergy.
    E) Spectinomycin has no known significant food or drug interactions.
    Ans: B, D, E
    Feedback:
    Spectinomycin is used to treat gonorrhea infections in clients who are allergic to penicillins, cephalosporins, or probenecid (Benemid). Spectinomycin is chemically related to but different from aminoglycosides. No significant drug or food interactions for spectinomycin are known.

25. A patient is being discharged with a prescription for linezolid. After teaching the patient about this drug, the nurse determines that additional teaching is needed when the patient identifies that he can consume which of the following without any risks? Select all that apply.
    A) Alcohol
    B) Prunes
    C) Aged cheese
    D) Pepperoni
    E) Broccoli
    Ans: A, C, D
    Feedback:
    When linezolid is taken with foods containing tyramine, such as aged cheese and meats, yogurt, chocolate, caffeinated beverages, and alcohol, the risk for severe hypertension increases. Prunes and broccoli pose no risk to the patient.

26. A nursing instructor is preparing a class on various antibacterial drugs interfering with protein synthesis, with the discussion focusing on quinupristin/dalfopristin. Which of the following medications would the instructor include as interacting with quinupristin/dalfopristin, thus increasing the risk for toxicity? Select all that apply.
    A) Lorazepam (Ativan)
    B) Quinapril (Accupril)
    C) Ritonavir (Norvir)
    D) Atorvastatin (Lipitor)
    E) Tacrolimus (Prograf)
    Ans: A, C, D
    Feedback:
    When quinupristin/dalfopristin is prescribed, it may interact with the following drugs, increasing serum levels and thus the risk for toxicity: antiretrovirals, antineoplastic and immunosuppressant agents, calcium channel blockers, benzodiazepines, and cisapride.

27. A patient is ordered to receive neomycin as part of the treatment plan for hepatic coma. Which of the following would be most important for the nurse to assess before administering this drug? Select all that apply.
    A) Ability to swallow
    B) Level of consciousness
    C) Baseline vital signs
    D) Pulmonary function
    E) Culture and sensitivity results
    Ans: A, B
    Feedback:
    During the early stages of hepatic coma, various changes in the level of consciousness may be seen. At times, the patient may appear lethargic and respond poorly to commands. Because of these changes in the level of consciousness, the patient may have difficulty swallowing, and a danger of aspiration is present. If the patient appears to have difficulty taking an oral drug, the nurse should withhold the drug and contact the primary health care provider. Baseline vital signs are important but are not the priority when the patient has hepatic coma. The drug does not affect the patient's respiratory function. There is no infection; therefore, there is no need for culture and sensitivity testing.

28. A patient is scheduled for abdominal surgery and is ordered to receive kanamycin as part of the bowel preparation. The patient asks the nurse why he is getting this drug. Which response by the nurse would be most appropriate?
    A) "You have an infection now and will probably have one after surgery, so this will help control it."
    B) "We need to lower the levels of ammonia in your bloodstream to prevent problems."
    C) "The drug helps eliminate bacteria so that your GI tract is as clean as possible for surgery."
    D) "This is to help prevent you from developing any blood clots during and after the surgery."
    Ans: C
    Feedback:
    Kanamycin and neomycin are used before surgery to reduce intestinal bacteria. It is thought that this reduces the possibility of abdominal infection that may occur after surgery on the bowel. By destroying bacteria in the gut and washing it out with laxatives or enemas, the surgical area becomes as clean as possible before the operation. The drug is not used to control an infection preoperatively. It does help to reduce blood ammonia levels with hepatic coma, but this is not the reason for its use with this patient. The drug has no effect on preventing blood clots postoperatively.

29. A nurse suspects that a patient receiving an aminoglycoside is developing neurotoxicity based on assessment of which of the following? Select all that apply.
    A) Paresthesias
    B) Tingling around the mouth
    C) Ringing in the ears
    D) Vertigo
    E) Muscle twitching
    Ans: A, B, E
    Feedback:
    Signs and symptoms of neurotoxicity include numbness, skin tingling, circumoral (around the mouth) paresthesia, peripheral paresthesia, tremors, muscle twitching, convulsions, muscle weakness, and neuromuscular blockade (acute muscular paralysis and apnea). Ringing in the ears and vertigo would suggest ototoxicity.

30. A patient is to receive tetracycline therapy at home. After teaching the patient about foods to avoid when taking the drug, the nurse determines that the teaching was successful when the patient states he will avoid which of the following? Select all that apply.
    A) Yogurt
    B) Cheese
    C) Calcium-fortified cereals
    D) Citrus fruits
    E) Green leafy vegetables
    Ans: A, B, C
    Feedback:
    The patient should avoid dairy products including yogurt, cheese, milk, cream, ice cream, ice milk, or frozen custard before or after taking tetracycline. Citrus fruits and green leafy vegetables should not be avoided.

1. After teaching a group of nursing students about fluoroquinolones, the instructor determines that the teaching was successful when they identify which of the following as an example? Select all that apply.
   A) Levofloxacin (Levaquin)
   B) Amoxicillin (Amoxil)
   C) Cephalexin (Keflex)
   D) Spectinomycin (Trobicin)
   E) Ciprofloxacin (Cipro)
   Ans: A, E
   Feedback:
   The fluoroquinolone drugs include ciprofloxacin (Cipro), gemifloxacin (Factive), levofloxacin (Levaquin), moxifloxacin (Avelox), norfloxacin (Noroxin), and ofloxacin (Floxin). Amoxicillin is an aminopenicillin. Spectinomycin is chemically related to but different from aminoglycosides.

2. A nursing student is engaged in researching information about fluoroquinolones. When reviewing the information, the student would most likely find that this class of drugs is effective in treating which type of infection? Select all that apply.
   A) Viral infections
   B) Gram-positive infections
   C) Fungal infections
   D) Gram-negative infections
   E) Parasitic infections
   Ans: B, D
   Feedback:
   Fluoroquinolones are effective in treating infections caused by gram-positive and gram-negative microorganisms.

3. The nurse is reviewing the medical records of several clients with infection. The nurse would anticipate the prescriber ordering a fluoroquinolone for a client with which of the following? Select all that apply.
   A) Urinary tract infections
   B) Sexually transmitted infections
   C) Upper respiratory tract infections
   D) Bone and joint infections
   E) Skin infections
   Ans: A, B, D, E
   Feedback:
   Fluoroquinolones are primarily used to treat lower respiratory tract infections, bone and joint infections, urinary tract infections, skin infections, sexually transmitted infections, and some infections of the eye and ear.

4. A client is being given a prescription for ciprofloxacin (Cipro) to treat a urinary tract infection. The nurse should teach the client about which of the following common adverse reactions? Select all that apply.
   A) Constipation
   B) Nausea
   C) Headache
   D) Dizziness
   E) Dry mouth
   Ans: B, C, D
   Feedback:
   Common adverse reactions to fluoroquinolones include nausea, vomiting, diarrhea, headache, abdominal pain or discomfort, dizziness, and photosensitivity. Constipation and dry mouth are not associated with fluoroquinolone therapy.

5. Fluoroquinolones should be used with caution in which of the following clients? Select all that apply.
   A) Clients with diabetes
   B) Clients with hypertension
   C) Clients receiving dialysis
   D) Clients with chronic obstructive pulmonary disorder (COPD)
   E) Clients with epilepsy
   Ans: A, C, E
   Feedback:
   Fluoroquinolones should be used with caution in clients with diabetes, renal impairment, or history of seizures; older clients; and clients on dialysis.

6. Prior to administration of moxifloxacin (Avelox), a nurse obtains a medication history. Use of which drug would alert the nurse to contact the prescriber because concomitant use would lead to an increased risk for a severe cardiac arrhythmia? Select all that apply.
   A) Amiodarone (Pacerone)
   B) Glyburide (DiaBeta)
   C) Sotalol (Betapace)
   D) Procainamide (Procanbid)
   E) Ibuprofen (Motrin)
   Ans: A, C, D
   Feedback:
   There is a risk of severe cardiac arrhythmias when moxifloxacin (Avelox) is administered with drugs that increase the QT interval, such as quinidine, procainamide, amiodarone, or sotalol.

7. Which of the following information should the nurse obtain during the preadministration assessment of a client prescribed a fluoroquinolone? Select all that apply.
   A) Blood glucose levels
   B) Allergy history
   C) Signs and symptoms of infection
   D) Blood pressure
   E) Temperature
   Ans: B, C, D, E
   Feedback:
   Before administering a fluoroquinolone, the nurse identifies and records the signs and symptoms of the infections, takes a thorough allergy history, takes and records vital signs, and, if ordered, obtains cultures.

8. During ongoing assessment of clients taking fluoroquinolone, which of the following adverse reactions should be reported to the physician immediately? Select all that apply.
   A) Respiratory difficulty
   B) Drowsiness
   C) Severe diarrhea
   D) Hypersensitivity reaction
   E) A significant drop in blood pressure
   Ans: A, C, D, E
   Feedback:
   It is important for the nurse to report any adverse reaction to the physician prior to administering the next dose, but the nurse should notify the physician immediately if respiratory difficulty, hypersensitivity reaction, severe diarrhea, or a decided drop in blood pressure occurs.

9. Which of the following represent nursing diagnoses that may be made during administration of a fluoroquinolone? Select all that apply.
   A) Acute Pain
   B) Diarrhea
   C) Imbalanced Nutrition
   D) Anxiety
   E) Risk for Impaired Skin Integrity
   Ans: A, B, D, E
   Feedback:
   Drug administration–specific nursing diagnoses that may be made during treatment with fluoroquinolones and miscellaneous anti-infective drugs include Acute Pain, Anxiety, Risk for Impaired Comfort, Risk for Impaired Skin Integrity, Diarrhea, Risk for Impaired Urinary Elimination, and Risk for Disturbed Sensory Perception.

10. A nurse is preparing to administer ciprofloxacin as ordered. Which test would the nurse ensure is completed before administering the first dose to the patient?
    A) Urinalysis
    B) Culture tests
    C) Ulcer tests
    D) Stool tests
    Ans: B
    Feedback:
    The nurse should check whether culture tests are conducted before the first dose of drug is administered to the client. Ulcer tests and stool tests are not required to be conducted before administering the first dose of an anti-infective drug to the client. The nurse has to ensure that urinalysis is conducted before the administration of the drug but not specifically before the first dose of the anti-infective drug.

11. A nurse is caring for a client who is receiving a fluoroquinolone as an intravenous infusion. The nurse would check the infusion rate at which frequency?
    A) Every 15 minutes
    B) Every 30 minutes
    C) Every 45 minutes
    D) Every 60 minutes
    Ans: A
    Feedback:
    When administering a fluoroquinolone IV, the nurse should check the infusion rate every 15 minutes and adjust it if necessary.

12. A patient develops a superinfection due to fluoroquinolone therapy. The patient asks the nurse why this happened. Which response by the nurse would be most appropriate?
    A) "Your infection was really severe, so the drug wasn't as effective as it could have been."
    B) "This happens when your original infection begins to clear."
    C) "The drug disrupts your normal bacteria so it allows other organisms to grow."
    D) "We really don't know why this happens; it just does sometimes."
    Ans: C
    Feedback:
    Antibiotics can disrupt the normal flora (nonpathogenic bacteria in the bowel), causing a secondary infection or superinfection. This new infection is "superimposed" on the original infection. The destruction of large numbers of nonpathogenic bacteria (normal flora) by the antibiotic alters the chemical environment. This allows uncontrolled growth of bacteria or fungal microorganisms that are not affected by the antibiotic being administered. It has nothing to do with the drug's effectiveness or the original infection being cleared.

13. A client develops pseudomembranous colitis secondary to fluoroquinolone therapy. The nurse understands that this is the result of which organism?
    A) *E. coli*
    B) *C. difficile*
    C) *Staphylococcus*
    D) Group B hemolytic *Streptococcus*
    Ans: B
    Feedback:
    Pseudomembranous colitis is one type of a bacterial superinfection. This potentially life-threatening problem develops because of an overgrowth of the microorganism *Clostridium difficile* (*C. diff*) in the bowel.

14. The nurse is reviewing the medical records of several patients who are receiving fluoroquinolone therapy. Each of the patients is also receiving corticosteroid therapy. Which patient would the nurse identify as being at greatest risk for tendonitis?
    A) 34-year-old female
    B) 22-year-old male
    C) 45-year-old female
    D) 72-year-old male
    Ans: D
    Feedback:
    Tendonitis and tendon rupture risk increase when taking a fluoroquinolone. Although this can happen at any age, those older than 60 years who also take corticosteroids are at greater risk.

15. A client is receiving a fluoroquinolone and is also taking ibuprofen for pain relief. The nurse would be alert for which of the following?
    A) Increased risk for bleeding
    B) Decreased effectiveness of the fluoroquinolone
    C) Increased risk for seizures
    D) Delayed elimination of the fluoroquinolone
    Ans: C
    Feedback:
    When a nonsteroidal anti-inflammatory drug such as ibuprofen is used in conjunction with a fluoroquinolone, the patient has an increased risk for seizures. An increased risk of bleeding would occur with oral anticoagulants in conjunction with fluoroquinolone therapy. Decreased effectiveness of the fluoroquinolone would occur if it was given with antacids, iron salts, or zinc because of decreased absorption of the antibiotic. Cimetidine interferes with the elimination of the fluoroquinolone, leading to prolonged presence of the drug in the bloodstream.

16. A group of nursing students are reviewing information about fluoroquinolones. The students demonstrate understanding of the information when they identify that an empty stomach is essential for the administration of which drug?
    A) Ciprofloxacin
    B) Moxifloxacin
    C) Levofloxacin
    D) Norfloxacin
    Ans: D
    Feedback:
    Although any of the fluoroquinolones can be given on an empty stomach, it is essential that norfloxacin is given in such a manner.

17. A client receiving levofloxacin comes to the clinic for a follow-up visit. The client tells the nurse, "I used sunscreen but it didn't help." Which response by the nurse would be most helpful?
    A) "Be sure to wear long sleeves and a wide-brimmed hat in addition to using sunscreen."
    B) "I guess you didn't apply enough sunscreen to be effective."
    C) "Maybe we need to change your medication because this is unusual."
    D) "The sunscreen should have worked. Are you sure you actually did use it?"
    Ans: A
    Feedback:
    The fluoroquinolone drugs cause severe photosensitivity reactions. Clients may experience "sunburn" reactions even when they use sunscreen or sunblock products. Caution clients to wear cover-up clothing with long sleeves and wide-brimmed hats when outside in addition to sunblock preparations. Remind them that sunscreen needs to be applied repeatedly throughout the day or when going into water. Clients should be aware that glare during hazy or cloudy days can cause skin reactions as readily as direct sunlight on a clear day. Telling the client that he didn't apply enough or questioning the client's actual use of sunscreen is inappropriate. There is no need to change the medication because the client's report is not unusual.

18. A client is receiving a fluoroquinolone as an extended-release formulation. Which of the following would be most important to include in the client's teaching plan?
    A) To chew, crush, or break the medication
    B) To swallow the medication whole
    C) To limit the daily fluid intake
    D) To take the drug with an antacid
    Ans: B
    Feedback:
    When an extended-release formulation is prescribed, the client needs instructions to swallow the medication whole and not to chew, crush, or break the medication. Otherwise, the amount of drug released would be too great for the body all at once. Clients should be encouraged to increase their fluid intake and to separate administration by 1 to 2 hours.

19. A nurse is reviewing the signs and symptoms of a fungal superinfection with a client. The client demonstrates understanding of the information when he identifies which of the following as suggesting a fungal superinfection? Select all that apply.
    A) Bloody diarrhea
    B) Abdominal cramping
    C) Creamy white patches on the throat
    D) Intense vaginal itching
    E) Excoriation of the anogenital skin folds
    Ans: C, D, E
    Feedback:
    A fungal superinfection commonly occurs in the mouth, vagina, and anogenital areas, commonly manifested by creamy, white, lace-like patches on the tongue, mouth, or throat; white or yellow vaginal discharge; anal or vaginal itching or redness; and inflammation or excoriation of the mouth or the skin folds of the anogenital area. Bacterial superinfections commonly occur in the bowel, manifested by fever, diarrhea with visible blood or mucus, and abdominal cramping.

20. A client develops a severe case of pseudomembranous colitis secondary to fluoroquinolone therapy. The fluoroquinolone is stopped immediately and the client receives intravenous fluids and protein supplementation. The physician prescribes medication as part of the treatment plan. The nurse would expect to administer which of the following?
    A) Fidaxomicin
    B) Metronidazole
    C) Norfloxacin
    D) Moxifloxacin
    Ans: A
    Feedback:
    Moderate to severe cases of pseudomembranous colitis may require treatment with intravenous (IV) fluids and electrolytes, protein supplementation, and treatment with drugs such as fidaxomicin (Dificid) to eliminate the microorganism. Metronidazole is used to treat infections involving anaerobic organisms. Norfloxacin and moxifloxacin are fluoroquinolones and would not be used.

1. After teaching a group of nursing students about antitubercular therapy, the instructor determines that the teaching was successful when the students identify which of the following as a primary drug to treat tuberculosis? Select all that apply.
   A) Levofloxacin (Levaquin)
   B) Ethambutol (Myambutol)
   C) Isoniazid (Nydrazid)
   D) Rifampin (Rifadin)
   E) Ciprofloxacin (Cipro)
   Ans: B, C, D
   Feedback:
   Ethambutol, isoniazid, pyrazinamide, and rifampin are considered primary drugs in the treatment of TB. Levofloxacin and ciprofloxacin are considered secondary drugs.

2. A nursing student is reviewing information about tuberculosis therapy. The student demonstrates understanding of the information when identifying which of the following as true about the initial phase of tuberculosis therapy? Select all that apply.
   A) Drugs are used to kill the rapidly multiplying *M. tuberculosis*.
   B) Drugs are used to prevent drug resistance.
   C) The initial phase lasts approximately 6 to 9 months.
   D) The initial phase lasts approximately 2 months.
   E) The initial phase lasts approximately 4 months.
   Ans: A, B, D
   Feedback:
   During the initial phase, which lasts approximately 2 months, drugs are used to kill the rapidly multiplying *M. tuberculosis* and to prevent drug resistance. The continuing phase lasts approximately 4 months and the entire treatment spans 6 to 9 months.

3. A client is in the initial treatment phase for tuberculosis. Which of the following antitubercular drugs would the nurse expect the client to receive during this phase? Select all that apply.
   A) Isoniazid
   B) Rifampin
   C) Ciprofloxacin
   D) Pyrazinamide
   E) Ethambutol
   Ans: A, B, D, E
   Feedback:
   The initial phase involves using the following drugs: isoniazid, rifampin, and pyrazinamide, along with ethambutol.

4. A client is entering the continuation phase of treatment for tuberculosis. Which of the following would the nurse expect the client to receive? Select all that apply.
   A) Isoniazid
   B) Rifampin
   C) Ciprofloxacin
   D) Pyrazinamide
   E) Ethambutol
   Ans: A, B
   Feedback:
   The continuation phase includes only the drugs isoniazid and rifampin.

5. Tuberculosis responds well to long-term treatment with a combination of three or more antitubercular drugs. Which of the following is true regarding the duration of treatment for clients with tuberculosis? Select all that apply.
   A) The initial treatment phase should last for a minimum of 2 months.
   B) The initial treatment phase should last for a maximum of 2 months.
   C) The continuation treatment phase should last for 4 to 7 months.
   D) The continuation treatment phase should last for 6 to 12 months.
   E) Prophylactic treatment should be given for 6 to 9 months.
   Ans: A, C, E
   Feedback:
   The Centers for Disease Control and Prevention recommends that treatment begin as soon as possible after diagnosis of TB and include the following: initial treatment phase lasting for a minimum of 2 months, continuation treatment phase lasting for 4 to 7 months, and prophylactic treatment given to family members of the infected individual for 6 to 7 months.

6. Which of the following circumstances would warrant a continuation treatment phase of 7 months? Select all that apply.
   A) Noninclusion of rifampin in the initial treatment phase
   B) Noninclusion of pyrazinamide in the initial treatment phase
   C) HIV-positive clients
   D) Cavitary disease after completion of initial treatment
   E) Positive sputum culture after completion of initial treatment
   Ans: B, E
   Feedback:
   Noninclusion of pyrazinamide in the initial treatment phase, positive sputum culture after completion of initial treatment, and positive sputum culture after initial treatment in a client with previously diagnosed HIV infections would warrant a continuation of the treatment phase.

7. A client with tuberculosis has failed treatment and requires retreatment. Which of the following drugs would the nurse anticipate being used? Select all that apply.
   A) Ethionamide (Trecator)
   B) Rifampin (Rifadin)
   C) Aminosalicylic acid (Paser)
   D) Cycloserine (Seromycin)
   E) Capreomycin (Capastat)
   Ans: A, C, D, E
   Feedback:
   Retreatment drug regimens most often consist of the secondary drugs ethionamide (Trecator), aminosalicylic acid (Paser), cycloserine (Seromycin), and capreomycin (Capastat). Ofloxacin (Floxin) and ciprofloxacin (Cipro) may also be used in retreatment.

8. A nurse would suspect tuberculosis caused by drug-resistant organisms in which of the following clients? Select all that apply.
   A) Clients who are HIV positive
   B) Clients who have no response to therapy
   C) Clients who have been treated in the past
   D) Clients who have asthma
   E) Clients who smoke
   Ans: B, C
   Feedback:
   Tuberculosis caused by drug-resistant organisms should be considered in clients who have no response to therapy and in patients who have been treated in the past.

9. Which of the following is true of secondary drugs to treat tuberculosis? Select all that apply.
   A) Secondary drugs are less effective than primary drugs.
   B) Secondary drugs are more toxic than primary drugs.
   C) Secondary drugs are used to treat extrapulmonary TB.
   D) Secondary drugs are used to treat drug-resistant TB.
   E) Secondary drugs are used as the first line to treat HIV patients with TB.
   Ans: A, B, C, D
   Feedback:
   Secondary drugs are used to treat extrapulmonary and drug-resistant TB. Secondary drugs are less effective and more toxic than primary drugs used to treat TB.

10. A nurse is preparing to administer ethambutol (Myambutol) to several clients. The nurse would expect to administer the drug cautiously to which clients? Select all that apply.
    A) Clients with hepatic impairment
    B) Clients with hypertension
    C) Clients with cataracts
    D) Clients with diabetic neuropathy
    E) Clients with renal impairment
    Ans: A, C, E
    Feedback:
    Ethambutol (Myambutol) should be used cautiously in clients with hepatic or renal impairment and in clients with diabetic retinopathy or cataracts.

11. When providing care to a client taking isoniazid (INH), the nurse would monitor the client carefully for which of the following that indicate toxicity? Select all that apply.
    A) Peripheral neuropathy
    B) Visual changes
    C) Nausea
    D) Vomiting
    E) Hepatitis
    Ans: A, E
    Feedback:
    Signs of isoniazid (INH) toxicity include peripheral neuropathy and hepatitis.

12. A client should be educated to limit consumption of which of the following foods to prevent an exaggerated sympathetic-type response when taking isoniazid (INH) for the treatment of tuberculosis? Select all that apply.
    A) Alcohol
    B) Grapes
    C) Bananas
    D) Meats
    E) Broccoli
    Ans: A, C, D
    Feedback:
    When isoniazid is taken with foods containing tyramine, such as aged cheese and meats, bananas, yeast products, and alcohol, an exaggerated sympathetic-type response can occur.

13. A nurse would expect to administer pyrazinamide cautiously to which clients? Select all that apply.
    A) Clients with diabetes
    B) Clients with hepatic impairment
    C) Clients with renal impairment
    D) Clients with hypertension
    E) Clients with HIV infection
    Ans: A, B, C, E
    Feedback:
    Pyrazinamide should be used cautiously in clients during pregnancy and lactation and in clients with hepatic or renal impairment, HIV infection, or diabetes.

14. A nurse is preparing to teach a client about common adverse reactions associated with rifampin (Rifadin). Which of the following would the nurse include? Select all that apply.
    A) Discoloration of body fluids
    B) Vertigo
    C) Joint pain
    D) Nausea
    E) Rash
    Ans: A, B, D, E
    Feedback:
    Common adverse reactions of rifampin include nausea, vomiting, epigastric distress, heartburn, fatigue, vertigo, rash, reddish-orange discoloration of body fluids, hematologic changes, and renal insufficiency.

15. When completing the preadministration assessment for any antitubercular drug, which of the following would the nurse include? Select all that apply.
    A) Culture and sensitivity testing
    B) Complete blood count
    C) Family and contacts history
    D) Radiographic studies
    E) Medication history
    Ans: A, B, C, D, E
    Feedback:
    Preadministration assessment for any antitubercular drug should include culture and sensitivity testing, complete blood count, radiographic studies, medication history, and a family and contacts history for those with active TB.

16. A nurse is developing a plan of care for a client receiving an antitubercular drug. Which nursing diagnosis would the nurse most likely include directly related to drug therapy? Select all that apply.
    A) Acute Pain
    B) Risk of Skin Integrity
    C) Imbalanced Nutrition
    D) Body Image Disturbances
    E) Risk for Ineffective Self Health Management
    Ans: A, C, E
    Feedback:
    Drug administration–specific nursing diagnoses that may be made during treatment with antitubercular drugs include Acute Pain related to frequent injections, Imbalanced Nutrition due to gastric upset, and Risk for Ineffective Self Health Management related to indifference, lack of knowledge, and long-term treatment.

17. When developing the plan of care for a client receiving antitubercular therapy, the nurse would identify which of the following as a goal? Select all that apply.
    A) Client will state adverse reactions to report.
    B) Client will maintain adequate nutritional status.
    C) Client and family demonstrate an understanding of the drug regimen.
    D) Client manages the therapeutic regimen effectively.
    E) Client exhibits a negative sputum culture.
    Ans: A, B, C, D, E
    Feedback:
    The goals for a client taking antitubercular drugs can include identification and treatment of adverse reactions including ability to report adverse reaction, maintenance of adequate nutritional status, demonstration of understanding of the drug regimen by client and family, effective management of the therapeutic regimen by the client, and achievement of therapeutic response.

18. The nurse is preparing a teaching plan to foster client adherence to the tubercular drug treatment programs. Which of the following would the nurse include? Select all that apply.
    A) Reinforcing that short-term treatment is ineffective
    B) Reviewing the prescribed drug, doses, and frequency of administration
    C) Using a calendar to designate the days the drug is to be taken for alternate-dosage schedule
    D) Arranging for direct observation therapy with the client and family
    E) Instructing the client about possible adverse reactions and the need to notify prescriber should any occur

    Ans: A, B, D, E

    Feedback:

    Teaching points that can be used by the nurse to increase the likelihood for effective therapeutic outcomes include reinforcing that short-term treatment is ineffective; reviewing the drug therapy regimen, including the prescribed drug, doses, and frequency of administration; arranging for direct observation therapy with the client and family; and instructing the client about possible adverse reactions and the need to notify the prescriber should any occur.

19. An HIV-positive patient is in a continuing phase of TB. The patient has completed the initial phase of the treatment program. In the continuing phase, the patient has shown no positive sputum results for 6 months. The nurse knows that under what circumstances does the treatment in the second phase last for 4 months or more?
    A) Positive sputum culture after the completion of initial treatment
    B) Inclusion of pyrazinamide in the initial treatment
    C) Following the same eating habits in the continuing phase
    D) Nausea or vomiting after completing the initial treatment

    Ans: A

    Feedback:

    Positive sputum culture after the completion of initial treatment leads to treatment in the second phase lasting for 4 to 7 months. Following the same eating habits (diet) will not cause treatment in the second phase to last for 4 months or more, nor will nausea or vomiting occurring after completing the initial treatment. Noninclusion of pyrazinamide in the initial treatment leads to the second phase lasting for 4 to 7 months or more.

20. A patient in the initial phase of TB is prescribed ethambutol. The nurse monitors the client for which of the following suggesting an adverse reaction?
    A) Hypersensitivity
    B) Skin eruptions
    C) Joint pain
    D) Myalgia
    Ans: C
    Feedback:
    Joint pain is an adverse reaction of ethambutol. Hypersensitivity and skin eruptions are adverse reactions of isoniazid. Myalgia is an adverse reaction of pyrazinamide.

21. A patient with TB has been admitted to a health care facility. When providing instructions related to antitubercular drugs, which of the following should the nurse include to minimize complications related to the GI tract?
    A) Double the dose if earlier dose is missed.
    B) Take prescribed pyrazinamide without regard to food.
    C) Take prescribed ethambutol with food.
    D) Avoid the consumption of alcohol.
    Ans: D
    Feedback:
    The nurse should instruct the patient to avoid the consumption of alcohol since alcoholism compounds the patient's difficulties and complicates the general condition of the patient's gastrointestinal tract. The nurse should instruct the patient to take the prescribed dose of ethambutol without regard to food and to take the prescribed pyrazinamide along with food. The nurse should instruct the patient to avoid doubling the dose in case the earlier dose was missed.

22. A nurse is assigned to care for a patient with TB in a health care facility. The patient has been prescribed pyrazinamide. Which of the following would the nurse identify as a contraindication to the prescribed therapy?
    A) Acute gout
    B) Age younger than 13 years
    C) Diabetic retinopathy
    D) Cataracts
    Ans: A
    Feedback:
    The nurse should know that pyrazinamide is contraindicated among patients with acute gout. Pyrazinamide is also contraindicated in patients with acute hepatic or renal impairment and in patients with diabetes mellitus. Ethambutol is contraindicated in patients with diabetic retinopathy, patients with cataracts, and patients who are younger than 13 years of age.

23. A nurse is caring for a patient undergoing the second phase of standard TB treatment. The nurse knows that which of the following combinations of drugs needs to be administered to the client?
    A) Pyrazinamide and dapsone
    B) Rifampin and pyrazinamide
    C) Rifampin and isoniazid
    D) Dapsone and isoniazid
    Ans: C
    Feedback:
    The nurse knows that a combination of rifampin and isoniazid drugs should be used during the second phase of standard treatment. Isoniazid, rifampin, and pyrazinamide are not used together as combination drugs in the second phase of standard treatment. Dapsone is used for leprosy and cannot be used in combination with isoniazid or any other drug for TB.

24. A 45-year-old patient with TB is to receive rifampin. The nurse would monitor the patient for which of the following?
    A) Diarrhea
    B) Fever
    C) Dermatitis
    D) Vertigo
    Ans: D
    Feedback:
    The nurse should monitor for vertigo as an adverse reaction of rifampin in the patient. Diarrhea, fever, and dermatitis are not adverse reactions of administering rifampin. Diarrhea is an adverse reaction of pyrazinamide. Fever is an adverse reaction of isoniazid. Dermatitis and pruritus are the adverse reactions of ethambutol.

25. A 72-year-old patient with TB is undergoing standard treatment in a health care facility. Which ongoing assessment would the nurse complete?
    A) Monitoring for appearance of adverse reactions
    B) Monitoring patient's vital signs every 24 hours
    C) Assessing patient's history of contacts
    D) Use DOT to administer the drug to the patient
    Ans: A
    Feedback:
    The nurse should monitor for the appearance of adverse reactions in the patient during ongoing assessment of the treatment. The nurse should monitor vital signs of the patient every 4 hours and not every 24 hours when the patient is hospitalized. The nurse should assess the patient's history of contacts as part of the preadministration assessment and not as part of the ongoing assessment. DOT can only be used by the nurse to administer antitubercular drugs when the patient is at home, at his place of employment, or in school. DOT is not used when the patient is hospitalized.

26. A patient diagnosed with TB is undergoing treatment. The nurse knows that which of the following would be used for household members and other close associates of the client to help prevent the spread of the disease?
    A) Long-term therapy
    B) Prophylactic therapy
    C) DOT therapy
    D) Short-term therapy
    Ans: B
    Feedback:
    Prophylactic therapy will prevent or avoid the spreading of TB in household members and other close associates of the diagnosed client. Long-term treatment does not prevent the spreading of TB, though it may eventually cure or reduce the intensity of the disease. Directly observed therapy (DOT) is used to administer drugs two to three times weekly. Using DOT will not prevent the TB from spreading. Usually, short-term therapy is of no value in treating TB. Short-term therapy will also not prevent the disease from spreading.

27. A patient with TB is admitted to a health care facility. The nurse is required to administer an antitubercular drug through the parenteral route to this patient. Which of the following precautions should the nurse take when administering frequent parenteral injections?
    A) Rotate injection sites for frequent parenteral injections.
    B) Monitor patient's vital signs each morning.
    C) Monitor signs of liver dysfunction weekly.
    D) Administer streptomycin to promote nutrition.
    Ans: A
    Feedback:
    The nurse should be careful to rotate injection sites when administering frequent parenteral injections. At the time of each injection, the nurse inspects previous injection sites for signs of swelling, redness, and tenderness. The nurse should monitor any signs of liver dysfunction monthly in patients who are being administered antitubercular drugs. The nurse should ensure that pyridoxine, and not streptomycin, is administered to the patient to promote nutrition, but this is only administered if the patient has been living in impoverished conditions and is malnourished. The nurse should monitor the patient's vital signs every 4 hours and not once every morning.

28. A patient with TB is undergoing initial therapy in the treatment. The nurse has to administer three or more drugs in combination to the patient. The patient wishes to know the reason for administering a combination of drugs. Which of the following explanations does the nurse offer related to the combination of medications?
    A) Prevents the incidence of liver dysfunction
    B) Slows down bacterial resistance
    C) Slows body's resistance to medication
    D) Prevents further spreading of TB
    Ans: B
    Feedback:
    The nurse should inform the patient that administering two to three drugs in combination slows down the development of bacterial resistance in the body. Administering a combination of drugs will not specifically prevent the incidence of liver dysfunction. Using drugs in combination does not slow down the body's resistance to medication, though it does reduce the development of bacterial resistance. Prophylactic treatment helps in preventing the TB from spreading further.

29. A client with diabetes who is taking an oral antidiabetic agent is diagnosed with tuberculosis and is prescribed rifampin. The nurse would instruct the client about which of the following?
    A) Increased risk for bleeding
    B) Greater risk for hepatotoxicity
    C) Increased blood glucose levels
    D) Risk for increased blood pressure
    Ans: C
    Feedback:
    Rifampin interacts with oral hypoglycemic agents, leading to a decrease in the effectiveness of the oral hypoglycemic agent, thus increasing blood glucose levels. An increased risk for bleeding occurs when rifampin is given with oral anticoagulants. An increased risk of hepatotoxicity occurs when rifampin is given with isoniazid. When verapamil is given with rifampin, the effectiveness of verapamil is decreased, leading to increased blood pressure levels.

30. A nursing instructor is describing a situation in which a client with tuberculosis periodically visits his primary health care provider and demonstrates taking his medication in front of the nurse. The instructor is describing which of the following?
    A) Initial phase of treatment
    B) Continuation phase of treatment
    C) Directly observed therapy
    D) Adherence evaluation
    Ans: C
    Feedback:
    With directly observed therapy (DOT), the patient makes periodic visits to the office of the primary health care provider or the health clinic and takes the drug in the presence of the nurse. Nurses watch the patient swallow each dose of the medication treatment. In some cases, the nurse may travel to the patient's home, place of employment, or school to observe or administer medication. DOT can be used during the initial and/or continuation phase of treatment.

1. When teaching a client about antiviral therapy, the nurse would include information about the possibility of which adverse reactions? Select all that apply.
   A) Rash
   B) Sedation
   C) Chills
   D) Diarrhea
   E) Headache
   Ans: A, D, E
   Feedback:
   Adverse reactions associated with antiviral drugs include nausea, vomiting, diarrhea, headache, rash, fever, and insomnia.

2. A nurse is preparing to administer antiviral therapy. The nurse integrates knowledge of this therapy, administering the drugs cautiously to clients with which of the following? Select all that apply.
   A) Hepatic impairment
   B) Renal impairment
   C) Diabetes
   D) Low blood cell count
   E) Hypertension
   Ans: B, D
   Feedback:
   Antivirals should be used cautiously in clients with renal impairment, low blood cell counts, history of epilepsy (rimantadine), and history of respiratory disease (zanamivir).

3. Antiviral drugs have limited use because they are effective against only a small number of specific viral infections. The nurse would expect antiviral drugs to be used for which infection? Select all that apply.
   A) Human immunodeficiency virus (HIV)
   B) Herpes simplex virus (HSV)
   C) Cytomegalovirus (CMV)
   D) Rotavirus
   E) Rhinovirus
   Ans: A, B, C
   Feedback:
   Antiviral drugs are used in the treatment or prevention of infections caused by cytomegalovirus (CMV), herpes simplex virus (HSV) 1 and 2, herpes zoster, human immunodeficiency virus (HIV), influenza A and B, respiratory syncytial virus (RSV), and hepatitis B and C. They are not used for rotavirus or rhinovirus infections.

4. A group of nursing students are reviewing information about antiviral agents. The students demonstrate understanding of the information when they identify which of the following as a drug category used for treating viral infections? Select all that apply.
   A) Antiattachment
   B) Antiretroviral
   C) Antitranscription
   D) Antireplication
   E) Antiviral
   Ans: B, E
   Feedback:
   The drugs used to treat viral infections can be split into two categories: antiviral and antiretroviral agents.

5. A nurse is reviewing information about cidofovir in preparation for administration. The nurse understands that which of the following are true? Select all that apply.
   A) It should not be given to clients who have renal impairment.
   B) The drug should not be given to clients receiving aminoglycosides.
   C) Cidofovir is used in the treatment of cytomegalovirus retinitis.
   D) It is administered by placing one drop in both eyes twice daily.
   E) The drug should not be given with HMG-CoA reductase inhibitors.
   Ans: A, B, C
   Feedback:
   Cidofovir should not be given to clients who have renal impairment or who are receiving other nephrotoxic drugs, such as aminoglycosides. The drug is used to treat cytomegalovirus retinitis and is administered IV.

6. After teaching a group of nursing students about antiretroviral drugs, the instructor determines that the teaching was successful when the students identify that these drugs are used to treat which infections? Select all that apply.
   A) Hepatitis C virus (HCV)
   B) Human immunodeficiency virus (HIV)
   C) Acquired immunodeficiency syndrome (AIDS)
   D) Herpes simplex virus (HSV) 1
   E) Herpes simplex virus (HSV) 2
   Ans: B, C
   Feedback:
   Antiretroviral drugs are used to treat HIV and AIDS.

7. A client is receiving antiretroviral therapy. Which adverse reactions would the nurse include in the teaching plan for this client? Select all that apply.
   A) Altered taste
   B) Peripheral numbness
   C) Oral candidiasis
   D) Rash
   E) Fever
   Ans: A, B, D, E
   Feedback:
   Adverse reactions associated with antiretroviral drugs are nausea, vomiting, diarrhea, altered taste, headache, fever, chills, rash, and numbness and tingling in the circumoral area or peripherally or both. Oral candidiasis is not associated with antiretroviral therapy.

8. The nurse is reviewing the medical record of a client who is to receive ritonavir. Which medication if found in the medication history would lead the nurse to contact the primary health care provider because the prescribed drug would be contraindicated? Select all that apply.
   A) Triazolam (Halcion)
   B) Bupropion (Wellbutrin)
   C) Zolpidem (Ambien)
   D) Lisinopril (Prinivil)
   E) Procainamide (Procanbid)
   Ans: B, C, E
   Feedback:
   Ritonavir (Norvir) is contraindicated if the client is taking bupropion (Wellbutrin), zolpidem (Ambien), or an antiarrhythmic drug.

9. A group of nursing students are reviewing information about antiretroviral therapy. The students demonstrate understanding of the information when they identify which conditions as requiring cautious use of this class of drugs? Select all that apply.
   A) Diabetes
   B) Hemophilia
   C) Impaired hepatic function
   D) Impaired renal function
   E) Hypertension
   Ans: A, B, C
   Feedback:
   Antiretroviral drugs should be used cautiously in clients with diabetes, impaired hepatic function, pregnancy, or hemophilia.

10. A nurse is providing care to a client with a sulfonamide allergy. The nurse would expect to administer which of the following cautiously if prescribed? Select all that apply.
    A) Maraviroc (Selzentry)
    B) Lamivudine (Epivir)
    C) Fosamprenavir (Lexiva)
    D) Ritonavir (Norvir)
    E) Amprenavir (Agenerase)
    Ans: C, E
    Feedback:
    If a client has a sulfonamide allergy, the antiretroviral drugs fosamprenavir and amprenavir should be used cautiously.

11. The nurse is preparing to administer an antiviral drug to a client. Which of the following would the nurse include in the preadministration assessment? Select all that apply.
    A) Client's general state of health
    B) Blood glucose levels
    C) Resistance to infection
    D) Electrocardiogram findings
    E) Vital signs
    Ans: A, C, E
    Feedback:
    The nurse's preadministration assessment of the client prior to administration of antiviral drugs should include determination of the client's general state of health and resistance to infection, record of client's symptoms and complaints, and record of vital signs. Blood glucose levels and electrocardiogram findings are not needed.

12. The nurse is preparing a plan of care for a client who is to receive antiviral therapy. Which nursing diagnoses would the nurse most likely include related to drug therapy? Select all that apply.
    A) Acute Pain
    B) Risk for Impaired Skin Integrity
    C) Risk for Injury
    D) Risk for Imbalanced Nutrition
    E) Body Image Disturbances
    Ans: A, C, D, E
    Feedback:
    Drug-specific diagnoses for antiviral drugs include Risk for Imbalanced Nutrition, Risk for Impaired Skin Integrity, Risk for Injury, Body Image Disturbance, and Acute Pain.

13. The nurse is preparing a plan of care for a client being treated with an antiviral drug. Which outcome would the nurse most likely identify? Select all that apply.
    A) Client remains free of other medical conditions.
    B) Client demonstrates an optimal response to therapy.
    C) Client exhibits continual changes in vital signs.
    D) Client demonstrates ability to manage adverse reactions.
    E) Client verbalizes understanding of the therapeutic regimen.
    Ans: B, D, E
    Feedback:
    Optimal response to therapy and meeting of client needs related to the management of adverse reactions and an understanding of the therapeutic regimen are outcomes that should be addressed by the nurse in the planning step of the nursing process. Continually changing vital signs would be inappropriate. Remaining free of other medical conditions would be unrealistic.

14. A nurse is preparing to administer ribavirin via inhalation to a client. Which of the following would the nurse need to keep in mind? Select all that apply.
    A) Administration is via a nebulizer.
    B) Solution should be discarded and replaced every 24 hours.
    C) Respiratory status can be worsened by the drug.
    D) Extrapyramidal effects can occur upon administration of the drug.
    E) Women of childbearing age should not inhale the drug.
    Ans: B, C, E
    Feedback:
    Ribavirin is administered by inhalation using a small-particle aerosol generator. The solution should be discarded and replaced every 24 hours. This drug can worsen respiratory status, this drug is pregnancy category X, and women of childbearing age should take care not to inhale the drug.

15. Clients receiving antiretroviral drugs for HIV infection may continue to contract opportunistic infections. The nurse would be alert for which of the following when assessing the client during therapy? Select all that apply.
    A) Fever
    B) Malaise
    C) Sore throat
    D) Lethargy
    E) Hypotension
    Ans: A, B, C, D
    Feedback:
    The nurse's ongoing assessment of HIV-positive clients should include close monitoring for signs of infection such as fever, malaise, sore throat, or lethargy.

16. Which of the following would the nurse identify as a goal for a client who is receiving an antiviral drug? Select all that apply.
    A) Adverse reactions are identified and treated.
    B) Adequate nutritional status is maintained.
    C) Perceptions of body changes are managed successfully.
    D) Skin integrity is successfully maintained.
    E) Therapeutic response is achieved.
    Ans: A, B, C, D, E
    Feedback:
    The goals for a client taking antiviral drugs can include the following: adverse reactions are identified and treated, adequate nutritional status is maintained, perceptions of body changes are managed successfully, skin integrity is successfully maintained, and therapeutic response is achieved.

17. A nurse is preparing a teaching plan for a client who is receiving antiviral therapy. Which of the following would the nurse include? Select all that apply.
    A) "Only notify your physician if an allergic reaction to the antiviral drug occurs."
    B) "These drugs are not a cure for the viral infection, but they will shorten the course of disease."
    C) "Mark a calendar to designate the days the drug is to be taken so that you can keep to the ordered alternate-dosage schedule."
    D) "These drugs will help in preventing the spread of the infection to those around you."
    E) "Take precautions when you're outside because you might experience a sunburn reaction."
    Ans: B, C, E
    Feedback:
    The nurse's teaching plan for antiviral drugs should include educating the client and family that antiviral drugs are not a cure for viral infection but will shorten the course of disease; that antiviral drugs will not prevent the spread of disease to others; that some antiviral drugs cause photosensitivity, so precaution should be taken when going outdoors; that a calendar should be marked to designate the days the drug is to be taken for clients on an alternate-dosage schedule; and that the physician should be notified if burning, stinging, itching, or rash worsens or becomes pronounced.

18. A patient presents to her primary health care provider for treatment of herpes simplex. While obtaining the medical history of the patient, the nurse discovers that the patient has respiratory problems and uses theophylline. The primary health care provider considers prescribing acyclovir as the drug for treatment until she reads the nursing history. The nurse understands that the primary health care provider decided against the use of acyclovir for which reason?
    A) Increases the risk for acyclovir toxicity
    B) Increases the risk of seizures in patients with respiratory problems
    C) Increases serum level of theophylline in patients taking theophylline
    D) Increased serum levels of antiviral valacyclovir
    Ans: C
    Feedback:
    When patients receiving theophylline treatment are administered acyclovir, there is an increase in the serum level of theophylline, thus placing the client at risk for theophylline toxicity. The serum levels of acyclovir do not increase. Increased levels of valacyclovir occur if the patient is taking valacyclovir, not theophylline. Taking acyclovir with theophylline does not increase the risk of seizures.

19. A patient is being treated with saquinavir. The nurse would assess the patient for which of the following?
    A) Increase in patient's weight
    B) Evidence of liver dysfunction
    C) Photosensitivity
    D) Allergic skin reaction
    Ans: A
    Feedback:
    Patients taking saquinavir experience redistribution of body fat, with the movement to the center of the body. The nurse should spend time with these patients, encouraging them to verbalize their feelings regarding this change in appearance. Taking saquinavir does not cause liver dysfunction, photosensitivity, or any allergic skin reactions.

20. A patient is being discharged from a health care facility but is required to continue antiviral therapy at home. Which of the following points should the nurse include in the teaching plan to educate the patient?
    A) "A slight elevation in temperature is normal and needn't be reported."
    B) "Double the dosage of the drug if you miss a dose."
    C) "Stop taking the drug as soon as the symptoms of the infection disappear."
    D) "Make sure to notify your primary health care provider if you develop any adverse reactions."

    Ans: D

    Feedback:

    The nurse should instruct the patient to report adverse reactions to the primary health care provider. The nurse should also tell the patient to report any increase in temperature, even if it is a slight increase. If the patient misses a dose, the next dose should be taken as soon as remembered, but it should not be doubled. The nurse should also instruct the patient to take the drug exactly as directed for the full course of therapy, even if the symptoms of the infection disappear.

21. A patient for whom antiretroviral therapy has been prescribed informs the nurse that she is taking oral contraceptives. The nurse responds that the combination of oral contraceptives and antiretroviral therapy can lead to which of the following?
    A) Decreased effectiveness of antiviral therapy
    B) Increased risk of vaginal bleeding
    C) Decreased effectiveness of birth control pills
    D) Increased serum level of the antiretroviral

    Ans: C

    Feedback:

    Antiretrovirals decrease the effectiveness of oral birth control agents. Combining antiretrovirals with birth control pills does not, however, increase the risk of vaginal bleeding, increase serum levels of the antiretroviral, or decrease the effectiveness of antiviral therapy.

22. An HIV-positive patient is being treated with didanosine as part of the antiretroviral therapy. When assessing the patient, the nurse would immediately report which of the following to the primary health care provider?
    A) Peripheral neuropathy
    B) Headache
    C) Excoriation
    D) Taste alteration
    Ans: A
    Feedback:
    The nurse should immediately report symptoms of peripheral neuropathy to the primary health care provider. Headache and taste alteration are some of the mild adverse effects of the drug and are not cause for immediate concern. Excoriation is an adverse effect of imiquimod and does not occur in patients being administered didanosine.

23. A patient with skin lesions due to a viral infection has been prescribed a topical antiviral agent. When teaching the patient about this therapy, which of the following would the nurse emphasize?
    A) The drug will not prevent the spread of the disease to others.
    B) Topical drugs should be applied using the hand, not a finger cot or gloves.
    C) All lesions should be left open and not covered in any way.
    D) Sexual contact when lesions are present is permissible if barrier methods are used.
    Ans: A
    Feedback:
    The nurse should inform the patient that application of the drug does not prevent the spread of the disease to others. Topical drugs should be applied with a finger cot or gloves but not with bare hands. The nurse should instruct the patient to cover all lesions and not leave them open. The nurse should also stress the importance of avoiding sexual contact when lesions are present irrespective of contraceptive measures.

24. An HIV-positive patient on antiretroviral therapy informs the nurse that he is considering taking sildenafil. The nurse informs the patient that he may experience which of the following when taking sildenafil with antiretroviral therapy?
    A) Feeling of dizziness
    B) Itching of skin
    C) Risk of hypotension
    D) Depression
    Ans: C
    Feedback:
    The nurse should educate the patient regarding the associated risks, such as hypotension, visual disturbances, and prolonged penile erection. Feeling of dizziness, itching of skin, and depression are not conditions that are specifically associated with sildenafil and antiretroviral drugs.

25. A patient who is receiving antiretroviral therapy is about to be discharged. Which of the following precautions should the nurse instruct the patient to follow to reduce the effects of photosensitivity?
    A) Wear protective clothing when outside.
    B) Increase fluid intake.
    C) Avoid lights while indoors.
    D) Use tanning beds for tan.
    Ans: A
    Feedback:
    The nurse should encourage the patient to wear protective clothing while going out in the sun to reduce the effect of photosensitivity. While increasing the fluid intake is recommended, it does not help combat the effects of photosensitivity. There is no need to avoid indoor lights as the skin becomes sensitive to sunlight but not indoor lights. The use of tanning beds should be avoided.

26. A nurse is caring for a patient who is prescribed amantadine. The nurse would assess the patient for which of the following?
    A) Asthenia and abdominal pain
    B) Fever and dizziness
    C) Anorexia and dyspnea
    D) Hypotension and insomnia
    Ans: D
    Feedback:
    A nurse should monitor the patient for hypotension and insomnia, since these are adverse reactions of amantadine. Asthenia and abdominal pain are adverse reactions of adefovir. Fever and dizziness are adverse reactions of acyclovir. Anorexia and dyspnea are adverse reactions of cidofovir. Therefore, a nurse need not monitor the patient for fever, dizziness, asthenia, abdominal pain, anorexia, and dyspnea, as these are not adverse reactions of amantadine.

27. A patient who is being discharged needs to continue taking the zanamivir using a Diskhaler and a bronchodilator. Both the inhaler and the Diskhaler are prescribed at the same time. Which instruction would the nurse include in the teaching plan for the patient?
    A) Zanamivir should be taken every 6 hours.
    B) Use the bronchodilator before taking zanamivir.
    C) Zanamivir used with a bronchodilator causes orthostatic hypotension.
    D) Risk of disease transmission is minimal during therapy.
    Ans: B
    Feedback:
    The bronchodilator should be used before the zanamivir. The drug should be taken every 12 hours, not every 6 hours. The nurse should also inform the patient that treatment with this drug does not decrease the risk of transmission of the "flu" to others. Zanamivir when used with a bronchodilator does not specifically cause orthostatic hypotension, though antivirals are known to affect the mental status of patients.

28. A nursing instructor is describing the different categories of antiretroviral agents used in treatment for HIV infection. The instructor determines that the teaching was successful when the students identify which category as affecting an enzyme so that new viral particles cannot mature?
    A) Protease inhibitors
    B) Reverse transcriptase inhibitors
    C) Nonnucleoside reverse transcriptase inhibitors
    D) Integrase inhibitors
    Ans: A
    Feedback:
    Protease inhibitors block the protease enzyme so the new viral particles cannot mature. Reverse transcriptase inhibitors block the reverse transcriptase enzyme so the HIV material cannot change into DNA in the new cell, preventing new HIV copies from being created. Nonnucleoside reverse transcriptase inhibitors latch on to the reverse transcriptase molecule to block the ability to make viral DNA. Integrase inhibitors prevent enzymes from inserting HIV genetic material into the cell's DNA.

29. A client is ordered to receive an antiretroviral agent that is categorized as a nonnucleoside reverse transcriptase inhibitor. Which of the following would the nurse expect to administer?
    A) Indinavir
    B) Nevirapine
    C) Saquinavir
    D) Ritonavir
    Ans: B
    Feedback:
    Nevirapine is classified as a nonnucleoside reverse transcriptase inhibitor. Indinavir, saquinavir, and ritonavir are classified as protease inhibitors.

30. A nurse is providing care to a client receiving highly active antiretroviral therapy (HAART). The nurse would expect the client to receive which of the following antiretroviral agents? Select all that apply.
    A) Protease inhibitors
    B) Reverse transcriptase inhibitors
    C) Nonnucleoside reverse transcriptase inhibitors
    D) Entry inhibitors
    E) Integrase inhibitors
    Ans: A, B, C
    Feedback:
    HAART includes three categories of antiretroviral drugs: protease inhibitors, reverse transcriptase inhibitors, and nonnucleoside reverse transcriptase inhibitors.

31. A client is prescribed entecavir, which is supplied as a buffered powder. The nurse instructs the client to mix the powder with which of the following?
    A) Fruit juice
    B) Applesauce
    C) Water
    D) Gelatin
    Ans: C
    Feedback:
    The client should be instructed to mix the buffered powder with 4 ounces of water (not juice), stir until it is dissolved, and then drink it immediately. Using any other substance such as fruit juice, applesauce, or gelatin would be inappropriate.

32. A client diagnosed with HIV infection is receiving HAART. The client, who is alert and oriented, complains of anorexia, nausea, and vomiting. He has lost 10 pounds in the last 6 weeks. Additional assessment reveals pale, pink skin without any irritation or breakdown. He denies any complaints of pain. Which nursing diagnosis would the nurse identify as the priority for this client?
    A) Risk for Injury
    B) Risk for Imbalanced Nutrition: Less Than Body Requirements
    C) Risk for Impaired Skin Integrity
    D) Acute Pain
    Ans: B
    Feedback:
    The client's complaints along with his weight loss strongly suggest a nursing diagnosis of Risk for Imbalanced Nutrition: Less Than Body Requirements as a priority. The client is alert and oriented, so his risk for injury is significantly low. There is no evidence of impaired skin integrity at present. However, this may become a concern if the client begins to experience skin breakdown secondary to his poor nutritional status. The client denies any pain, so Acute Pain would be inappropriate.

1. A client receiving which of the following would the nurse identify as being at increased risk for candidal infections? Select all that apply.
   A) Antihypertensive therapy
   B) Antibiotics
   C) Hypoglycemic agents
   D) Immunosuppressive agents
   E) Oral contraceptives
   Ans: B, C, D, E
   Feedback:
   Clients who are at increased risk for candidal infections are those who are immunocompromised, have diabetes, are pregnant, or are taking oral contraceptives, antibiotics, or corticosteroids, as well as posttransplant or surgical clients.

2. A nurse is conducting a class for a local community group about herbal agents. Which of the following would the nurse include as being effective against fungal skin infections? Select all that apply.
   A) Tea tree oil
   B) Gingko biloba
   C) Valerian root
   D) Fever few
   E) Garlic
   Ans: A, E
   Feedback:
   Tea tree oil and garlic are two herbs that researchers have identified as having antifungal properties to treat skin infections.

3. A nurse would use caution when administering itraconazole (Sporanox) to clients with which of the following conditions? Select all that apply.
   A) Hypertension
   B) Glaucoma
   C) HIV
   D) Hypochlorhydria
   E) GERD
   Ans: C, D
   Feedback:
   Itraconazole (Sporanox) should be used with caution in clients with HIV infection and hypochlorhydria.

4. After teaching a group of nursing students about amphotericin B, the instructor determines that the teaching was successful when the students identify which of the following as true? Select all that apply.
   A) The drug is light sensitive.
   B) It can be administered via IM injection.
   C) The drug can cause renal damage.
   D) Amphotericin B is administered in the outpatient setting.
   E) The drug should be used within 8 hours.
   Ans: A, C, E
   Feedback:
   Amphotericin B is given only under close supervision in the hospital setting, can cause renal damage, is given IV usually over a period of 6 hours, and should be protected from light and used within 8 hours of reconstitution.

5. A nurse is administering an IV infusion of amphotericin B. The nurse would be alert for which of the following adverse reactions during the first 30 to 60 minutes of the infusion? Select all that apply.
   A) Muscle pain
   B) Hypotension
   C) Nausea
   D) Decreased renal function
   E) Chills
   Ans: B, C, E
   Feedback:
   When the nurse administers amphotericin B by IV infusion, immediate adverse reactions can occur within 15 to 20 minutes of beginning the infusion, including nausea, vomiting, hypotension, tachypnea, fever, and chills; therefore, it is important for the nurse to carefully monitor the client's temperature, pulse, respirations, and blood pressure during the first 30 to 60 minutes of treatment.

6. Which of the following would the nurse include in the teaching plan for a client about the use of an antifungal cream preparation for the treatment of ringworm in the ambulatory care setting? Select all that apply.
   A) Clean involved area before applying cream.
   B) Increase the amount of cream used if skin infection worsens.
   C) Decrease the frequency of applying cream if skin infection improves.
   D) Keep towels and washcloths for bathing separate from other family members during treatment.
   E) Keep the affected area clean and moist.
   Ans: A, D
   Feedback:
   When instructing a client about the use of an antifungal cream preparation for the treatment of ringworm in the ambulatory care setting, the nurse should include the following: cleaning the involved area and applying the cream to the skin as directed by the physician, not increasing or decreasing the amount used or number of times the cream should be applied unless directed to do so by the physician, keeping the affected area clean and dry, and keeping towels and washcloths for bathing separate from those of other family members to avoid the spread of infection.

7. Which of the following should be included in the teaching plan when instructing a female client on the use of miconazole (Monistat) vaginal cream? Select all that apply.
   A) Discontinue drug during the menstrual period.
   B) Avoid nylon and tight-fitting garments to avoid reinfection.
   C) Wear a sanitary napkin after insertion to prevent staining of clothes and bed linens.
   D) Do not have intercourse while taking the drug to avoid reinfection.
   E) If there is no improvement in 2 days, stop using the drug and consult a physician.
   Ans: B, C, D
   Feedback:
   When instructing a female client on the use of miconazole (Monistat) vaginal cream, the nurse should include the following: inserting the drug high in the vagina using the applicator provided; wearing a sanitary napkin after insertion of the drug to prevent staining of clothes and bed linens; continuing the drug during the menstrual period; not having intercourse while taking the drug or advising her partner to use a condom to avoid reinfection; avoiding nylon and tight-fitting garments to avoid reinfection; stopping the drug and notifying the primary health care provider if there is no improvement in 5 to 7 days; and if abdominal pain, pelvic pain, rash, fever, or offensive-smelling vaginal discharge is present, not using the drug but notifying the physician.

8. A group of nursing students are reviewing information about helminthes. The students demonstrate understanding when they identify which of the following as a helminth? Select all that apply.
   A) Roundworms
   B) Pinworms
   C) Ringworms
   D) Hookworms
   E) Tapeworms
   Ans: A, B, D, E
   Feedback:
   Roundworms, pinworms, hookworms, and tapeworms are examples of helminths. Ringworm is a fungal infection.

9. Which of the following would the nurse include in the teaching plan as an adverse reaction for a client receiving antihelminthic therapy? Select all that apply.
   A) Hypotension
   B) Drowsiness
   C) Abdominal pain
   D) Hypoglycemia
   E) Nausea
   Ans: B, C, E
   Feedback:
   Antihelminthics cause several generalized adverse reactions that the client should be advised of, including drowsiness, dizziness, nausea, vomiting, abdominal pain and cramps, and diarrhea.

10. A nurse would expect to administer antihelminthic therapy cautiously to which of the following clients? Select all that apply.
    A) Clients who are lactating
    B) Clients with hepatic impairment
    C) Clients with anemia
    D) Clients with diabetes
    E) Clients with renal impairment
    Ans: A, B, C, E
    Feedback:
    Antihelminthic drugs should be used cautiously in lactating clients and clients with hepatic or renal impairment and malnutrition or anemia.

11. After teaching a group of nursing students about antiprotozoal drugs, the instructor determines that the teaching was successful when the group identifies which of the following as an indication for use? Select all that apply.
    A) Toxoplasmosis
    B) Malaria
    C) Giardiasis
    D) *Pneumocystis carinii* pneumonia
    E) Trichomoniasis
    Ans: A, B, C, D, E
    Feedback:
    Antiprotozoal drugs are used in the treatment of malaria, giardiasis, toxoplasmosis, intestinal amebiasis, trichomoniasis, and *Pneumocystis carinii* pneumonia.

12. Foods that acidify the urine may interact with chloroquine and increase the drug's excretion, thereby decreasing its effectiveness in the treatment of malaria. The nurse should counsel the client to avoid which of the following foods during treatment with chloroquine? Select all that apply.
    A) Plums
    B) Oranges
    C) Fish
    D) Eggs
    E) Cranberries
    Ans: A, C, D, E
    Feedback:
    The nurse should counsel the client to avoid cranberries, plums, prunes, meats, cheeses, eggs, fish, and grains.

13. A nurse is preparing a plan of care for a client who is prescribed an antiparasitic agent. Which nursing diagnosis would the nurse most likely identify related to the client's drug therapy? Select all that apply.
    A) Impaired Comfort
    B) Diarrhea
    C) Risk for Ineffective Tissue Perfusion
    D) Risk for Deficient Fluid Volume
    E) Risk for Impaired Respiratory Function
    Ans: B, D, E
    Feedback:
    Drug-specific nursing diagnoses when discussing the treatment of parasitic infection include Diarrhea, Risk for Deficient Fluid Volume, Imbalanced Nutrition, and Risk for Impaired Respiratory Function.

14. A client is planning to travel to an area of the world where malaria is endemic. The physician has given the client a prescription of chloroquine as prophylaxis. Which of the following would the nurse include in the teaching plan for this client about starting and ending therapy? Select all that apply.
    A) Begin therapy 1 month before exposure.
    B) Begin therapy 2 weeks before exposure.
    C) Continue therapy 6 to 8 weeks after leaving endemic area.
    D) Continue therapy 1 to 2 weeks after leaving endemic area.
    E) Stop therapy 2 days prior to leaving endemic area.
    Ans: B, C
    Feedback:
    The nurse should advise the client to begin malaria prophylaxis therapy 2 weeks before traveling to the endemic area and to continue therapy 6 to 8 weeks after leaving the endemic area.

15. During treatment of parasitic infections, the primary health care provider orders daily stool specimens be sent to the lab for examination. Which of the following would the nurse document as part of the client's plan of care? Select all that apply.
    A) Number of stools produced
    B) Odor of stool
    C) Consistency of stool
    D) Frequency of stool
    E) Color of stool
    Ans: A, C, D, E
    Feedback:
    The nurse should record the number, consistency, color, and frequency of stools as part of the client's plan of care. Documenting the odor is not necessary.

16. Which of the following would the nurse emphasize when teaching the client and family about measures to prevent reinfection and the transmission of a parasitic infection to others? Select all that apply.
    A) Wash hands thoroughly before preparing or eating food.
    B) Disinfect toilets daily.
    C) Bathe daily.
    D) Disinfect the bathtub or shower stall immediately after bathing.
    E) Avoid putting fingers in the mouth or biting fingernails.
    Ans: A, B, C, D, E
    Feedback:
    Important measures to include in the teaching plan to prevent reinfection and the transmission of a parasitic infection to others include the following: washing hands thoroughly before preparing or eating food, disinfecting toilets daily, bathing daily (showering is best), disinfecting the bathtub or shower stall immediately after bathing, and avoiding putting fingers in the mouth or biting fingernails.

17. A group of nursing students are reviewing information about clotrimazole vaginal preparations. The students demonstrate understanding of the drug when they identify which of the following as a trade name for the drug? Select all that apply.
    A) Lotrimin
    B) Monistat
    C) Vagistat-1
    D) Terazol
    E) Mycelex
    Ans: A, E
    Feedback:
    Lotrimin and Mycelex are trade names for clotrimazole vaginal preparations. Monistat is the trade name for miconazole. Vagistat-1 is the trade name for tioconazole. Terazol is the trade name for terconazole.

18. The nurse must monitor a client carefully for signs of bleeding when which of the following antifungals is concomitantly administered with warfarin (Coumadin)? Select all that apply.
    A) Fluconazole (Diflucan)
    B) Itraconazole (Sporanox)
    C) Ketoconazole (Nizoral)
    D) Griseofulvin (Grisactin)
    E) Voriconazole (Vfend)
    Ans: A, B, C, D, E
    Feedback:
    The concomitant administration of fluconazole, itraconazole, ketoconazole, griseofulvin, and voriconazole with warfarin increases the client's risk of bleeding.

19. A patient is receiving chloroquine. The nurse would instruct the client to do which of the following?
    A) Avoid foods that acidify the urine.
    B) Take the drug on an empty stomach.
    C) Increase dosage if dosage missed once.
    D) Discontinue drug if color of urine changes.
    Ans: A
    Feedback:
    The nurse should educate the patient to avoid foods that acidify the urine (cranberries, plums, prunes, meats, cheeses, eggs, fish, and grains), as they may interact with the antimalarial drug and increase excretion and thereby decrease the effectiveness of chloroquine while taking the drug. Taking the drug on an empty stomach is not advisable for antimalarial drugs. The nurse should instruct the patient to adhere to the dosage regimen unless instructed otherwise. Yellow or brownish discoloration of the urine during chloroquine treatment is normal; there is no need to discontinue the therapy.

20. The primary health care provider has prescribed quinine for a client. The patient is also taking warfarin. Which of the following would be most important for the nurse to keep in mind about this combination when providing care to the patient?
    A) Quinine absorption is increased.
    B) Metabolism of quinine is increased.
    C) The patient is at increased risk for bleeding.
    D) The patient's risk for a heart attack is increased.
    Ans: C
    Feedback:
    Combining warfarin with quinine increases the risk of bleeding. There is no risk of increased absorption or increased metabolism and no increased risk of heart attack associated with taking warfarin and quinine.

21. A patient with a severe stomachache visits the health care facility. A parasitic infection is suspected. The nurse would expect to collect which of the following specimens?
    A) Stool
    B) Blood
    C) Urine
    D) Saliva
    Ans: A
    Feedback:
    The nurse should obtain stool samples of patients with suspected parasitic infection. There is no need to obtain samples of blood, urine, or saliva in cases of suspected parasitic infection.

22. A patient is receiving doxycycline as short-term therapy for malaria. Which of the following instructions would the nurse include in the teaching plan about the possible side effects of the drug?
    A) Avoid taking warfarin because it increases the risk of bleeding.
    B) Avoid exposure to the sun by wearing protective clothing.
    C) Take the drug with food, or immediately afterward.
    D) Do not drive or perform other activities requiring alertness.
    Ans: B
    Feedback:
    The nurse should instruct the patient to avoid exposure to the sun by wearing protective clothing (e.g., long-sleeved shirts, wide-brimmed hats) and by using sunscreen. Combining warfarin with quinine, not doxycycline, increases the risk of bleeding. Doxycycline should be taken on an empty stomach. Doxycycline does not impair alertness, so the patient can drive or perform other activities requiring alertness.

23. A patient has been diagnosed with amebiasis. Which of the following would the nurse do regularly when caring for this patient?
    A) Take vital signs every 8 hours
    B) Freeze any stool samples for testing
    C) Avoid foods that acidify the urine
    D) Provide the patient with small, frequent meals
    Ans: D
    Feedback:
    The nurse should ensure that the patient has small, frequent meals (five to six daily) because these may be more appealing than three large meals. The nurse should take vital signs every 4 hours, not 8. Stool samples for testing should be maintained at room temperature and not frozen. There is no need to avoid foods that acidify the urine.

24. A patient is prescribed metronidazole for intestinal amebiasis. Which of the following instructions should the nurse give to the patient regarding the drug?
    A) Take the drug on an empty stomach.
    B) Avoid intake of alcohol.
    C) Guard against effects of photosensitivity.
    D) Take phenobarbital for impaired sleep.
    Ans: B
    Feedback:
    The nurse should instruct the patient to avoid the use of alcohol, in any form, until the course of treatment is completed. The ingestion of alcohol may cause a mild to severe reaction, with symptoms of severe vomiting, headache, nausea, abdominal cramps, flushing, and sweating. Metronidazole should be taken with food or meals, not on an empty stomach. Photosensitivity is not one of the side effects of metronidazole. Phenobarbital should be avoided, as it increases the metabolism of metronidazole.

25. A patient has been prescribed ketoconazole. Which of the following instructions should the nurse give to the patient regarding its use?
    A) Cut the tablet in half and take each half one after the other.
    B) Take the drug with an antacid.
    C) Ignore any abdominal pain and fever—these are normal.
    D) Do not drive if drowsiness or dizziness occurs.
    Ans: D
    Feedback:
    The nurse should instruct the patient to avoid driving or performing other hazardous tasks requiring alertness if drowsiness or dizziness occurs. The tablet should not be cut in two or chewed. The drug should also not be taken with an antacid because of a decrease in absorption. Abdominal pain and fever should be reported to the primary health care provider immediately, not ignored.

26. A patient has been prescribed albendazole on an outpatient basis for an anthelmintic infection. After teaching the patient about the therapy, which statement by the patient indicates effective teaching?
    A) "Easy bruising or bleeding is normal and needn't be reported."
    B) "I need to disinfect the bathtub or shower stall immediately after bathing."
    C) "I should avoid bathing daily if I have problems with my skin."
    D) "I need to use oral contraceptives while I'm taking this drug."
    Ans: B
    Feedback:
    The nurse should instruct the patient to disinfect the bathtub or shower stall immediately after bathing to avoid spreading the infection. Thrombocytopenia or easy bruising or bleeding is not normal and should be reported immediately. Impaired skin integrity is not associated with albendazole, so there is no need to avoid bathing daily. Instead of oral contraceptives, the nurse should recommend the barrier method during the course of therapy and for 1 month after discontinuing the therapy.

27. Pyrantel has been prescribed for a patient with roundworms. The patient demonstrates understanding of the teaching about this drug when the patient identifies which of the following as an adverse reaction that should be reported to the health care provider immediately?
    A) Abdominal cramping
    B) Headache
    C) Nausea
    D) Rashes
    Ans: D
    Feedback:
    Rashes are a serious adverse reaction associated with pyrantel and should be reported immediately. Headache, nausea, and abdominal cramping are not major side effects associated with pyrantel.

28. A nurse understands that anthelmintic drugs are contraindicated in which patients?
    A) Patients who are pregnant
    B) Patients with myasthenia gravis
    C) Patients with clinical depression
    D) Children younger than 15 years
    Ans: A
    Feedback:
    Anthelmintic drugs are contraindicated in patients who are pregnant. Quinine, not anthelmintic drugs, should not be prescribed for patients with myasthenia gravis. Anthelmintic drugs are not known to be contraindicated in patients with clinical depression or in children younger than 15.

29. After teaching a group of nursing students about the actions of the various antifungal drugs, the instructor determines that the teaching was successful when the students identify which drug as having only fungistatic activity?
    A) Fluconazole
    B) Amphotericin B
    C) Miconazole
    D) Nystatin
    Ans: A
    Feedback:
    Fluconazole has fungistatic activity, whereas amphotericin B, miconazole, and nystatin exert both fungicidal and fungistatic activity.

30. A client who is receiving oral systemic antifungal therapy has a nursing diagnosis of Risk for Ineffective Renal Tissue Perfusion. Which of the following would be least appropriate for the nurse to include in the client's plan of care?
    A) Monitoring urine output hourly
    B) Monitoring serum creatinine levels
    C) Evaluating blood urea nitrogen levels
    D) Premedicating the client with an antihistamine
    Ans: D
    Feedback:
    For the nursing diagnosis of ineffective renal tissue perfusion, the nurse would monitor the client's urine output hourly and evaluate serum creatinine and BUN levels frequently. Premedicating the client with an antihistamine would only be appropriate if the client was receiving amphotericin B via IV infusion.

31. The nurse is teaching a client and his family about administering pentamidine at home. Which statement by the client indicates a need for additional teaching?
    A) "I should protect the solution from direct light."
    B) "The entire treatment should take no more than 15 minutes."
    C) "I need to dissolve the drug in the correct amount of sterile water."
    D) "Only the pentamidine solution should go into the nebulizer's reservoir."
    Ans: B
    Feedback:
    The pentamidine treatment typically lasts about 30 to 45 minutes. The solution should be protected from light after the drug is dissolved with the proper amount of sterile water. No other drugs should be added to the reservoir.

32. A group of nursing students are reviewing information about fungal infections. The students demonstrate understanding of the information when they identify which of the following as a superficial fungal infection?
    A) Aspergillosis
    B) Cryptococcal meningitis
    C) Thrush
    D) Malaria
    Ans: C
    Feedback:
    Thrush is also oral candidiasis, a superficial fungal infection of the oral mucosa. Aspergillosis and cryptococcal meningitis are systemic fungal infections. Malaria is a protozoal infection.

33. A client is receiving amphotericin B IV. The nurse identifies a nursing diagnosis of Impaired Comfort related to medication administration. The nurse determines that the plan of care was effective when which outcome is achieved?
    A) Client remains free from rigors.
    B) Client exhibits a blood pressure within acceptable parameters.
    C) Client maintains a patent IV infusion site.
    D) Client maintains a urine output of at least 30 mL/hour.
    E) Client demonstrates procedure for cleaning involved area.
    Ans: A, B, C
    Feedback:
    The patient receiving amphotericin B IV can experience rigors, hypotension, and problems with the IV infusion site. Therefore, remaining free from rigors and maintaining a stable blood pressure and a patent IV infusion site would indicate that the plan of care for impaired comfort is successful. A urine output of 30 mL/hour would be an indicator of adequate renal tissue perfusion. Cleaning the involved area would not be appropriate because the client has a systemic fungal infection.

1. A nurse recognizes the difference between an opioid and nonopioid analgesic. Which of the following would the nurse identify as nonopioid analgesics? Select all that apply.
   A) Morphine
   B) Codeine
   C) Acetaminophen
   D) Oxycodone
   E) Diflunisal
   Ans: C, E
   Feedback:
   The nonopioid analgesics can be divided into three categories: salicylates, nonsalicylates, and NSAIDs. NSAIDs, acetaminophen (nonsalicylate), and diflunisal (salicylate) are nonopioid analgesics.

2. A nurse is describing the overall effects associated with aspirin to a client. The nurse integrates knowledge of which of the following when describing this drug? Select all that apply.
   A) Analgesic
   B) Antipyretic
   C) Anti-inflammatory
   D) Anti-infective
   E) Antiviral
   Ans: A, B, C
   Feedback:
   Aspirin is a salicylate. Salicylates are useful in pain management because of their analgesic, antipyretic, and anti-inflammatory effects. Aspirin does not anti-infective or antiviral effects.

3. A group of nursing students are reviewing information about salicylates. The students demonstrate understanding of the information when they identify which of the following as a salicylate? Select all that apply.
   A) Ecotrin
   B) Bufferin
   C) Tylenol
   D) Dolobid
   E) Motrin
   Ans: A, B, D
   Feedback:
   Ecotrin (acetylsalicylic acid), Bufferin (magnesium salicylate), and Dolobid (diflunisal) are classified as salicylates. Tylenol is a nonsalicylate. Motrin is an NSAID.

4. A nursing instructor is preparing a class that will describe aspirin. Which of the following would the instructor include about aspirin's effects on platelets? Select all that apply.
   A) Aspirin increases platelet aggregation.
   B) Aspirin inhibits platelet aggregation.
   C) Aspirin shortens bleeding time.
   D) The effect of aspirin on platelets is irreversible.
   E) The effect of aspirin on platelets is reversible.
   Ans: B, D
   Feedback:
   Aspirin prolongs bleeding time by inhibiting the aggregation of platelets. The effect of aspirin on platelets is irreversible and lasts for the life of the platelet (7 to 10 days).

5. After administering diflunisal to a client, the nurse would be alert for which of the following as an adverse reaction? Select all that apply.
   A) Diarrhea
   B) Tarry stools
   C) Weight loss
   D) Heartburn
   E) Constipation
   Ans: B, C, D
   Feedback:
   A nurse monitoring a client taking a salicylate like diflunisal should monitor the client for adverse effects including gastric upset, heartburn, nausea, vomiting, anorexia, and GI bleeding (dark, tarry stools).

6. A nurse suspects that a client is developing salicylism. Which of the following would help confirm this suspicion? Select all that apply.
   A) Tinnitus
   B) Bradycardia
   C) Sweating
   D) Impaired vision
   E) Mental confusion
   Ans: A, C, E
   Feedback:
   Signs and symptoms of salicylism include dizziness; tinnitus; impaired hearing; nausea; vomiting; flushing; sweating; rapid, deep breathing; tachycardia; diarrhea; mental confusion; lassitude; drowsiness; respiratory depression; and coma (from large doses of salicylate).

7. A client is being discharged from the hospital on warfarin for atrial fibrillation. The client asks the nurse, "What can I use if I have a headache?" The nurse responds by telling the client that which of the following would be appropriate to use?
   A) Bufferin
   B) Tylenol
   C) Ecotrin
   D) Empirin
   Ans: B
   Feedback:
   Clients taking warfarin should avoid the use of salicylates (Bufferin, Ecotrin, and Empirin) and should be encouraged to use the nonsalicylate Tylenol (acetaminophen).

8. Foods containing salicylates may increase the risk of adverse reactions in clients receiving salicylates. The nurse recommends that a client avoid the intake of which of the following? Select all that apply.
   A) Turkey
   B) Pepper
   C) Paprika
   D) Tea
   E) Prunes
   Ans: C, D, E
   Feedback:
   Curry powder, paprika, licorice, prunes, raisins, and tea are foods that contain salicylates, therefore potentially increasing the risk for adverse reactions in clients receiving salicylate medications.

9. A nurse is conducting a presentation for a local community about salicylates and nonsalicylates. When describing aspirin and acetaminophen, which of the following properties would the nurse describe as these two drugs sharing? Select all that apply.
   A) Anti-inflammatory
   B) Analgesic
   C) Antipyretic
   D) Inhibition of prostaglandins
   E) Inhibition of platelet aggregation
   Ans: B, C
   Feedback:
   Acetaminophen has an unknown mechanism of action, has no anti-inflammatory properties, and does not inhibit prostaglandins or platelet aggregation; therefore, analgesic and antipyretic properties are the only properties that acetaminophen and aspirin share.

10. A nurse suspects that a client is experiencing acute acetaminophen toxicity based on assessment of which of the following? Select all that apply.
    A) Nausea
    B) Jaundice
    C) Hypertension
    D) Cardiac arrhythmias
    E) Confusion
    Ans: A, B, E
    Feedback:
    Signs of acute acetaminophen toxicity include nausea, vomiting, confusion, liver tenderness, hypotension, cardiac arrhythmias, jaundice, and acute hepatic and renal failure.

11. A nurse is administering a nonopioid analgesic to a client. Which of the following should the nurse perform during the ongoing assessment? Select all that apply.
    A) Reassess client's pain rating 30 to 60 minutes after drug administration.
    B) Assess joints for greater mobility.
    C) Check vital signs every 4 hours.
    D) Document pain severity, location, and intensity if pain persists.
    E) Assess the joints for decreased inflammation.
    Ans: A, B, C, D, E
    Feedback:
    During ongoing assessment the nurse monitors the client for pain relief; reassesses the client's pain rating every 30 to 60 minutes after drug administration; documents pain severity, location, and intensity if pain persists; checks vital signs every 4 hours; and assesses the joints for decreased inflammation and greater mobility.

12. Which of the following are important points for the nurse to cover when performing discharge teaching for a client receiving a salicylate? Select all that apply.
    A) Inform all health care providers of salicylate use.
    B) Discard salicylates if they smell like vinegar.
    C) Take salicylates with food.
    D) Store salicylates in the bathroom.
    E) Keep salicylate container closed tightly.
    Ans: A, B, C, E
    Feedback:
    The nurse should include the following in the discharge teaching for clients receiving salicylates: take the drug as prescribed, take the drug with food or milk and a full glass of water, inform all health care providers (including dentists) of salicylate use, discard salicylates that smell like vinegar, and store in a tightly closed container away from air, moisture, and heat. Salicylates should not be stored in the bathroom because the humidity can cause the drug to deteriorate.

13. A nurse should monitor a client taking nonopioid analgesics for gastrointestinal bleeding. Which of the following would indicate to the nurse that the client is experiencing this adverse reaction? Select all that apply.
    A) Abdominal distention
    B) Blood-streaked vomit
    C) Vomit that looks like coffee grounds
    D) Dark, tarry stools
    E) Bright red blood in stool
    Ans: A, B, C, D, E
    Feedback:
    Signs of gastrointestinal bleeding include abdominal pain or distention (especially any sudden increases); vomit that appears bright red, blood streaked, dark red, brown, black, or similar to the consistency of coffee grounds; or stools that appear black, loose, tarry, bright red, red streaked, or dark mahogany colored.

14. A client is prescribed diflunisal. The nurse understands that this drug is being used for which of the following?
    A) Reducing elevated body temperature
    B) Decreasing the risk of myocardial infarction
    C) Reducing the risk of transient ischemic attacks
    D) Relieving mild to moderate pain
    Ans: D
    Feedback:
    Diflunisal is used for relieving mild to moderate pain. Unlike other salicylates, diflunisal is not used as an antipyretic (reducing body temperature). It does not reduce the risk of transient ischemic attacks or decrease the risk of myocardial infarction.

15. A patient who has been prescribed aspirin wants to know more about willow bark as a substitute for aspirin. Which of the following would the nurse integrate into the response as an advantage of willow bark as compared to aspirin?
    A) Willow bark is ideal for patients with peptic ulcers.
    B) Willow bark works relatively quickly as compared to aspirin.
    C) Small amounts of willow bark produce a noticeable effect.
    D) Willow bark has fewer adverse reactions than other salicylates.
    Ans: D
    Feedback:
    Willow bark causes fewer adverse reactions than other salicylates. The nurse should inform the patient and family members that willow bark treatment should be given cautiously to patients with peptic ulcers. Willow bark takes more time to take effect, and it has to be given in large amounts to produce a significant effect.

16. A nurse is caring for a patient who is receiving a salicylate for pain relief. The nurse would assess the client for which of the following suggesting salicylism?
    A) Constipation
    B) Bradycardia
    C) Sleeplessness
    D) Flushing
    Ans: D
    Feedback:
    Flushing is one of the symptoms of salicylism that the nurse should monitor for. Tachycardia, not bradycardia, is a symptom of salicylism. Sleeplessness and constipation are not symptoms of salicylism.

17. A patient has taken a 15-gram (15,000-mg) dose of acetaminophen and is brought by her parents to the emergency department. As the dosage is relatively high, there is a chance of acute acetaminophen poisoning. Which of the following assessment findings would indicate acute acetaminophen toxicity?
    A) Hypotension
    B) High fever
    C) Sweating
    D) Rapid, deep breathing
    Ans: A
    Feedback:
    Hypotension is one of the signs of acute acetaminophen toxicity that the nurse should monitor for in the patient. High fever, sweating, and rapid, deep breathing are not symptoms generally associated with acute acetaminophen toxicity.

18. A nurse is administering acetaminophen to a client who has diabetes. Which of the following would be most important for the nurse to monitor?
    A) Arterial blood pH
    B) Blood pressure
    C) Blood glucose levels
    D) Blood creatinine levels
    Ans: C
    Feedback:
    When administering acetaminophen to diabetic patients, care needs to be taken when blood glucose testing is done because acetaminophen may alter blood glucose test results, causing falsely lower blood glucose values. Acetaminophen does not significantly alter pH level, blood pressure, or blood creatinine levels in a patient with diabetes.

19. A nurse would be especially alert for the development of liver failure in which client when administering acetaminophen?
    A) Client with diabetes
    B) Client who consumes alcohol habitually
    C) Client with hypertension
    D) Client with a urinary tract infection
    Ans: B
    Feedback:
    The risk of liver failure during acetaminophen therapy increases in clients who drink alcohol habitually. Clients with diabetes, high blood pressure, or urinary tract infections are not at a significantly greater risk for liver failure.

20. Which of the following points should a nurse include in the teaching plan for a patient who has been prescribed a nonopioid analgesic?
    A) Discontinue the dosage of the drug immediately if symptoms disappear.
    B) Take any over-the-counter (OTC) drug if pain increases.
    C) Contact physician if temperature remains high even after 3 days.
    D) Contact physician if severe or recurrent pain persists for more than 10 days.
    Ans: D
    Feedback:
    The nurse should instruct the patient to consult the primary health care provider if severe or recurrent pain persists for more than 10 days. No over-the-counter (OTC) drugs should be taken without first consulting the primary health care provider. If the drug is used to reduce fever, contact the primary health care provider if the temperature continues to remain elevated for more than 1 day, not 3 days.

21. Which of the following drugs is used to decrease the risk of myocardial infarction in patients with unstable angina or previous myocardial infarction?
    A) Aspirin
    B) Diflunisal
    C) Magnesium salicylate
    D) Acetaminophen
    Ans: A
    Feedback:
    Aspirin is used to decrease the risk of myocardial infarction in patients with unstable angina or previous myocardial infarction. Diflunisal, magnesium salicylate, and acetaminophen do not significantly decrease the risk of myocardial infarction.

22. A nurse understands that aspirin would be contraindicated in a child with which of the following?
    A) Liver dysfunction
    B) High blood pressure
    C) Diabetes
    D) Chickenpox
    Ans: D
    Feedback:
    Children or teenagers with influenza or chickenpox should not take salicylates, particularly aspirin, because their use appears to be associated with Reye's syndrome, a life-threatening condition characterized by vomiting and lethargy progressing to coma. Even though salicylates need to be administered with caution in patients with hepatic dysfunction, high blood pressure, and diabetes, their use does not lead to Reye's syndrome.

23. Which of the following interventions should a nurse perform for a patient who is experiencing gastric upset while taking magnesium salicylate?
    A) Administer the drug with orange juice.
    B) Include fiber-rich food in the patient's diet.
    C) Administer antacids to minimize GI distress.
    D) Ensure drug is given at least 3 hours before meals.
    Ans: C
    Feedback:
    The nurse may administer antacids to minimize GI distress. Instead of orange juice, the nurse may administer the drug with milk to alleviate gastric upset. The nurse can also administer the drug with food to relieve gastric upset instead of giving the drug 3 hours before a meal. Including fiber-rich food in the patient's diet will not significantly relieve gastric upset.

24. While obtaining the medication history, a client tells the nurse that he takes acetaminophen every day. The nurse questions the client about the amount of the drug he takes in each dose and how many times a day he takes the drug based on the understanding that the total daily dose should be no greater than which amount?
    A) 2 grams
    B) 4 grams
    C) 6 grams
    D) 8 grams
    Ans: B
    Feedback:
    The maximum daily dose of acetaminophen should not exceed 4 grams.

25. A client with edema is receiving a loop diuretic. The client is also receiving acetaminophen for mild pain. The nurse would assess the client for which of the following?
    A) Increasing edema
    B) Bone pain
    C) Gastric upset
    D) Diarrhea
    Ans: A
    Feedback:
    When loop diuretics are given in conjunction with acetaminophen, the effectiveness of the loop diuretic is decreased. Therefore, the nurse would need to assess the client for evidence of increasing edema. Bone pain, gastric upset, and diarrhea are not associated with this combination.

26. A client is scheduled for outpatient surgery. When performing the preoperative teaching with the client, the nurse would instruct the client to avoid taking any salicylates for at least how many days before the surgery?
    A) 3
    B) 5
    C) 7
    D) 10
    Ans: C
    Feedback:
    The patient should be instructed to avoid salicylates for at least 1 week before any type of major or minor surgery, including dental surgery, because of the possibility of postoperative bleeding.

27. A nurse is developing a plan of care for a client with advanced rheumatoid arthritis who is experiencing moderate pain in the knees and hips. The client also has some deformities that make walking and moving about difficult. The primary health care provider has prescribed diflunisal. Which nursing diagnosis would be most appropriate for this client? Select all that apply.
    A) Acute Pain
    B) Impaired Physical Mobility
    C) Ineffective Self Health Management
    D) Deficient Knowledge
    E) Imbalanced Nutrition: Less Than Body Requirements
    Ans: A, B
    Feedback:
    Based on the situation, appropriate nursing diagnoses would include Acute Pain and Impaired Physical Mobility. There is no indication that the client is having difficulty managing the medication therapy, has a lack of knowledge about the medication, or is experiencing problems with nutrition.

28. A group of nursing students are reviewing information about the actions of aspirin. The students demonstrate understanding of the information when they identify which action as being responsible for reducing fever?
    A) Inhibition of prostaglandins
    B) Dilation of peripheral blood vessels
    C) Inhibition of platelet aggregation
    D) Reduction in endorphins
    Ans: B
    Feedback:
    Salicylates lower body temperature by dilating peripheral blood vessels. The blood flows out to the extremities, resulting in the dissipation of the heat of fever, which in turn cools the body. Prostaglandin inhibition occurs with pain relief and is responsible for the drug's anti-inflammatory effects. Inhibition of platelet aggregation results in prolonged bleeding times and increases the risk of bleeding.

29. A nurse is reviewing the medication history for a client who is to receive salicylate therapy. Which of the following if noted by the nurse would lead the nurse to closely monitor the client for salicylism?
    A) Antacids
    B) Anticoagulants
    C) Carbonic anhydrase inhibitors
    D) Activated charcoal
    Ans: C
    Feedback:
    The use of carbonic anhydrase inhibitors, used to lower intraocular pressure, along with salicylates places the client at increased risk for salicylism. Combined use of anticoagulants and salicylates increases the client's risk for bleeding. Combined use of antacids with salicylates decreases the absorption of the salicylates. Combined use of activated charcoal with salicylates causes a decrease in the effects of salicylates.

30. A client has had minor surgery and asks the nurse what he can use for pain. Which of the following would be most appropriate for the nurse to suggest?
    A) Aspirin
    B) Diflunisal
    C) Magnesium salicylate
    D) Acetaminophen
    Ans: D
    Feedback:
    After minor or major surgery, the client should avoid salicylates to reduce the risk for bleeding and use acetaminophen for pain control.

1. When describing the properties of ibuprofen to a group of individuals attending a community health promotion presentation, the nurse would integrate knowledge of which of the following? Select all that apply.
   A) Anti-inflammatory
   B) Analgesic
   C) Antipruritic
   D) Antipyretic
   E) Antibacterial
   Ans: A, B, D
   Feedback:
   Like the salicylates, the NSAIDS have anti-inflammatory, antipyretic, and analgesic effects. They do not exert antipruritic or antibacterial properties.

2. A group of nursing students are reviewing NSAIDs. The students demonstrate understanding of this drug class when they identify which of the following as an NSAID? Select all that apply.
   A) Eletriptan (Relpax)
   B) Aspirin (Ecotrin)
   C) Meloxicam (Mobic)
   D) Acetaminophen (Tylenol)
   E) Ibuprofen (Motrin)
   Ans: C, E
   Feedback:
   Ibuprofen and meloxicam are both classified as NSAIDs. Aspirin is a salicylate, acetaminophen is a nonsalicylate, and eletriptan is a serotonin receptor agonist.

3. A nurse is describing the actions of NSAIDs to a client. Which of the following would the nurse integrate into the description as a mechanism by which NSAIDs elicit their effects? Select all that apply.
   A) Inhibition of prostaglandins
   B) Inhibition of cyclooxygenase-1
   C) Synthesis of cyclooxygenase-2
   D) Synthesis of cyclooxygenase-3
   E) Inhibition of platelet aggregation
   Ans: A, B, C
   Feedback:
   NSAIDs exert their effects by inhibition of prostaglandin synthesis via inhibition of cyclooxygenase-1 and -2.

4. A nurse would expect to administer prescribed NSAIDs as part of the treatment plan for clients with which conditions? Select all that apply.
   A) Osteoarthritis
   B) Fever
   C) Rheumatoid arthritis
   D) Severe postoperative pain
   E) Primary dysmenorrhea
   Ans: A, B, C, E
   Feedback:
   NSAIDs are used to treat fever and the mild to moderate pain that may be associated with osteoarthritis, rheumatoid arthritis, and primary dysmenorrhea. Severe postoperative pain would most likely require an opioid analgesic.

5. A nurse is providing care to a client who is receiving NSAIDs. The nurse would be especially alert for which of the following? Select all that apply.
   A) Oliguria
   B) Dysuria
   C) Hematuria
   D) Glucosuria
   E) Polyuria
   Ans: A, B, C, E
   Feedback:
   Clients receiving NSAIDs should be monitored for the following renal adverse effects: polyuria, dysuria, oliguria, hematuria, cystitis, elevated BUN, and acute renal failure.

6. A nurse is performing discharge teaching for a client who is prescribed ibuprofen. After teaching the client about the possible cardiovascular effects of the drug, the nurse determines that additional teaching is needed when the client states which of the following?
   A) "My blood pressure may increase."
   B) "My blood pressure won't change."
   C) "I could develop congestive heart failure."
   D) "I could experience a heart attack."
   Ans: B
   Feedback:
   The client should be counseled that NSAIDs including ibuprofen may result in the following cardiovascular effects: increased or decreased blood pressure, congestive heart failure, cardiac arrhythmias, and myocardial infarction.

7. A nurse informs a client who is prescribed meloxicam that he might experience visual disturbances. The client asks the nurse what types of visual disturbances may occur. Which of the following would the nurse include in the response? Select all that apply.
   A) Double vision
   B) Irreversible loss of color vision
   C) Sensitivity to light
   D) Blurred vision
   E) Halos around objects
   Ans: A, C, D
   Feedback:
   The nurse should tell the client that NSAIDs like meloxicam can cause visual disturbances including blurred or diminished vision, double vision, swollen or irritated eyes, photophobia, and reversible loss of color vision.

8. After teaching a group of students about NSAIDs and their uses, the instructor determines that additional teaching is needed when the students identify which of the following as being used to treat osteoarthritis or rheumatoid arthritis? Select all that apply.
   A) Sulindac (Clinoril)
   B) Ketorolac (Toradol)
   C) Piroxicam (Feldene)
   D) Mefenamic (Ponstel)
   E) Oxaprozin (Daypro)
   Ans: B, D
   Feedback:
   Ketorolac and mefenamic are NSAIDs that are not used to treat osteoarthritis or rheumatoid arthritis.

9. A nurse is reviewing the medical records of several clients. In which of the following clients would the nurse identify that the use of an NSAID would be contraindicated? Select all that apply.
   A) A female client who is lactating
   B) A female client with a hypersensitivity to aspirin
   C) A female client in the first trimester of pregnancy
   D) A female client in the second trimester of pregnancy
   E) A female client in the third trimester of pregnancy
   Ans: A, B, E
   Feedback:
   NSAIDs are contraindicated in clients with a hypersensitivity to aspirin. In general, NSAIDs are contraindicated during the third trimester of pregnancy (because they can induce labor) and during lactation.

10. A nurse is teaching a client who is prescribed sumatriptan about the possible adverse reactions associated with the drug. The nurse determines that the teaching was successful when the client identifies which of the following as most common? Select all that apply.
    A) Flushing
    B) Bradycardia
    C) Dry mouth
    D) Impaired vision
    E) Fatigue
    Ans: A, C, E
    Feedback:
    The most common adverse reactions associated with the selective serotonin agonists like sumatriptan (Imitrex) include dizziness, nausea, fatigue, pain, dry mouth, and flushing.

11. Which of the following would a nurse integrate into the explanation for a client about the mechanism of action for almotriptan? Select all that apply.
    A) Vasoconstriction
    B) Vasodilation
    C) Decreased neurotransmission
    D) Increased neurotransmission
    E) Inhibition of prostaglandin synthesis
    Ans: A, C
    Feedback:
    Selective serotonin agonists like almotriptan (Axert) exert their effects by causing vasoconstriction and decreased neurotransmission.

12. The nurse would question an order for a selective serotonin agonist as treatment for a migraine headache for a client with which condition? Select all that apply.
    A) Diabetes
    B) Uncontrolled hypertension
    C) Angina
    D) Hyperlipidemia
    E) Transient ischemic attacks
    Ans: B, C, E
    Feedback:
    5-HT agonists should not be used in patients with ischemic heart disease (such as angina or myocardial infarction), transient ischemic attacks (TIA), uncontrolled hypertension, or those patients taking monoamine oxidase inhibitor (MAOI) antidepressants.

13. Prior to administering an NSAID to a client, the nurse should obtain which of the following? Select all that apply.
    A) History of allergies
    B) Pain assessment
    C) Current medical conditions
    D) Past medical conditions
    E) Vital signs
    Ans: A, B, C, D, E
    Feedback:
    Before administering an NSAID, the nurse should obtain a history of allergies and past medical conditions. Other preadministration assessment includes pain, current medical conditions and vital signs.

14. A client is prescribed tolmetin to be taken at home. The nurse would instruct the client to monitor for which of the following? Select all that apply.
    A) Dark, tarry stools
    B) Jaundice
    C) Hot, dry, flushed skin
    D) Increased urine output
    E) Unusual or prolonged bleeding
    Ans: A, C, E
    Feedback:
    The nurse should instruct the client or caregiver to monitor for dark, tarry stools; hot, dry, flushed skin; decreased urine output; and unusual or prolonged bleeding.

15. A client who is receiving ibuprofen asks the nurse, "What should I take the drug with?" Which of the following would the nurse suggest in the response? Select all that apply.
    A) Milk
    B) Orange juice
    C) Food
    D) Clear liquids
    E) Antacids
    Ans: A, C, E
    Feedback:
    The nurse should advise the patient to take ibuprofen (Motrin) with food, milk, or antacids.

16. A nurse is reviewing the medical record of a client who is diagnosed with migraine headaches. The history also reveals that the client has phenylketonuria. Which of the following would the nurse least expect to be prescribed as treatment for the client's migraine headaches? Select all that apply.
    A) Rizatriptan (Maxalt)
    B) Almotriptan (Axert)
    C) Eletriptan (Relpax)
    D) Sumatriptan (Imitrex)
    E) Zolmitriptan (Zomig)
    Ans: A, E
    Feedback:
    Rizatriptan (Maxalt) and zolmitriptan (Zomig) are not used as treatment for migraines in a client with phenylketonuria because both medications contain phenylalanine.

17. A nursing instructor is preparing a class discussion on the use of NSAIDs and interactions with other drugs. The instructor would emphasize that the effects of which of the following can increase with NSAID therapy? Select all that apply.
    A) Lithium
    B) Cyclosporine
    C) Furosemide
    D) Lisinopril
    E) Phenytoin
    Ans: A, B, E
    Feedback:
    The use of NSAIDs can increase the effectiveness of lithium, cyclosporine, and phenytoin, possibly leading to toxicity.

18. After teaching a client receiving NSAID therapy about the drug, the nurse determines that the teaching was successful when the client identifies the need to notify the primary health care provider for which of the following? Select all that apply.
    A) Skin rash
    B) Visual disturbances
    C) Edema
    D) Chest pain
    E) Diarrhea
    Ans: A, B, C, D, E
    Feedback:
    The client should notify the primary health care provider if any of the following adverse reactions occur: skin rash, itching, visual disturbances, weight gain, edema, diarrhea, black stools, nausea, vomiting, chest or leg pain, numbness, or persistent headache.

19. A client is prescribed frovatriptan. Which of the following would the nurse expect to include in the client's teaching plan? Select all that apply.
    A) Frovatriptan is used to prevent migraines.
    B) Frovatriptan should be administered at the earliest onset of migraine symptoms.
    C) Frovatriptan will decrease the number of migraine headaches experienced.
    D) No more than two doses of the drug should be used in a 24-hour period.
    E) The dose of frovatriptan may be repeated every hour until symptoms subside.
    Ans: B, D
    Feedback:
    Frovatriptan does not prevent migraines or reduce the number of migraines. It should be taken at the earliest onset of migraine symptoms and the dose may be repeated one time after 1 hour if no relief is obtained. The client should never take more than two doses of frovatriptan in a 24-hour period.

20. A nurse is preparing to administer NSAID therapy to a client. The nurse would be alert to a decrease in the effectiveness of which drug if given together? Select all that apply.
    A) Lithium
    B) Cyclosporine
    C) Furosemide
    D) Lisinopril
    E) Phenytoin
    Ans: C, D
    Feedback:
    The use of NSAIDs can decrease the effectiveness of furosemide and lisinopril, possibly leading to increased edema or increased blood pressure.

21. A nurse is preparing a presentation for a local community group about over-the-counter analgesics, including NSAIDs. Which of the following would the nurse integrate into the presentation as a serious risk with this class of drugs?
    A) Increased granulocyte count
    B) Cardiovascular thrombosis
    C) Increased WBC count
    D) Sickle cell anemia
    Ans: B
    Feedback:
    A serious risk involved with the use of NSAIDs is cardiovascular thrombosis. Increased granulocyte count, increased WBC count, or sickle cell anemia is not caused by NSAIDs. Sickle cell anemia results from an inherited abnormality of hemoglobin. NSAIDs may cause decreased granulocyte count, decreased WBC count, or aplastic anemia.

22. A nurse is caring for a client who is hospitalized with arthritis. Celecoxib is prescribed. The nurse reviews the client's medical record for which of the following that would contraindicate the use of this drug?
    A) Allergy to sulfonamides
    B) Diabetic retinopathy
    C) Cataract
    D) Acute gout
    Ans: A
    Feedback:
    Celecoxib is contraindicated among clients with allergy to sulfonamides. Ethambutol is contraindicated in clients with diabetic retinopathy and clients with cataracts. Pyrazinamide is contraindicated among clients with acute gout.

23. A nurse is providing care to a client with arthritis in several large weight-bearing joints who is receiving NSAID therapy. Which nursing diagnosis would be most likely?
    A) Risk for Unstable Blood Glucose Levels
    B) Impaired Gas Exchange
    C) Risk for Imbalanced Body Temperature
    D) Impaired Physical Mobility
    Ans: D
    Feedback:
    The client has arthritis and is receiving NSAID therapy most likely for pain relief and reduction of inflammation. The affected joints would interfere with the client's mobility. Therefore, Impaired Physical Mobility would be most appropriate. There is no indication that the client has diabetes, respiratory problems, or fever. Therefore, the other nursing diagnoses would be inappropriate.

24. A nurse is caring for a client who is required to take NSAIDS on an outpatient basis. Which of the following would the nurse include in the teaching plan for the client and family?
    A) Take aspirin if necessary strictly with a full glass of water.
    B) Use the drug on a very regular basis during treatment.
    C) Call your primary care provider if you have no relief after 2 weeks.
    D) Take the drugs strictly with a glass of milk or juice.
    Ans: C
    Feedback:
    The nurse should instruct the patient to consult the primary health care provider if the pain, swelling, inflammation, or tenderness is not relieved after 2 weeks. The drug takes several days to relieve the discomfort, so it is important for the patient to give the drug time to work. The nurse should instruct the patient to avoid the use of aspirin. The drug should be taken with a full glass of water or with food. It is not necessary to take NSAIDs strictly with a glass of juice or milk. These drugs are not to be used on a regular basis unless the patient is strictly instructed to do so by the primary health care provider.

25. A nurse caring for a client who is receiving an NSAID for fever reduction documents a decrease in urinary output for the patient. Which of the following would the nurse most likely determine as the reason for the patient's condition?
    A) Prolonged immobility
    B) Reduced intake of fibrous food
    C) Intake of food with antacids
    D) Prolonged temperature elevation
    Ans: D
    Feedback:
    If temperature elevation is prolonged while on NSAID therapy, hot, dry, flushed skin and a decrease in urinary output may develop; consequently, dehydration can occur. Prolonged immobility, reduced intake of fibrous food, and intake of food with antacids do not cause a decrease in urinary output.

26. A client comes to the clinic complaining of muscle aches and asks the nurse about using an over-the-counter NSAID. The client tells the nurse that he takes a medication to control his high blood pressure. The nurse cautions the client against using an NSAID while on antihypertensive drug therapy for which reason?
    A) It increases the metabolism of the antihypertensive drug.
    B) It increases absorption of the antihypertensive drug.
    C) It decreases the effectiveness of the antihypertensive drug.
    D) It decreases the metabolism of NSAIDs.
    Ans: C
    Feedback:
    The nurse should inform the patient that taking an NSAID while on antihypertensive drug therapy decreases the effectiveness of antihypertensive drugs. Interactions of NSAIDs and antihypertensive drugs do not include increased metabolism of antihypertensive drugs, increased absorption of antihypertensive drugs, or decreased metabolism of NSAIDs.

27. After teaching a client about his prescribed NSAID therapy, the nurse determines that the teaching was successful when the client states which of the following?
    A) "I will take the drug with high-fiber foods."
    B) "I must take the drug on an empty stomach."
    C) "I should take the drug with food and milk."
    D) "I need to take it with a calcium supplement."
    Ans: C
    Feedback:
    The client should take the drug with food and milk to promote an optimal response to NSAID therapy; this helps minimize the risk of GI effects. The client does not need to take an NSAID with fiber-rich food or with calcium supplements. He should not take it on an empty stomach.

28. A 60-year-old client with rheumatoid arthritis visits the health care facility for a regular checkup. The client informs the nurse that he has been using an over-the-counter NSAID for the last few days. The nurse cautions the client about the use of NSAIDs on a long-term basis because of the increased risk for which of the following?
    A) Ulcer disease
    B) CNS disorders
    C) Hearing impairment
    D) Blindness
    Ans: A
    Feedback:
    Age appears to increase the possibility of adverse reactions to NSAIDs. The risk of serious ulcer disease in adults older than 65 years is increased with higher doses of NSAIDs. CNS disorders, hearing impairment, and blindness are not effects associated with using NSAIDs on a long-term basis in older clients.

29. When discussing effective pain management with a group of nursing students, the instructor would include barriers that need to be overcome. Which of the following would the instructor most likely include? Select all that apply.
    A) Pharmacists do not provide an adequate supply of pain medication.
    B) Primary health care providers prescribe improper pain medicine doses.
    C) Nurses do not administer adequate medication for pain relief.
    D) Clients do not report accurate levels of pain.
    E) Clients have misperceptions about receiving pain medication.
    Ans: B, C, D
    Feedback:
    The main barriers a nurse must overcome to obtain effective pain management in a client are primary health care providers who do not prescribe proper pain medicine doses, nurses who do not administer adequate medication for pain relief, and clients who do not report accurate levels of pain.

30. A nurse is assessing a client's pain. When reporting the assessment findings to the primary health care provider to ensure the proper prescription for analgesic therapy for effective pain management, which of the following would be most important for the nurse to report? Select all that apply.
    A) Duration
    B) Aggravating factors
    C) Location
    D) Remitting factors
    E) Intensity
    Ans: C, E
    Feedback:
    Although duration, aggravating and remitting factors, location, and intensity are important to assess, to ensure that the primary health care provider prescribes effective analgesics for pain management, the nurse needs to report two key assessments about pain: location and intensity.

31. A nurse is assessing pain in a 3-year-old child. Which of the following would be most appropriate for the nurse to use? Select all that apply.
    A) Number scale
    B) Color scale
    C) Letter scale
    D) Facial expression scale
    E) Shape scale
    Ans: B, D
    Feedback:
    Color and facial expression scales are especially helpful with children who have trouble understanding or cannot tell the nurse about their pain using numbers.

1. When describing opioid analgesics to a group of nursing students, the instructor would expect to include which classifications? Select all that apply.
   A) An agonist
   B) A partial agonist
   C) A partial antagonist
   D) An antagonist
   E) An agonist-antagonist
   Ans: A, B, E
   Feedback:
   An opioid analgesic may be classified as an agonist, partial agonist, and agonist-antagonist.

2. A nurse assesses a client for common adverse reactions of opioids. Which of the following would the nurse identify? Select all that apply.
   A) Respiratory depression
   B) Diarrhea
   C) Mydriasis
   D) Constipation
   E) Miosis
   Ans: A, D, E
   Feedback:
   Respiratory depression, miosis, and constipation are examples of common adverse reactions seen with the use of opioids.

3. A nurse would expect to administer opioid analgesics primarily for the client with which of the following? Select all that apply.
   A) Severe acute pain
   B) Mild acute pain
   C) Moderate chronic pain
   D) Mild chronic pain
   E) Opioid dependence
   Ans: A, C, E
   Feedback:
   Opioid analgesics are used primarily for the treatment of moderate to severe acute pain and chronic pain and in the treatment and management of opiate dependence.

4. A nurse should be aware of contraindications to the use of opioids to help decrease the likelihood of adverse reactions. The nurse understands that opioids would be contraindicated in which client? Select all that apply.
   A) A client with acute bronchial asthma
   B) A client with an acute myocardial infarction
   C) A client with a head injury
   D) A client with grand mal seizures
   E) A client with mild renal impairment
   Ans: A, C, D
   Feedback:
   The use of opioids is contraindicated in clients with acute bronchial asthma, emphysema, upper airway obstruction, head injury, increased intracranial pressure, convulsive disorders, severe renal or hepatic dysfunction, and acute ulcerative colitis.

5. Prior to the administration of an opioid analgesic, the nurse should obtain which information from the client? Select all that apply.
   A) Pain assessment
   B) Allergy history
   C) Health history
   D) Past medication history
   E) Current medication therapy
   Ans: A, B, C, D, E
   Feedback:
   Prior to the administration of an opioid analgesic, the nurse should obtain information about the following: pain assessment, allergy history, health history, and past and current medication therapy.

6. A client is prescribed oxymorphone. The client is also receiving promethazine. The nurse would carefully monitor which of the following? Select all that apply.
   A) Temperature
   B) Blood pressure
   C) Pulse
   D) Respiratory rate
   E) Blood glucose
   Ans: B, C, D
   Feedback:
   The nurse should take care to closely monitor a client's blood pressure, pulse, and respiratory rate when oxymorphone is administered with promethazine.

7. A nurse is assessing a client receiving an opioid as treatment for diarrhea. The nurse would notify the primary health care provider immediately if which of the following occur? Select all that apply.
   A) Constipation
   B) Blood noted in the stool
   C) Worsening of diarrhea
   D) Report of severe abdominal pain
   E) Diarrhea unrelieved
   Ans: B, C, D, E
   Feedback:
   A nurse monitoring a client taking an opioid for diarrhea should notify the physician immediately if diarrhea is not relieved or becomes worse, if the client has severe abdominal pain, or if blood in the stool is noted.

8. A nurse is administering an opioid analgesic to a client with severe chronic pain. The nurse understands that the rate of tolerance to an opioid analgesic's effects varies from client to client. The nurse identifies which of the following as affecting the rate at which tolerance develops? Select all that apply.
   A) Body weight
   B) Gender
   C) Dosage
   D) Route of administration
   E) Age
   Ans: C, D
   Feedback:
   The rate at which tolerance to an opioid analgesic develops varies according to dosage, the route of administration, and the individual.

9. A client is receiving an opioid analgesic. Assessment reveals that his respiratory rate has dropped. Which of the following would the nurse expect to implement? Select all that apply.
   A) Oxygen administration
   B) Coaching of the client to breathe
   C) Discontinuation of the opioid analgesic
   D) Naloxone administration
   E) Albuterol administration
   Ans: B, D
   Feedback:
   Coaching the client to breathe and administering naloxone (in severe cases) are appropriate measures used to treat a drop in respiratory rate in a client receiving an opioid analgesic. Oxygen would have little effect if the client's rate has dropped. The opioid would not be discontinued. Albuterol would be used if the client was experiencing bronchospasms.

10. A nurse would expect that epidural administration of opioid analgesics is reserved for which of the following? Select all that apply.
    A) Labor pain
    B) Support of anesthesia
    C) Postoperative pain
    D) Moderate acute pain
    E) Intractable chronic pain
    Ans: A, C, E
    Feedback:
    Epidural administration of opioid analgesics is reserved for postoperative pain, labor pain, and intractable chronic pain.

11. A group of nursing students are reviewing information about epidural pain management with opioid analgesics. The students demonstrate understanding of the information when they identify which of the following as an advantage over other routes of administration? Select all that apply.
    A) Longer time to tolerance development
    B) Lower total dose of opioid
    C) Fewer adverse reactions
    D) Greater client comfort
    E) Decreased demand on nursing staff
    Ans: B, C, D
    Feedback:
    Epidural administration offers several advantages over other routes of administration for opioid analgesics, including lower total dosages of the drug used, fewer adverse reactions, and greater client comfort.

12. A nurse is assessing a client who is to receive an opioid analgesic. The nurse would contact the primary health care provider immediately if which of the following occur? Select all that apply.
    A) Respiratory rate of less than 10 breaths/min
    B) Decrease in pulse
    C) Increase in pulse
    D) Increase in blood pressure
    E) Blood pressure of 90/65 mm Hg
    Ans: A, B, C, E
    Feedback:
    The nurse should contact the primary health care provider immediately if any of the following occur while a client is receiving an opioid analgesic: significant decrease in respiratory rate or a respiratory rate less than 10 breaths/min; significant increase or decrease in the pulse rate or a change in the pulse quality; or significant decrease in blood pressure or a systolic blood pressure below 100 mm Hg.

13. A postoperative client has a nursing diagnosis of Ineffective Breathing Pattern and is fearful that movement may result in more pain. Which of the following would be most appropriate for the nurse to do? Select all that apply.
    A) Get the client out of bed.
    B) Have the client do deep breathing.
    C) Encourage the client to lie still in bed.
    D) Get the client to cough every 2 hours.
    E) Administer more pain medication.
    Ans: A, B, D
    Feedback:
    The client taking an opioid may be fearful that exercise will cause more pain. To help overcome this fear, the nurse should get the client out of bed and encourage therapeutic activities, such as deep breathing, coughing, and leg exercises (when ordered). Having the client lie still in bed and giving more pain medication would be inappropriate.

14. To decrease the risk of injury to a client taking an opioid, which action would be most appropriate? Select all that apply.
    A) Keep the lights in the client's room turned down.
    B) Assist the client from the bed to the toilet.
    C) Assist the client with rising from a lying position.
    D) Assist the client with hall-walking activities.
    E) Advise the client to stay in bed all night.
    Ans: B, C, D
    Feedback:
    To decrease the risk of injury to a client taking an opioid, the nurse should assist the client with ambulatory activities and with rising from a sitting or lying position. The nurse should also keep the client's room well lit during daytime hours, keep the client's room free of clutter, and advise the client to seek assistance when getting out of bed at night.

15. A nurse is caring for a newborn. The newborn's mother is suspected to be opioid dependent. When assessing the newborn, which of the following would alert the nurse to the possibility of withdrawal? Select all that apply.
    A) Jaundice
    B) Increased respiratory rate
    C) Decreased respiratory rate
    D) Sneezing
    E) Fever
    Ans: B, D, E
    Feedback:
    Opiate withdrawal symptoms in a newborn usually appear during the first few days of life and include irritability, excessive crying, yawning, sneezing, increased respiratory rate, tremors, fever, vomiting, and diarrhea.

16. A nurse is working at a substance abuse clinic. The nurse would expect which of the following to be used in the treatment and management of opioid dependence? Select all that apply.
    A) Fentanyl (Duragesic)
    B) Methadone (Dolophine)
    C) Propoxyphene (Darvon)
    D) Levomethadyl (Orlaam)
    E) Oxycodone (OxyContin)
    Ans: B, D
    Feedback:
    Levomethadyl and methadone are the two opiates used in the treatment and management of opiate dependence.

17. Which of the following would alert the nurse to suspect that a client is experiencing intermediate manifestations of abstinence syndrome? Select all that apply.
    A) Rhinorrhea
    B) Increased blood pressure
    C) Tachycardia
    D) Mydriasis
    E) Miosis
    Ans: C, D
    Feedback:
    Intermediate symptoms of abstinence syndrome include mydriasis, tachycardia, twitching, tremor, restlessness, irritability, anxiety, and anorexia.

18. A nurse is reviewing the differences between opioid agonists and opioid agonist-antagonists. The nurse correctly identifies which of the following as an opioid agonist-antagonist? Select all that apply.
    A) Alfentanil (Alfenta)
    B) Buprenorphine (Buprenex)
    C) Meperidine (Demerol)
    D) Nalbuphine (Nubain)
    E) Pentazocine (Talwin)
    Ans: B, D, E
    Feedback:
    Opioid agonist-antagonists include buprenorphine, butorphanol, nalbuphine, and pentazocine.

19. A nurse is caring for a client who is prescribed an opioid analgesic by her primary health care provider. Which assessment finding would lead the nurse to suspect that the client is experiencing an adverse reaction?
    A) Decreased intracranial pressure
    B) Increased breathing rate
    C) Tachycardia
    D) Urinary frequency
    Ans: C
    Feedback:
    The nurse should monitor the client for tachycardia, increased intracranial pressure, depressed breathing rate, and urinary retention as possible adverse reactions.

20. A nurse is to administer a prescribed opioid to a client. Which of the following conditions should the nurse confirm in the client to ensure that opioid therapy is not contraindicated in this client?
    A) Client does not have acute bronchial asthma.
    B) Client does not have acute diabetic retinopathy.
    C) Client does not have acute pre-existing liver disease.
    D) Client does not have decreased intracranial pressure.
    Ans: A
    Feedback:
    Opioid therapy is contraindicated in clients with acute bronchial asthma; therefore, the nurse should confirm that the client does not have this condition before administering opioid therapy. Opioid therapy is not known to be contraindicated in clients with diabetic retinopathy and pre-existing liver disease. Opioid therapy is contraindicated in clients with increased, not decreased, intracranial pressure.

21. A client is prescribed an opioid analgesic. The initial interview reveals that the client chronically drinks alcohol. The nurse would assess the client for which of the following as a possible interaction between the opioid analgesic and alcohol?
    A) Respiratory depression
    B) Central nervous system depression
    C) Hypotension
    D) Sedation
    Ans: B
    Feedback:
    The nurse should monitor the client for central nervous system depression. The nurse need not monitor the client for respiratory depression, hypotension, or sedation because these are the effects of the interaction of opioid analgesics with barbiturates, not alcohol.

22. A nurse is assigned to care for a client who has been prescribed an opioid analgesic. Which of the following activities should the nurse perform as part of the preadministration assessment?
    A) Document description of pain and an estimate of when the pain began.
    B) Obtain client's blood pressure and pulse within 5 to 10 minutes.
    C) Monitor the client for symptoms of respiratory depression.
    D) Record each bowel movement and its appearance, color, and consistency.
    Ans: A
    Feedback:
    The nurse should document the description of pain and an estimate of when the pain began as part of the preadministration assessment. Obtaining blood pressure and pulse within 5 to 10 minutes, monitoring the client for symptoms of respiratory depression, and recording bowel movements are part of the ongoing assessments conducted by the nurse when caring for the client. The nurse obtains the blood pressure, pulse and respiratory rate, and pain rating in 5 to 10 minutes if the drug is given intravenously (IV). Respiratory depression occurs in clients who do not use opioids routinely and are being given an opioid drug for acute pain relief or surgical procedures. When an opiate is used as an antidiarrheal drug, the nurse records each bowel movement, as well as its appearance, color, and consistency.

23. A nurse is caring for a client with pain caused by terminal illness. The primary care provider has prescribed an opioid for the client. The nurse would be alert for the development of which of the following?
    A) Emphysema
    B) Alopecia
    C) Dehydration
    D) Severe anorexia
    Ans: D
    Feedback:
    The nurse should monitor the client for severe anorexia, which is one of the adverse reactions of opioid analgesics on the GI system. Other adverse effects on the GI system include constipation, nausea, and acute abdominal pain. The nurse need not monitor the client for emphysema, alopecia, or severe headache. Opioid analgesics do not cause emphysema, but their administration is contraindicated in clients who have this condition. Administration of opioid analgesics is not known to cause alopecia or dehydration in clients.

24. A nurse has administered an opioid to a client. Which of the following would the nurse do if the client shows a decrease in respirations?
    A) Monitor and encourage the client to cough and breathe deeply every 2 hours.
    B) Instruct the client to restrict his consumption of liquids.
    C) Instruct the client to take complete bed rest.
    D) Instruct the client to avoid any kind of exercise.
    Ans: A
    Feedback:
    The nurse should encourage the client to cough and breathe deeply every 2 hours if the client shows a decrease in respirations after the administration of opioid analgesics. The nurse need not instruct the client to restrict his consumption of liquids to help him cope with the effects of an ineffective breathing pattern. The nurse should perform tasks such as getting the client out of bed and encouraging therapeutic activities such as leg exercises (when ordered); therefore, the nurse should not instruct the client to avoid any kind of exercise or to take complete bed rest.

25. A nurse is caring for a client who has been prescribed an opioid. Which of the following would the nurse include in the ongoing assessment?
    A) Review the client's health history.
    B) Review the client's allergy history.
    C) Inquire about the pain experienced by the client.
    D) Review the client's past and current drug therapies.
    Ans: C
    Feedback:
    As part of the ongoing assessment, the nurse should inquire about the pain experienced by the client and believe the client and family in their reports of pain. The nurse must exercise good judgment because not all changes in pain type, location, or intensity require notifying the primary health care provider. The nurse has to review the client's health and allergy history and the client's past and current drug therapies as part of the preadministration assessment, which is conducted before the administration of the drug, not after.

26. A nurse is caring for a client with chronic pain who has been prescribed epidural analgesia. The nurse monitors the client for which of the following after insertion of the epidural catheter and throughout the therapy?
    A) Abdominal pain
    B) Respiratory depression
    C) Fever
    D) Nervousness
    Ans: B
    Feedback:
    The most serious adverse reaction associated with the epidurally administered opioids is respiratory depression. The nurse should closely monitor the client for respiratory depression after insertion of the epidural catheter and throughout the therapy. Clients using epidural analgesics for chronic pain are monitored for respiratory problems with an apnea monitor. The client may also experience sedation, confusion, nausea, pruritus, or urinary retention. The nurse need not monitor the client for abdominal pain, fever, and nervousness because they do not occur as a result of the administration of epidural analgesia.

27. A client is receiving drugs through a PCA infusion pump. When teaching the client about this therapy, which of the following would the nurse include?
    A) Pain relief should occur 1 hour after pushing the control button.
    B) The control button and the button to call the nurse are the same.
    C) The control button activates administration of the drug.
    D) The machine delivers the drug every time the control button is used.
    Ans: C
    Feedback:
    The nurse should inform the client that the control button activates administration of the drug. Pain relief occurs shortly after, and not an hour after, pushing the button. The nurse should educate the client on the difference between the control button and the button to call the nurse, especially when they are similar in appearance and feel. The machine does not deliver the drug every time the control button is used; the machine regulates the dose of the drug as well as the time interval between doses. If the control button is used too soon after the last dose, the machine will not deliver the drug until the correct time.

28. A nurse is caring for a client who is addicted to opioids. The physician has prescribed maintenance therapy using methadone for detoxification. Which of the following should the nurse keep in mind when caring for the client undergoing this therapy?
    A) Dosages vary according to length of the client's addiction.
    B) Methadone is discontinued on an outpatient basis.
    C) Dosages vary according to the client's weight.
    D) Male clients are prescribed higher doses than female clients.
    Ans: A
    Feedback:
    The nurse must keep in mind that dosages vary with clients, the length of addiction, and the average amount of drug used each day. Dosages do not vary according to clients' weights. Methadone is not discontinued on an outpatient basis. Clients enrolled in an outpatient methadone program for detoxification or maintenance therapy on methadone must continue to receive methadone when hospitalized. Male clients are not prescribed higher doses than females.

29. After teaching a group of nursing students about opioids, the instructor determines that additional teaching is needed when the students identify which of the following as a natural opioid?
    A) Meperidine
    B) Morphine
    C) Codeine
    D) Opium
    Ans: A
    Feedback:
    Meperidine is a synthetic opioid. Natural opioids include morphine sulfate, codeine, opium alkaloids, and tincture of opium.

30. A client is prescribed a transdermal opioid. After teaching the client and family how to administer this drug, the nurse determines that the teaching was successful when they state which of the following?
    A) "The drug should be reapplied every 24 hours."
    B) "We should try to apply the patch to about the same site each time."
    C) "The site should only be cleaned with water before each application."
    D) "A hairy area, like the forearm, is an appropriate place to apply the patch."
    Ans: C
    Feedback:
    Only water is used to clean the site because soap and other substances may irritate the skin. The patch is applied for 72 hours and sites should be rotated. Any site that is used should be free of hair.

31. A client is receiving an opioid analgesic following abdominal surgery. The client has been out of bed to the chair and is encouraged to ambulate with assistance. The nurse is also encouraging the client to increase his fluids. He reports that his appetite is good and he has been finishing most of his meals. His bowel sounds are active but he is having difficulty passing stools. A laxative is ordered. Which nursing diagnosis would be most appropriate?
    A) Imbalanced Nutrition: Less Than Body Requirements
    B) Constipation
    C) Risk for Injury
    D) Deficient Knowledge
    Ans: B
    Feedback:
    The client is most likely experiencing constipation from the opioid therapy as well as from the lack of ambulation and activity. The client is eating, so imbalanced nutrition is not necessarily a problem. He is at risk for injury if he is experiencing adverse reactions related to the opioid therapy, but this is not apparent. Although he may have deficient knowledge about the drug, this, too, is not seen in this case.

1. After teaching a group of nursing students about opioid antagonists, the instructor determines that the teaching was successful when the students identify which of the following as true about these drugs? Select all that apply.
   A) An opioid antagonist has greater affinity for opioid receptors than do opioid agonists.
   B) An opioid antagonist has lesser affinity for opioid receptors than do opioid agonists.
   C) An opioid antagonist prevents a response to the opioid by binding to opioid agonists in the bloodstream.
   D) An opioid antagonist prevents a response to the opioid by binding to opioid receptors.
   E) An opioid antagonist potentiates the effect of an opioid.
   Ans: A, D
   Feedback:
   An opioid antagonist has a greater affinity for a cell receptor than an opioid agonist, and by binding to the cell receptor, it prevents a response to the opioid agonist.

2. Which of the following would a nurse most likely be ordered to give to a client experiencing opioid-induced respiratory depression? Select all that apply.
   A) Naloxone
   B) Nalbuphine
   C) Naltrexone
   D) Naproxen
   E) Nitroglycerin
   Ans: A
   Feedback:
   Naloxone is an opioid antagonist specifically developed to reverse respiratory depression associated with opioids. Naltrexone may also be used, but its primary use is in the treatment of alcohol dependence. Nalbuphine is an agonist-antagonist used for severe chronic pain. Naproxen is an NSAID. Nitroglycerin is used for angina.

3. A nursing student is assigned to lead a class discussion on opioid antagonists. Which of the following would the student include as the mechanism by which opioid antagonists reverse the effects of opioid agonists? Select all that apply.
   A) Competitive inhibition of the opioid receptor
   B) Direct binding to the opioid agonist
   C) Displacement of the opioid agonist from the opioid receptor
   D) Irreversible inhibition of the opioid receptor
   E) Mutation of the opioid receptor
   Ans: A, C
   Feedback:
   Opioid agonists reverse the opioid effects by competing for the opiate receptor site and displacing the opioid drug.

4. When administering an opioid antagonist, the nurse would expect reversal of which of the following opioid effects? Select all that apply.
   A) Respiratory depression
   B) Constipation
   C) Analgesia
   D) Hypotension
   E) Bradycardia
   Ans: A, B, C, D, E
   Feedback:
   Opioid antagonists are not selective for reversal of specific adverse reactions occurring with the use of an opioid but will reverse all adverse reactions caused by opioids.

5. A nurse determines that an opioid antagonist would most likely be needed in which situation? Select all that apply.
   A) Postoperative acute respiratory depression
   B) Reversal of phenytoin toxicity
   C) Reversal of opioid-induced hypotension
   D) Suspected acute benzodiazepine overdosage
   E) Suspected acute opioid overdosage
   Ans: A, C, E
   Feedback:
   Opioid antagonists are used for the treatment of the following: postoperative acute respiratory depression, reversal of opioid adverse effects (hypotension, bradycardia, etc.), and suspected acute opioid overdosage.

6. A nurse monitoring a client receiving naloxone (Narcan) should be cognizant for the development of which of the following adverse reactions? Select all that apply.
   A) Nausea
   B) Constipation
   C) Tachycardia
   D) Hypotension
   E) Tremors
   Ans: A, C, E
   Feedback:
   Generalized reactions that can occur with the use of opioid antagonists such as naloxone include nausea, vomiting, sweating, tachycardia, increased blood pressure, and tremors.

7. A nurse would expect to administer naloxone cautiously to which client? Select all that apply.
   A) A client who is pregnant
   B) A client with cardiovascular disease
   C) A client with an alcohol dependency
   D) A client with an opioid dependency
   E) A client with chronic obstructive pulmonary disease
   Ans: A, B, D
   Feedback:
   Opioid antagonists like naloxone (Narcan) should be used cautiously in those who are pregnant or lactating, in infants of opioid-dependent mothers, and in clients with an opioid dependency or cardiovascular disease.

8. A nurse must be careful when administering opioid antagonists to clients taking which of the following? Select all that apply.
   A) Codeine for cough
   B) Zolpidem for sleep
   C) Oxycodone for analgesia
   D) Naproxen for analgesia
   E) Diphenoxylate for diarrhea
   Ans: A, C, E
   Feedback:
   Opioid antagonists may prevent the action or intended use of opioids like codeine for cough, oxycodone for analgesia, or diphenoxylate for diarrhea, so administration of opioid antagonists in clients taking these medications must be monitored carefully.

9. Prior to the administration of an opioid antagonist, which of the following would be most important for the nurse to obtain? Select all that apply.
   A) Blood pressure
   B) Blood glucose
   C) Pulse
   D) Pain assessment
   E) Respiratory rate
   Ans: A, C, E
   Feedback:
   Prior to the administration of an opioid antagonist, the nurse must obtain the client's blood pressure, pulse, and respiratory rate.

10. If time allows, the nurse should review which of the following with the client prior to administering an opioid antagonist? Select all that apply.
    A) Initial health history
    B) Allergy history
    C) Bowel history
    D) Family medical history
    E) Current treatment modalities
    Ans: A, B, E
    Feedback:
    If time allows, the nurse should review the client's initial health history, allergy history, and current treatment modalities prior to administering an opioid antagonist.

11. When administering an opioid antagonist to reverse opioid-induced respiratory depression, which of the following would be most important for the nurse to keep in mind? Select all that apply.
    A) Monitoring is less frequent if respiratory depression occurs in the immediate postoperative setting.
    B) The nurse should notify the primary health care provider if any adverse drug reactions occur.
    C) After the client has shown a response to the drug, the nurse monitors vital signs every 30 to 60 minutes.
    D) Monitoring of the client's respiratory status includes rate, rhythm, and depth.
    E) The nurse monitors the client's blood pressure, pulse, and respiratory rate at frequent intervals, usually every 3 minutes, until the client responds.
    Ans: B, D
    Feedback:
    As part of the ongoing assessment during the administration of the antagonist, continue to monitor the blood pressure, pulse, and respiratory rate at frequent intervals, usually every 5 minutes, until the client responds. This monitoring should be more frequent if respiratory depression occurs in the immediate postoperative setting. After the client has shown a response to the drug, monitor vital signs every 5 to 15 minutes. Notify the anesthesiologist or primary health care provider if any adverse drug reactions occur because additional medical treatment may be needed. Continue to monitor the respiratory rate, rhythm, and depth; pulse; blood pressure; and level of consciousness until the effects of the opioid wear off.

12. A client is prescribed naloxone. The nurse would expect to administer the drug by which route? Select all that apply.
    A) IM injection
    B) IV push
    C) Intrathecal injection
    D) IV piggyback
    E) Subcutaneous injection
    Ans: B, D
    Feedback:
    Naloxone (Narcan) is administered by IV infusion requiring the use of a secondary line, an IV piggyback, or an IV push.

13. Abrupt reversal of opioid-induced respiratory depression may cause vomiting. Which action by the nurse would be most appropriate if this occurs during reversal of opioid-induced respiratory depression? Select all that apply.
    A) Maintaining a patent airway
    B) Stopping the opioid antagonist
    C) Suctioning the client as needed
    D) Administering more of the opioid
    E) Turning the client to the side as needed
    Ans: A, C, E
    Feedback:
    If vomiting occurs during the reversal of opioid-induced respiratory depression, the nurse must maintain a patent airway and should turn and suction the client as needed.

14. Which of the following can occur if the nurse administers naloxone (Narcan) as a rapid IV bolus? Select all that apply.
    A) Withdrawal
    B) Intense pain
    C) Vomiting
    D) Hypotension
    E) Respiratory depression
    Ans: A, B, C
    Feedback:
    Withdrawal, return of intense pain, and vomiting may occur if the nurse administers naloxone (Narcan) as a rapid IV bolus.

15. After administering an opioid antagonist, which of the following would be most appropriate for the nurse to do when the client's pain recurs? Select all that apply.
    A) Change opioid antagonists.
    B) Review the circumstances that led to the use of the opioid antagonist.
    C) Assess the client's pain level.
    D) Begin to treat the pain again.
    E) Decrease the rate of opioid antagonist administration.
    Ans: B, C, D
    Feedback:
    The nurse should assess the client's pain level, review the circumstances that required the use of the antagonist, and begin to treat the pain again. Changing antagonists and decreasing the rate of antagonist administration are inappropriate.

16. Which of the following are evaluations the nurse should make when caring for a client receiving naloxone? Select all that apply.
    A) Pain relief is resumed.
    B) Adverse reactions are identified and managed.
    C) Therapeutic response is achieved.
    D) Client demonstrates an understanding of the drug regimen.
    E) Client's respiratory rate is normal.
    Ans: A, B, C, D, E
    Feedback:
    Pain relief is resumed, adverse reactions are identified and managed, therapeutic response is achieved, client demonstrates an understanding of the drug regimen, and client's respiratory rate is normal are evaluations of successful therapy with an opioid antagonist.

17. A nurse is caring for a client who is receiving naloxone intravenously. The client develops acute pain while the drug is being administered. Which of the following would most likely explain the client's pain level?
    A) The drug was administered as too rapid a dose.
    B) The client's pain wasn't controlled before the administration of naloxone.
    C) The change in respiratory status has caused the increase in pain.
    D) The dosage of the naloxone was too small.
    Ans: A
    Feedback:
    When naloxone is given IV and the bolus is given too rapidly, withdrawal symptoms and the return of intense pain occur as the level of opioid is reduced. There is no indication that the client's pain hadn't been controlled previously. A change in the respiratory status does not lead to increased pain. If the dose was too small, the client would still be experiencing some of the effects of the opioid that is being reversed.

18. A client with respiratory depression is administered an opioid antagonist by the nurse. What ongoing assessment should the nurse perform when administering the opioid antagonist to the client?
    A) Monitor vital signs every 5 to 15 minutes.
    B) Review allergy history and other treatment modalities.
    C) Teach different breathing patterns to the client.
    D) Monitor the blood pH level of the client.
    Ans: A
    Feedback:
    The ongoing assessment performed by the nurse when administering an opioid antagonist to the client involves monitoring the vital signs of the client every 5 to 15 minutes. Monitoring the blood pH level of the client is not part of the ongoing assessment. Reviewing the allergy history and other treatment modalities and teaching different breathing patterns to the client are preadministration assessments that are performed before the administration of the drug; they are not ongoing assessments.

19. A client is receiving an opioid antagonist. The nurse would closely monitor the client for which of the following?
    A) Cramps
    B) Sweating
    C) Low blood pressure
    D) Skin inflammation
    Ans: B
    Feedback:
    The nurse should monitor for sweating when caring for the client since it is one of the adverse reactions of opioid antagonists. Other adverse reactions include nausea, vomiting, tachycardia, increased blood pressure, and tremors. The nurse need not monitor for cramps, low blood pressure, or skin inflammation since these conditions are not known to be caused by opioid antagonists.

20. A primary health care provider orders opioid antagonist treatment for a client with respiratory depression. The nurse should be aware of which of the following conditions that can occur during an abrupt reversal of opioid respiratory treatment?
    A) Dizziness
    B) Headache
    C) Vomiting
    D) Lightheadedness
    Ans: C
    Feedback:
    The nurse should know that an abrupt reversal of opioid respiratory depression with an opioid antagonist results in vomiting. The nurse must maintain a patent airway and should turn and suction the client as needed in such cases. Headache, dizziness, and lightheadedness are not known to occur during an abrupt reversal of opioid respiratory treatment.

21. An opioid-naïve client experiences acute pain after surgery and is prescribed opioid therapy. The nurse would be especially alert for the development of which of the following?
    A) Pruritus
    B) Severe headache
    C) Respiratory depression
    D) Urticaria
    Ans: C
    Feedback:
    The nurse should monitor for symptoms of respiratory depression developing in the client as one of the severe adverse reactions of opioid treatment. Pruritus, urticaria, and headache are caused by opioids, but these conditions are not the most severe and common adverse reactions observed in opioid-naïve clients. Therefore, the nurse need not monitor for pruritus, severe headache, or severe urticaria in an opioid-naïve client undergoing opioid therapy.

22. A client is prescribed naloxone for the treatment of postoperative acute respiratory depression after a kidney transplant. The nurse explains the drug to the family, describing its action as which of the following?
    A) Naloxone stops internal bleeding.
    B) Naloxone restores respiratory function.
    C) Naloxone restores reflexes of limbs.
    D) Naloxone helps the client overcome pain.
    Ans: B
    Feedback:
    The nurse should explain that naloxone restores respiratory function within 1 to 2 minutes after administration. Naloxone neither stops internal bleeding nor restores limb reflexes. Naloxone also does not overcome pain.

23. A client with chronic back pain is admitted to a local health care facility for respiratory depression secondary to an inadvertent overdose of his opioid analgesic. The client is to receive naloxone. Which of the following would the nurse include before administering naloxone?
    A) Monitor the client's blood pressure every 5 minutes.
    B) Review the client's allergy history and treatment modalities.
    C) Monitor vital signs every 5 to 15 minutes if the client is responsive.
    D) Monitor respiratory rate and rhythm of the client.
    Ans: B
    Feedback:
    Before administering the antagonist, the nurse should review the client's initial health history, allergy history, and treatment modalities. The nurse should also obtain the client's blood pressure, pulse, and respiratory rate and review the record for the drug suspected of causing the symptoms of respiratory depression. All these interventions are part of the preadministration assessment, which is conducted before the administration of the drug. Monitoring the client's blood pressure every 5 minutes until the client responds, monitoring vital signs every 5 to 15 minutes if the client is responsive, and monitoring the client's respiratory rate and rhythm are all interventions involved in the ongoing assessment of the client that the nurse performs while the client is undergoing the drug therapy.

24. A client is given a postoperative opioid drug for pain relief. The nurse observes that the drug has slowed the client's breathing pattern. Which of the following reasons would the nurse most likely identify as the cause of the lowered breathing pattern?
    A) Anxiety
    B) Somnolence
    C) Nausea
    D) Anorexia
    Ans: B
    Feedback:
    The nurse should identify somnolence as a cause of slowing of the client's breathing pattern. Sometimes the somnolence and pain relief produced by the opioid drug can slow the client's breathing pattern. Anxiety, nausea, and anorexia are not known to be responsible for slowing down a client's breathing pattern when the client is administered an opioid drug.

25. A client is admitted to a local health care facility for alcohol dependence. The nurse knows that the physician is most likely to prescribe which of the following drugs for the client?
    A) Cisapride
    B) Naproxen
    C) Lincosamide
    D) Naltrexone
    Ans: D
    Feedback:
    The nurse should administer naltrexone to the client who has alcohol dependence. It is also used to block the effects of suspected opioids if they are being used by the person undergoing treatment for alcohol dependence. Cisapride, naproxen, and lincosamide are not used to treat alcohol dependence.

26. After administering naloxone to a client with respiratory depression, the nurse would expect to see the effects of the drug within which time frame?
    A) 1 to 2 minutes
    B) 3 to 4 minutes
    C) 5 to 6 minutes
    D) 7 to 8 minutes
    Ans: A
    Feedback:
    Naloxone is capable of restoring respiratory function within 1 to 2 minutes after administration.

27. A nurse suspects that a client receiving naloxone is experiencing an adverse reaction when the assessment reveals which of the following?
    A) Bradycardia
    B) Dry, flushed skin
    C) Tremors
    D) Diarrhea
    Ans: C
    Feedback:
    Generalized reactions to naloxone include nausea and vomiting, sweating, tachycardia, increased blood pressure, and tremors.

28. A client who has been receiving naloxone suddenly starts grimacing and moaning, moving his arms back and forth across his body, and drawing his legs up to his abdomen. Prior to administration the client was sleepy and calm. Assessment reveals that his respiratory rate is 18 breaths per minute. Which nursing diagnosis would most likely apply?
    A) Acute Pain
    B) Impaired Spontaneous Ventilation
    C) Deficient Knowledge
    D) Ineffective Coping
    Ans: A
    Feedback:
    The client is exhibiting nonverbal indicators of acute pain, which can result after naloxone reverses the opioid's effects. The client's respiratory rate is 18 breaths per minute, so impaired spontaneous ventilation is not appropriate. There is nothing to indicate at the present time that the client has a knowledge deficit or that he is not coping well.

29. After teaching a group of nursing students about opioid antagonists, the instructor determines that the teaching was successful when the students identify which of the following as an example?
    A) Naproxen
    B) Nalbuphine
    C) Naloxone
    D) Nevirapine
    Ans: C
    Feedback:
    Naloxone is an opioid antagonist. Naproxen is an NSAID. Nalbuphine is an opioid agonist-antagonist. Nevirapine is an antiretroviral agent.

30. The nurse is evaluating a client who has received naloxone for respiratory depression. Assessment of which of the following would indicate effectiveness of the drug therapy?
    A) Client is now receiving mechanical ventilation.
    B) Client's level of pain has decreased.
    C) Respiratory rate and depth are within acceptable parameters.
    D) Fluid intake and output are balanced.
    Ans: C
    Feedback:
    The client receives naloxone to reverse respiratory depression. Therefore, a respiratory rate and depth within acceptable parameters indicate that the drug was effective. The need for mechanical ventilation indicates that the client is still experiencing respiratory difficulty. Naloxone is not given for pain relief; however, pain relief must be addressed since the drug will negate any opioid pain relief. Naloxone does not affect fluid balance.

1. A group of nursing students are reviewing the different types of anesthesia. The students demonstrate understanding of the information when they identify which of the following as a type of local anesthesia? Select all that apply.
   A) Topical anesthesia
   B) General anesthesia
   C) Local infiltration anesthesia
   D) Regional anesthesia
   E) Spinal anesthesia
   Ans: A, C, D, E
   Feedback:
   Local anesthesia includes topical, local infiltration, and regional anesthesia (spinal anesthesia and conduction block are types of regional anesthesia).

2. The nurse should inform a client receiving spinal anesthesia to expect a loss of feeling and movement in which of the following? Select all that apply.
   A) Arms
   B) Legs
   C) Face
   D) Lower abdomen
   E) Hands
   Ans: B, D
   Feedback:
   The nurse should inform a client receiving spinal anesthesia to expect a loss of feeling and movement in the lower extremities, lower abdomen, and perineum.

3. Which of the following are responsibilities of the nurse when local injectable anesthesia is to be administered to a client?
   A) Taking the client's allergy history
   B) Explaining how the anesthetic will be administered
   C) Preparing the area to be anesthetized
   D) Administering the anesthetic
   E) Applying a dressing to the area if appropriate
   Ans: A, B, C, E
   Feedback:
   The nurse is responsible for taking the client's allergy history, explaining how the anesthetic will be administered, preparing the area to be anesthetized, and applying a dressing to the area if appropriate. The physician administers the local injectable anesthetic.

4. A nurse working on the labor and delivery unit will most likely see which of the following used during the birthing process? Select all that apply.
   A) Epidural block
   B) Brachial plexus block
   C) Transsacral block
   D) Local infiltration anesthesia
   E) General anesthesia
   Ans: A, C
   Feedback:
   Epidural and transsacral blocks are often used in obstetrics during the birthing process.

5. For which area on the body would the nurse identify that the use of epinephrine with a local injectable drug would be contraindicated? Select all that apply.
   A) Use on a toe
   B) Use on the scalp
   C) Use on the face
   D) Use on the abdomen
   E) Use on a finger
   Ans: A, E
   Feedback:
   When the local anesthetic is used on an extremity (such as a toe or finger), the use of epinephrine with a local injectable drug is contraindicated.

6. A nursing instructor is describing the classes of drugs that are commonly used as preanesthetics. The instructor determines that the teaching was successful when the students identify which as an example? Select all that apply.
   A) Antihypertensives
   B) Opioid agonists
   C) Antianxiety agents
   D) Antiemetics
   E) Cholinergic antagonists
   Ans: B, C, D, E
   Feedback:
   Opioid agonists, antianxiety agents, antiemetics, and cholinergic antagonists represent classes of drugs commonly used as preanesthetics.

7. A client is scheduled for surgery. Before surgery, the nurse would be responsible for which of the following? Select all that apply.
   A) Describing the preparation for surgery ordered by the physician
   B) Assessing the physical status of the client
   C) Describing postoperative care
   D) Demonstrating postoperative client activities
   E) Demonstrating the use of a PCA pump
   Ans: A, B, C, D, E
   Feedback:
   The nurse is responsible for describing the preparation for surgery ordered by the physician, assessing the physical status of the client, describing postoperative care, demonstrating postoperative client activities, and demonstrating the use of a PCA pump.

8. A nurse is reviewing the medical record of a client scheduled for surgery and notes that the client will be receiving general anesthesia. Which factor would the nurse identify as affecting the choice of general anesthesia medication used in a particular client? Select all that apply.
   A) Client's general physical condition
   B) Area of the planned surgery
   C) Anticipated length of the surgery
   D) Client's weight
   E) Client's temperature
   Ans: A, B, C
   Feedback:
   The choice of anesthetic drug depends on many factors, including general physical condition of the client; area, organ, or system being operated on; and anticipated length of the surgical procedure. The client's weight may affect the dose of the drug to be given. The client's temperature is unrelated to the choice of anesthetic.

9. A nurse is reviewing the methods for general anesthesia administration. The nurse would expect which route to be used most commonly for this type of anesthesia? Select all that apply.
   A) Oral
   B) Inhalation
   C) Topical
   D) IV
   E) IM
   Ans: B, D
   Feedback:
   General anesthesia is most commonly achieved when the anesthetic vapors are inhaled or the drug is administered IV.

10. When reviewing information about general anesthetics, a group of students read about volatile liquids used as inhaled general anesthetics. The students demonstrate understanding of the information when they identify which of the following as a volatile liquid? Select all that apply.
    A) Halothane
    B) Desflurane
    C) Nitrous oxide
    D) Enflurane
    E) Cyclopropane
    Ans: A, B, D
    Feedback:
    Halothane, desflurane, and enflurane are examples of volatile liquids used as inhaled anesthetics. Examples of gas anesthetics are nitrous oxide and cyclopropane.

11. After teaching an in-service presentation for nurses about general anesthetics, the instructor determines that the teaching was successful when the nurses identify which of the following as an example of a gas anesthetic? Select all that apply.
    A) Halothane
    B) Desflurane
    C) Nitrous oxide
    D) Enflurane
    E) Cyclopropane
    Ans: C, E
    Feedback:
    Nitrous oxide and cyclopropane are examples of gas anesthetics. Halothane, desflurane, and enflurane are examples of volatile liquids used as inhaled anesthetics.

12. A nurse is reviewing the anesthesia record of a client who has returned to the unit after abdominal surgery. Which of the following might the nurse note as being used for the induction of anesthesia? Select all that apply.
    A) Lidocaine
    B) Prilocaine
    C) Methohexital
    D) Etomidate
    E) Propofol
    Ans: C, D, E
    Feedback:
    Methohexital, propofol, and etomidate are examples of medications used for the induction of anesthesia. Lidocaine and prilocaine are local anesthetics.

13. A nurse is researching the actions of the drug midazolam. Which of the following would the nurse expect to find about this drug's use as an anesthetic? Select all that apply.
    A) A common preanesthetic antiemetic drug
    B) Appropriate for induction of anesthesia
    C) Often for conscious sedation prior to minor procedures
    D) Limited for use with general anesthesia
    E) Supplementation to nitrous oxide and oxygen for short surgical procedures
    Ans: B, C, E
    Feedback:
    Midazolam, a short-acting benzodiazepine CNS depressant, is used as a preanesthetic drug to relieve anxiety (not prevent vomiting); for induction of anesthesia; for conscious sedation before minor procedures, such as endoscopy; and to supplement nitrous oxide and oxygen for short surgical procedures.

14. When clients receive the rapid-acting general anesthetic ketamine, they would exhibit which of the following? Select all that apply.
    A) Analgesia
    B) Cardiovascular stimulation
    C) Reduced skeletal muscle tone
    D) Respiratory depression
    E) Respiratory stimulation
    Ans: A, B, E
    Feedback:
    Clients administered the rapid-acting general anesthetic ketamine (Ketalar) will exhibit profound analgesia, cardiovascular stimulation, respiratory stimulation, and enhanced skeletal muscle tone.

15. The nurse is reviewing the medical record of a client who has returned from surgery. The client received a volatile liquid that required administration with a special vaporizer because delivery to the client without a vaporizer can result in irritation of the client's respiratory tract. Which of the following would the nurse identify as being administered? Select all that apply.
    A) Sevoflurane
    B) Desflurane
    C) Isoflurane
    D) Methoxyflurane
    E) Halothane
    Ans: B
    Feedback:
    Desflurane is a volatile liquid that must be administered with a special vaporizer because delivery to the client without a vaporizer can result in irritation of the client's respiratory tract.

16. A nurse working in an outpatient surgical setting may see which of the following volatile liquids used in general anesthesia?
    A) Sevoflurane
    B) Desflurane
    C) Isoflurane
    D) Methoxyflurane
    E) Halothane
    Ans: A
    Feedback:
    A nurse working in an outpatient surgical setting may see sevoflurane used in outpatient general anesthesia.

17. The nurse reviews a client's medical record and finds that the client received Innovar. The nurse understands that this drug results in neuroleptanalgesia and is a combination of which of the following drugs? Select all that apply.
    A) Lidocaine
    B) Fentanyl
    C) Etomidate
    D) Droperidol
    E) Methohexital
    Ans: B, D
    Feedback:
    The drug Innovar is a combination drug consisting of fentanyl and droperidol.

18. To assist with the insertion of an endotracheal tube, the nurse would expect the client to receive which of the following to facilitate its insertion? Select all that apply.
    A) Hydroxyzine
    B) Glycopyrrolate
    C) Atracurium
    D) Doxacurium
    E) Meperidine
    Ans: C, D
    Feedback:
    Atracurium and doxacurium are muscle relaxants used during general anesthesia to facilitate the insertion of an endotracheal tube.

19. A nursing student is reviewing the stages of general anesthesia. Which pairing if identified by the student demonstrates understanding? Select all that apply.
    A) Stage I—delirium
    B) Stage III—respiratory paralysis
    C) Stage II—delirium
    D) Stage IV—respiratory paralysis
    E) Stage I—analgesia
    Ans: C, D, E
    Feedback:
    The stages of anesthesia are as follows: stage I—analgesia; stage II—delirium; stage III—surgical anesthesia; and stage IV—respiratory paralysis.

20. A nurse is working in the PACU. Which of the following would be most important for the nurse to do? Select all that apply.
    A) Checking airway patency
    B) Positioning the client to prevent aspiration of secretions
    C) Reviewing the client's surgical and anesthesia records
    D) Checking the client every 15 to 30 minutes for emergence from anesthesia
    E) Checking the client's vital signs
    Ans: A, B, C, E
    Feedback:
    Checking airway patency, positioning the client to prevent aspiration of secretions, reviewing the client's surgical and anesthesia records, checking the client every 5 to 15 minutes for emergence from anesthesia, and checking the client's vital signs, IV lines, catheters, drainage tubes, surgical dressings, and casts represent the nurse's responsibilities to a client in the PACU.

21. A client is admitted to a local health care facility for minor surgery to be performed with regional anesthesia. The nurse knows that regional anesthesia would be injected around which of the following regions in the body?
    A) The veins
    B) The arteries
    C) The nerves
    D) The capillaries
    Ans: C
    Feedback:
    Regional anesthesia involves injection around the client's nerves. Doing so prevents these nerves from sending pain signals to the brain. Regional anesthesia is never injected into the veins, arteries, or capillaries.

22. A client admitted to a local health care facility is to undergo surgery with spinal anesthesia. Which of the following is the nurse most likely to observe when caring for this client?
    A) Moderate muscle relaxation
    B) Loss of feeling in the lower abdomen
    C) Hypotension as anesthesia deepens
    D) Increase in the client's heart rate
    Ans: B
    Feedback:
    Spinal anesthesia involves the injection of a local anesthetic drug into the subarachnoid space of the spinal cord. There is a loss of feeling (anesthesia) and movement in the lower extremities, lower abdomen, and perineum. Spinal anesthesia is not known to increase a client's heart rate. Spinal anesthesia also does not cause hypotension or moderate muscle relaxation. Enflurane is a volatile liquid anesthetic that causes hypotension once it deepens. Halothane, which is a volatile liquid anesthetic, produces moderate muscle relaxation. Both halothane and enflurane are drugs used for general anesthesia.

23. A client admitted to a health care facility for an appendectomy receives methohexital as a general anesthetic. Which of the following would most likely occur as a result of this medication?
    A) Skeletal muscle relaxation
    B) Profound analgesia
    C) CNS depression
    D) Neuroleptanalgesia
    Ans: C
    Feedback:
    Methohexital is an ultrashort-acting barbiturate that depresses the CNS to produce hypnosis and anesthesia, but it does not produce analgesia. Skeletal muscle relaxation is caused by skeletal muscle relaxants, halothane, and enflurane. An anesthetic state characterized by profound analgesia is produced by ketamine, which is a rapid-acting general anesthetic. Neuroleptanalgesia is caused by a combination of fentanyl and droperidol.

24. A client is prescribed preanesthetic drugs prior to surgery. Which of the following nursing interventions should the nurse perform when caring for this client before the administration of preanesthetic drugs?
    A) Explain postoperative client activities.
    B) Check the client every 5 to 15 minutes.
    C) Assess the respiratory status of the client.
    D) Admit the client to an appropriate unit.
    Ans: A
    Feedback:
    When caring for a client prescribed preanesthetic drugs, the nurse should demonstrate, describe, and explain postoperative client activities, such as deep breathing, coughing, and leg exercises. The nurse should check the client every 5 to 15 minutes for emergence from anesthesia, but this is done after the administration of anesthesia, not before. Assessing the respiratory status of the client and admitting the client to an appropriate unit are both postoperative interventions that a nurse should perform. Therefore, these are not performed before the administration of preanesthetic drugs and anesthesia.

25. A client admitted for surgery is to receive general anesthesia. Prior to administering the prescribed preanesthetic, which of the following would the nurse do?
    A) Review the client's surgical and anesthesia records.
    B) Position the client to prevent aspiration of vomitus and secretions.
    C) Check the chart for any abnormal laboratory test results.
    D) Check the airway for patency and assess the respiratory status.
    Ans: C
    Feedback:
    Before surgery and administering the preanesthetic, the nurse should check the client's chart for any abnormal laboratory test results. Reviewing the client's surgical and anesthesia records, positioning the client to prevent aspiration of vomitus and secretions, checking the airway for patency, and assessing the respiratory status are the postoperative responsibilities of the nurse.

26. A nurse is assigned to care for a 53-year-old client who is to receive glycopyrrolate as a preanesthetic drug. The nurse reviews the client's history for which of the following that would contraindicate the use of this drug?
    A) Diabetes
    B) Hypotension
    C) Respiratory problems
    D) Myocardial ischemia
    Ans: D
    Feedback:
    The nurse should confirm that the 53-year-old client does not have myocardial ischemia to ensure that the use of glycopyrrolate is not contraindicated. The other conditions that contraindicate the drug's use include prostatic hypertrophy and glaucoma. Diabetes, hypotension, or respiratory problems are not contraindications for the use of glycopyrrolate.

27. A client visits a dental health care clinic for a tooth extraction. Which type of anesthesia would most likely be used?
    A) Regional anesthesia
    B) General anesthesia
    C) Topical anesthesia
    D) Local infiltration anesthesia
    Ans: D
    Feedback:
    Local infiltration anesthesia is often used for dental procedures. Regional anesthesia covers a larger area than that covered by local infiltration anesthesia, so it is not used for minor surgeries like that of a tooth extraction. General anesthesia is used to achieve a pain-free state for the entire body and is not the most appropriate type of anesthesia for a tooth extraction. Similarly, topical anesthesia is used to desensitize skin or mucous membranes for injection of a deeper local anesthetic.

28. A group of nursing students are reviewing information about general anesthesia. The students demonstrate understanding of the information when they identify which of the following as a factor that would influence the selection of the general anesthesia for the client?
    A) Age of the client
    B) Length of surgical procedure
    C) Preanesthetic drug prescribed
    D) Postoperative care involved
    Ans: B
    Feedback:
    The choice of general anesthesia depends on factors that include the general physical condition of the client; the area, organ, or system being operated on; and the anticipated length of the surgical procedure. The selection of general anesthesia does not depend on the age of the client, the preanesthetic drug prescribed for the client, or the postoperative care involved.

29. A client scheduled for surgery has to undergo insertion of an endotracheal tube. The nurse understands that which of the following drugs for general anesthesia would most likely be ordered for this client?
    A) Benzodiazepines
    B) Barbiturates
    C) Opioid analgesics
    D) Skeletal muscle relaxants
    Ans: D
    Feedback:
    Skeletal muscle relaxants help produce relaxation of skeletal muscles during certain types of surgeries involving the chest or abdomen and are used to facilitate the insertion of an endotracheal tube. Barbiturates are used for the induction of anesthesia. Benzodiazepines are used to relieve anxiety, induce anesthesia, and consciously sedate the client before minor procedures. Opioid analgesics are used to produce neuroleptanalgesia characterized by general quietness, reduced motor activity, and profound analgesia.

30. After teaching a group of students about the stages of general anesthesia, the instructor determines that the teaching was successful when the students identify which of the following as characteristic of the first stage?
    A) Delirium
    B) Analgesia
    C) Respiratory paralysis
    D) Excitement
    Ans: B
    Feedback:
    Stage I is characterized by analgesia; stage II is the stage of delirium and excitement; stage III is the stage of surgical analgesia; and stage IV is the stage of respiratory paralysis.

31. A client is to receive atropine as a preanesthetic. The nurse would inform the client that this drug is given for which reason?
    A) Decrease secretions
    B) Relieve anxiety
    C) Promote sedation
    D) Promote relaxation
    Ans: A
    Feedback:
    Atropine is a cholinergic blocker that is given to dry secretions in the upper respiratory tract. An opioid or antianxiety drug may be given to relax or sedate the client.

1. After teaching a group of nursing students about central nervous stimulants, the instructor determines that the teaching was successful when the students state which of the following as an effect of caffeine on the body? Select all that apply.
   A) Skeletal muscle relaxation
   B) Respiratory stimulation
   C) Central nervous system (CNS) stimulation
   D) Cardiac relaxation
   E) Diuresis
   Ans: B, C, E
   Feedback:
   Caffeine exerts the following effects on the body: stimulates the CNS, cardiac system, and respiratory system and results in mild diuresis.

2. When describing how analeptics increase the depth of respirations, the nursing instructor addresses the stimulation of chemoreceptors. The instructor would identify these chemoreceptors as being located in which area in the body? Select all that apply.
   A) Upper aorta
   B) Left ventricle
   C) Jugular vein
   D) Carotid artery
   E) Pulmonary vein
   Ans: A, D
   Feedback:
   Analeptics increase the depth of respirations by stimulating chemoreceptors located in the carotid arteries and upper aorta.

3. A nurse would suspect that a client is taking amphetamines based on the assessment of which of the following? Select all that apply.
   A) Decrease in blood pressure
   B) Sleepiness
   C) Increased pulse
   D) Euphoria
   E) Decreased pulse
   Ans: C, D, E
   Feedback:
   A client taking amphetamines may have elevated blood pressure, wakefulness, and an increase or decrease in pulse. Amphetamines also produce a euphoric state; this pleasurable feeling is what increases their dependency potential.

4. A group of nursing students are reviewing information about central nervous system stimulants. The students demonstrate understanding of the information when they identify which of the following as an indication for use? Select all that apply.
   A) Sleep apnea
   B) Hypertension
   C) Attention deficit hyperactivity disorder (ADHD)
   D) Drug-induced respiratory depression
   E) Hyperglycemia
   Ans: A, C, D
   Feedback:
   The CNS stimulants are used in the treatment of the following: ADHD, drug-induced respiratory depression, narcolepsy, sleep apnea, exogenous obesity, and fatigue.

5. A nurse is providing care to a client taking a CNS stimulant. The nurse assesses the client closely for which of the following as a possible adverse reaction? Select all that apply.
   A) Disorientation
   B) Dyspnea
   C) Bradycardia
   D) Urinary retention
   E) Headache
   Ans: A, B, D, E
   Feedback:
   A nurse should monitor a client taking a CNS stimulant for the following adverse reactions: headache, dizziness, apprehension, disorientation, hyperactivity, nausea, vomiting, cough, dyspnea, urinary retention, tachycardia, and palpitations.

6. A nurse is reviewing the medical record of a client. Which of the following conditions, if found, would the nurse identify as a condition in which CNS stimulants should be avoided? Select all that apply.
   A) Severe hypotension
   B) Hyperthyroidism
   C) Diabetes
   D) Cardiac disease
   E) Seasonal allergies
   Ans: B, D
   Feedback:
   CNS stimulants should not be given to clients with cardiac disease, severe hypertension, or hyperthyroidism. Diabetes and seasonal allergies are not contraindications for use of CNS stimulants.

7. After conducting an in-service presentation about CNS stimulants, the presenter determines that the teaching was successful when the group identifies which of the following as a contraindication to their use? Select all that apply.
   A) Epilepsy
   B) COPD
   C) Glaucoma
   D) Diabetes
   E) GERD
   Ans: A, B, C
   Feedback:
   The use of CNS stimulants is contraindicated in clients with known hypersensitivity, epilepsy, COPD, or glaucoma.

8. A client is prescribed a CNS stimulant as treatment for respiratory depression. Before administering the drug, which of the following would be most important for the nurse to assess? Select all that apply.
   A) Blood pressure
   B) Pulse
   C) Respiratory rate
   D) Respiratory pattern
   E) Review of recent lab work
   Ans: A, B, C, D, E
   Feedback:
   Before administering a CNS stimulant, the nurse should assess the following: blood pressure; pulse; respiratory rate, depth, and pattern; and review of recent lab work. In addition, the nurse should identify the drug or drugs that may have contributed to the client's respiratory depression.

9. A client is prescribed a CNS stimulant as treatment for attention deficit hyperactivity disorder. Which of the following assessments would be most important for the nurse to obtain before administering the drug? Select all that apply.
   A) Blood pressure
   B) Weight
   C) Respiratory rate
   D) Behavior pattern
   E) Review of recent lab work
   Ans: A, B, C, D
   Feedback:
   The nurse's preadministration assessment of a client receiving a CNS stimulant for attention deficit hyperactivity disorder should include blood pressure, respiratory rate, weight, and behavior pattern. A review of recent lab work would not be necessary.

10. Which of the following would be most important for the nurse to assess before administering a CNS stimulant to a client being treated for obesity? Select all that apply.
    A) Blood pressure
    B) Pulse
    C) Weight
    D) Respiratory rate
    E) Review of recent lab work
    Ans: A, B, C, D
    Feedback:
    The nurse's preadministration assessment of a client receiving a CNS stimulant for the treatment of obesity should include blood pressure, pulse, respiratory rate, and weight. A review of recent lab work would not be necessary.

11. After administering a CNS stimulant to a client being treated for respiratory depression, the nurse would continue to assess which of the following? Select all that apply.
    A) Blood pressure
    B) Pulse
    C) Respiratory rate
    D) Respiratory pattern
    E) Level of consciousness
    Ans: A, B, C, D, E
    Feedback:
    The nurse's ongoing assessment of a client receiving a CNS stimulant for respiratory depression should include blood pressure; pulse; respiratory rate, depth, and pattern; and level of consciousness.

12. A client taking a CNS stimulant may experience altered sleep patterns. Which of the following suggestions would be most helpful? Select all that apply.
    A) Administer the drug early in the day.
    B) Take frequent naps throughout the day.
    C) Avoid caffeine products.
    D) Stop taking the medication.
    E) Be active during the day.
    Ans: A, C, E
    Feedback:
    The nurse can instruct the client to administer the drug early in the day, avoid caffeine and other CNS stimulants, be active during the day, and not nap during the day to aid in sleep alteration caused by the use of a CNS stimulant.

13. A nurse instructs a client to avoid other CNS stimulants while taking dexmethylphenidate. Which of the following would the nurse include in the instructions? Select all that apply.
    A) Tea
    B) Fruit juice
    C) Coffee
    D) Cola drinks
    E) Milk
    Ans: A, C, D
    Feedback:
    CNS stimulants include tea, coffee, and cola drinks. Fruit juices and milk are caffeine free.

14. An older adult client is receiving a CNS stimulant. When assessing this client, the nurse integrates knowledge about an older adult client's increased sensitivity to the drug, closely monitoring the client for which of the following? Select all that apply.
    A) Anxiety
    B) Insomnia
    C) Bradycardia
    D) Confusion
    E) Hypotension
    Ans: A, B, D
    Feedback:
    A nurse caring for an older adult client receiving CNS stimulants should monitor the client closely for anxiety, nervousness, insomnia, and mental confusion because older clients are more sensitive to the adverse reactions of this group of drugs.

15. A child is prescribed dexmethylphenidate. When developing the teaching plan for the child and parents, the nurse instructs the parents to administer the drug at which time? Select all that apply.
    A) After breakfast
    B) Before breakfast
    C) After lunch
    D) Before lunch
    E) At bedtime
    Ans: B, D
    Feedback:
    The nurse should instruct the client's parents to administer dexmethylphenidate 30 to 45 minutes before breakfast and before lunch.

16. A nurse is conducting a class for a local community group about caffeine. The nurse discusses conditions in which over-the-counter caffeine products should be avoided. Which of the following would the nurse include in this discussion? Select all that apply.
    A) Hyperlipidemia
    B) Peptic ulcer disease
    C) GERD
    D) Hypertension
    E) Heart disease
    Ans: B, D, E
    Feedback:
    Clients with heart disease, hypertension, and peptic ulcer disease should avoid the use of over-the-counter caffeine preparations.

17. A nurse is providing care to a client diagnosed with attention deficit hyperactivity disorder (ADHD). The nurse would expect which of the following as possibly being prescribed for treatment? Select all that apply.
    A) Methylphenidate
    B) Phentermine
    C) Modafinil
    D) Doxapram
    E) Dextroamphetamine
    Ans: A, E
    Feedback:
    Methylphenidate and dextroamphetamine are CNS stimulants used in the treatment of ADHD. Phentermine is used to treat obesity. Modafinil is used to treat narcolepsy. Doxapram is used to treat respiratory depression.

18. Which of the following would a nurse expect to be prescribed when providing care to a client with narcolepsy? Select all that apply.
    A) Methylphenidate
    B) Phentermine
    C) Modafinil
    D) Armodafinil
    E) Dextroamphetamine
    Ans: A, C, D, E
    Feedback:
    A nurse caring for a client with narcolepsy may administer methylphenidate, modafinil, armodafinil, and dextroamphetamine.

19. A nurse caring for a client with obesity would expect the primary health care provider to prescribe which of the following CNS stimulants? Select all that apply.
    A) Benzphetamine
    B) Phentermine
    C) Modafinil
    D) Sibutramine
    E) Dextroamphetamine
    Ans: A, B, D
    Feedback:
    A nurse caring for a client with obesity may administer benzphetamine, phentermine, and sibutramine.

20. A client has been prescribed an amphetamine. The nurse would assess the client for which of the following?
    A) Decreased appetite
    B) Low blood pressure
    C) Drowsiness
    D) Depression
    Ans: A
    Feedback:
    Amphetamines have the ability to suppress appetite, so the client will show a decrease in appetite. The drug action results in high blood pressure, not low blood pressure. The client also experiences wakefulness, not drowsiness. Amphetamines produce a euphoric state, not depression.

21. The nurse would monitor a client who is receiving caffeine for which of the following?
    A) Decease in heart rate
    B) Decrease in urinary output
    C) Feeling of euphoria and well-being
    D) Skeletal muscle stimulation
    Ans: D
    Feedback:
    Caffeine leads to skeletal muscle stimulation. Caffeine results in an increase, not decrease, in heart rate. Caffeine is a diuretic and it increases, not decreases, urinary output. Caffeine does not lead to a feeling of euphoria or well-being.

22. A client has been prescribed an amphetamine as part of obesity treatment. Which of the following would the nurse document before initiating the prescribed regimen?
    A) Temperature
    B) Weight
    C) Blood glucose level
    D) Arterial blood gas results
    Ans: B
    Feedback:
    Before administering amphetamine as part of obesity treatment, the nurse should record the client's weight. There is no need to record the client's temperature or blood glucose level. Arterial blood gas results are reviewed when a CNS stimulant is prescribed for respiratory depression but not for obesity treatment.

23. A client has been prescribed benzphetamine. Which intervention would be most appropriate for the nurse to implement while administering the drug?
    A) Provide tea, coffee, and other stimulants.
    B) Administer the drug around dinner time.
    C) Avoid administering antidepressants.
    D) Encourage the intake of carbonated caffeine beverages.
    Ans: C
    Feedback:
    The nurse should ensure that benzphetamine, or any other anorexiant, is not taken concurrently with antidepressant medications. The nurse should avoid or decrease the use of coffee, tea, and carbonated beverages containing caffeine. The drug should be taken early in the day, not around dinner time, to avoid insomnia.

24. A 10-year-old child is receiving a CNS stimulant as treatment for ADHD. When developing the teaching plan for the parents, the nurse would include instructions about recording which of the following periodically?
    A) Social interaction
    B) Weight and growth
    C) Voiding pattern
    D) Sleeping pattern
    Ans: B
    Feedback:
    The nurse should instruct the parents to monitor the weight and growth patterns of the child. The child's social interaction or sleeping pattern need not be recorded unless specified by the primary health care provider. Since the drugs administered for ADHD do not cause urinary retention, there is no need to monitor urinary patterns.

25. A client has been prescribed modafinil for the treatment of narcolepsy. The nurse would assess the client for which of the following as a common adverse reaction?
    A) Insomnia
    B) Nausea
    C) Urinary retention
    D) Tremors
    Ans: B
    Feedback:
    The nurse should monitor for nausea because it is one of the common adverse reactions associated with analeptics such as modafinil. Insomnia, urinary retention, and tremors are not reactions generally associated with analeptic drugs.

26. After teaching a group of nursing students about CNS stimulants, the instructor determines that the teaching was successful when the students identify which of the following as a contraindication?
    A) Parkinson's disease
    B) Severe hypertension
    C) Age younger than 20 years
    D) Renal dysfunction
    Ans: B
    Feedback:
    CNS stimulants are contraindicated for clients with severe hypertension. CNS stimulants are not contraindicated in clients younger than 20 years or clients with Parkinson's disease. Even though CNS stimulants are not contraindicated in clients with renal dysfunction, they need to be administered with extreme caution.

27. A client has been prescribed doxapram. The nurse would closely assess the client for which of the following after administration?
    A) Visual acuity
    B) Heart rate
    C) Urinary pattern
    D) Auditory function
    Ans: C
    Feedback:
    Urinary retention may result from doxapram administration, so the nurse should measure fluid intake and output and notify the primary health care provider if any problems occur. Analeptics do not cause impaired vision or tinnitus, nor do they cause tachycardia, so monitoring visual acuity, heart rate, and auditory function are not indicated.

28. A client is prescribed modafinil as treatment for narcolepsy. When teaching the client about the drug, which of the following would the nurse include in the instructions for the client?
    A) Record any changes in weight.
    B) Avoid coffee or tea.
    C) Record number of periods of sleepiness.
    D) Take over-the-counter antidepressants for depression.
    Ans: C
    Feedback:
    The nurse should instruct the client to keep a record of the number of times per day that periods of sleepiness occur and to bring this record to each visit to the primary health care provider or clinic. There is no need to avoid tea or coffee or to record weight. The client should be instructed not to take antidepressants for the duration of the dosage regimen.

29. A group of nursing students are reviewing information about the different types of CNS stimulants used. The students demonstrate understanding of the information when they identify drugs used for narcolepsy as being classified as which of the following?
    A) Anorexiant
    B) Analeptic
    C) Sympathomimetic
    D) Neuroleptic
    Ans: B
    Feedback:
    Analeptics are drugs used to treat narcolepsy because they stimulate the respiratory center of the brain. Anorexiants are drugs used to suppress the appetite. Sympathomimetic agents are drugs that act by stimulating the sympathetic nervous system. Neuroleptics are antipsychotic drugs used to treat psychotic disorders.

30. A nursing student is preparing a class presentation about CNS stimulants and their uses. After completing the presentation, the student determines that additional explanation is necessary when the class identifies which of the following as a CNS stimulant?
    A) Anorexiant
    B) Amphetamine
    C) Antipsychotic
    D) Analeptic
    Ans: C
    Feedback:
    Antipsychotics are not CNS stimulants. CNS stimulants include anorexiants, amphetamines, and analeptics.

31. A child is diagnosed with attention deficit hyperactivity disorder and is prescribed lisdexamfetamine. The child and his parents return to the clinic for a follow-up visit. The mother reports that his behavior has improved and “he's been sleeping okay at night.” She also says, “He seems to eat like a bird sometimes and he's so thin.” The child's weight and height are within the lower percentiles for his age. When developing the plan of care for this child, which nursing diagnosis would the nurse most likely identify as the priority?
    A) Disrupted Sleep Patterns
    B) Ineffective Coping
    C) Imbalanced Nutrition: Less Than Body Requirements
    D) Ineffective Breathing Pattern
    Ans: C
    Feedback:
    Based on the assessment findings, the child is clearly having difficulty with nutritional intake. Therefore, Imbalanced Nutrition: Less Than Body Requirements would be the priority. The mother reports that the child's sleeping is “okay,” so disturbed sleep patterns would not be an issue. There is no evidence to suggest ineffective coping or ineffective breathing pattern.

1. When describing the action of cholinesterase inhibitors to a class of nursing students, the instructor would include which of the following about their action? Select all that apply.
   A) The drugs decrease the level of acetylcholine in the CNS.
   B) They inhibit the breakdown of acetylcholine.
   C) The drugs slow neural destruction.
   D) They stop neural breakdown.
   E) The drugs increase excitatory neurotransmitters in the CNS.
   Ans: B, C
   Feedback:
   Cholinesterase inhibitors act to increase the level of acetylcholine in the CNS by inhibiting its breakdown and slowing neural destruction.

2. A client is prescribed donepezil. The nurse would assess the client for which of the following as a possible adverse reaction? Select all that apply.
   A) Anorexia
   B) Dizziness
   C) Headache
   D) Constipation
   E) Bradycardia
   Ans: A, B, C
   Feedback:
   The nurse would assess the client for generalized adverse reactions to cholinesterase inhibitors like donepezil, which would include anorexia, nausea, vomiting, diarrhea, dizziness, and headache.

3. When reviewing the medical record of a client who is prescribed galantamine, which of the following, if found, would the nurse identify as a contraindication for the drug requiring the nurse to contact the primary health care provider? Select all that apply.
   A) Hepatic disease
   B) Renal disease
   C) Pregnancy
   D) Lactation
   E) Hyperthyroidism
   Ans: A, C, D
   Feedback:
   Galantamine is contraindicated in clients who are pregnant, are lactating, or have hepatic disease.

4. Which condition would require the nurse to cautiously monitor a client who is receiving donepezil? Select all that apply.
   A) Hyperthyroidism
   B) Seizure disorder
   C) Renal disease
   D) Asthma
   E) GI bleeding
   Ans: B, C, D, E
   Feedback:
   Cholinesterase inhibitors, like donepezil, are used cautiously in clients with renal or hepatic disease, bladder obstruction, seizure disorder, sick sinus syndrome, GI bleeding, history of ulcer disease, and asthma.

5. A client is receiving donepezil. When reviewing the client's medication history, the nurse determines that the client is at increased risk for GI bleeding if the client is also taking which drug? Select all that apply.
   A) Naproxen (Naprosyn)
   B) Oxycodone (OxyContin)
   C) Acetaminophen (Tylenol)
   D) Ibuprofen (Motrin)
   E) Meperidine (Demerol)
   Ans: A, D
   Feedback:
   Use of nonsteroidal anti-inflammatory drugs (NSAIDs), such as naproxen or ibuprofen, in combination with donepezil place the client at an increased risk for GI bleeding. Oxycodone, acetaminophen, and meperidine do not increase the client's risk.

6. A client taking which of the following medications will see a decrease in effectiveness if rivastigmine (Exelon) is initiated? Select all that apply.
   A) Benztropine (Cogentin)
   B) Quetiapine (Seroquel)
   C) Glycopyrrolate (Robinul)
   D) Theophylline (Theo-Dur)
   E) Tiotropium (Spiriva)
   Ans: A, C, E
   Feedback:
   A client taking anticholinergic medications, like benztropine, glycopyrrolate, and tiotropium, will see a decrease in effectiveness if rivastigmine (Exelon) is initiated.

7. A client asks the nurse about using the herb ginkgo to improve his memory and thinking. Which of the following would the nurse need to integrate into the response about this herb? Select all that apply.
   A) There is scientific proof that this herb is effective.
   B) The effects may take at a minimum 4 weeks to occur.
   C) Mild GI discomfort and headache may occur with the herb.
   D) The herb needs to be taken at least four times a day to be effective.
   E) The herb if taken in large doses rarely leads to problems.
   Ans: B, C
   Feedback:
   Conflicting research both supports and disputes ginkgo's ability to enhance memory. Medical studies in both the United States and England have not demonstrated increases in mental function. Despite this research, the "brain herb" is still taken by healthy adults hoping to retain their current memory and cognitive function. The recommended dose is 40 mg standardized extract ginkgo three times daily. The effects of ginkgo may not be evident until after 4 to 24 weeks of treatment. The most common adverse reactions include mild GI discomfort, headache, and rash. Excessively large doses have been reported to cause diarrhea, nausea, vomiting, and restlessness.

8. A nurse should advise clients taking which medications to avoid the use of ginkgo? Select all that apply.
   A) Selective serotonin reuptake inhibitors
   B) Monoamine oxidase inhibitors
   C) NSAIDs
   D) Nonsalicylates
   E) Anticholinergics
   Ans: A, B
   Feedback:
   Ginkgo is contraindicated in clients taking SSRI or MAOI antidepressants, because of the risk of a toxic reaction. Cholinesterase inhibitors interact with anticholinergics. Ginkgo does not interact with NSAIDs or nonsalicylates.

9. To assess a client's cognitive ability, the nurse uses the Mini-Mental Status Examination. Which areas would the nurse assess? Select all that apply.
   A) Reading comprehension
   B) Calculation
   C) Orientation
   D) Recall
   E) Language
   Ans: B, C, D, E
   Feedback:
   The Mini-Mental Status Examination assesses a client's abilities on items such as orientation, calculation, recall, and language.

10. A review of a client's history reveals that the client takes ginkgo. Which of the following would the nurse assess for in the client as a common adverse reaction? Select all that apply.
    A) Hyperglycemia
    B) Headache
    C) Hypotension
    D) Rash
    E) GI discomfort
    Ans: B, D, E
    Feedback:
    The most common adverse reactions associated with ginkgo include mild GI discomfort, headache, and rash.

11. The nurse suspects that a client has consumed an excessive dose of ginkgo based on assessment of which of the following? Select all that apply.
    A) Constipation
    B) Diarrhea
    C) Vomiting
    D) Restlessness
    E) Drowsiness
    Ans: B, C, D
    Feedback:
    A client who takes an excessive dose of ginkgo may exhibit the following adverse reactions: diarrhea, nausea, vomiting, and restlessness.

12. A nurse is preparing to administer rivastigmine oral solution. The nurse decides to mix it in a small amount of which of the following? Select all that apply.
    A) Water
    B) Coffee
    C) Soda
    D) Tea
    E) Fruit juice
    Ans: A, C, E
    Feedback:
    A nurse administering rivastigmine (Exelon) oral solution can give the solution directly to the client or mix it in a small amount of water, cold fruit juice, or soda.

13. For a client who is receiving a cholinesterase inhibitor, which of the following can the nurse recommend to the client's caregiver to decrease the client's risk for injury? Select all that apply.
    A) Observe frequent drug holidays.
    B) Encourage the use of assistive devices.
    C) Keep the bed in a low position.
    D) Use night lights.
    E) Decrease drug dose if mobility worsens.
    Ans: B, C, D
    Feedback:
    To minimize the client's risk for injury, the nurse should encourage using assistive devices and keeping the bed in a low position, using night lights, and frequent monitoring by the caregiver.

14. A client is prescribed memantine for the treatment of dementia of Alzheimer's disease. The nurse should assess the client for which of the following as a possible adverse reaction?
    A) Confusion
    B) Dyspepsia
    C) Muscle cramps
    D) Vomiting
    Ans: A
    Feedback:
    When administering memantine to a client, a nurse should monitor the client for adverse reactions such as dizziness, headache, or confusion. Dyspepsia is an adverse reaction of rivastigmine; muscle cramps are an adverse reaction of donepezil; vomiting is an adverse reaction of rivastigmine and galantamine.

15. When reviewing a client's medical record, which condition would the nurse identify as contraindicating the use of donepezil?
    A) Bronchitis
    B) Asthma
    C) Vitamin deficiency
    D) Amnesia
    Ans: B
    Feedback:
    The administration of donepezil is contraindicated in clients with asthma. The drug is not contraindicated in clients with bronchitis, beriberi, or amnesia.

16. A client with AD is prescribed rivastigmine by the primary health care provider. The nurse would anticipate administering this drug by which route? Select all that apply.
    A) Intravenously
    B) Intramuscularly
    C) Orally
    D) Subcutaneously
    E) Transdermally
    Ans: C, E
    Feedback:
    The nurse should administer rivastigmine orally or transdermally to the client. Rivastigmine is not administered intravenously, intramuscularly, or subcutaneously.

17. A nurse is caring for a client receiving donepezil for treatment of Alzheimer's disease. Which of the following factors should the nurse monitor when assessing the client before administering the drug?
    A) Sexual habits
    B) Body weight
    C) Sleeping patterns
    D) Eating habits
    Ans: B
    Feedback:
    The nurse should monitor body weight and the vital signs of the client during the initial assessment. The nurse need not monitor the sexual habits, sleeping patterns, or eating habits of the client when administering cholinesterase inhibitors.

18. After administering rivastigmine to a client with AD, the nurse would continue to assess the client for which of the following adverse effects?
    A) Anorexia and nausea
    B) Cardiovascular dysfunction
    C) Diabetes mellitus
    D) Hypertension
    Ans: A
    Feedback:
    The adverse effects associated with the administration of cholinesterase inhibitors include anorexia and nausea. Cardiovascular dysfunction, diabetes mellitus, and hypertension are not adverse effects associated with the administration of cholinesterase inhibitors.

19. A client with AD receiving a cholinesterase inhibitor has a nursing diagnosis of Imbalanced Nutrition: Less Than Body Requirements. Which of the following would be most appropriate?
    A) Provide nutritious meals three times a day.
    B) Give foods that have the same consistency.
    C) Encourage careful chewing.
    D) Encourage visitors during mealtime.
    Ans: C
    Feedback:
    The nurse should encourage chewing action when feeding. The nurse need not provide nutritious meals three times a day; instead, frequent small nutritious meals would be more beneficial. Offering foods of different consistency and flavor is important in case the patient can handle one form better than another. The nurse should not encourage visitors during mealtime; mealtime should be simple and calm.

20. A client is prescribed donepezil for dementia. Review of the client's medication history reveals that the client uses NSAIDs for arthritis. The nurse would assess the client closely for which of the following?
    A) Decreased effectiveness of the NSAID
    B) Increased risk of NSAID toxicity
    C) Increased risk of GI bleeding
    D) Decrease GI absorption of the donepezil
    Ans: C
    Feedback:
    NSAIDs in conjunction with donepezil increase the client's risk for GI bleeding. The effectiveness of the NSAID does not decrease, nor does the GI absorption of donepezil. There is no increase in the risk for NSAID toxicity.

21. The caregiver of a client diagnosed with AD asks the nurse about the prescribed therapy with rivastigmine and about how the drug works. The nurse would integrate knowledge of which action in the response to the caregiver?
    A) Increases the level of acetylcholine in the CNS
    B) Decreases the level of neurotoxins in the brain
    C) Increases the level of cholinesterase in the blood
    D) Increases the level of adenosine triphosphate in the blood
    Ans: A
    Feedback:
    Administration of cholinesterase inhibitors results in an increase in the level of acetylcholine in the CNS. Administration of cholinesterase inhibitors does not decrease the neurotoxins in the brain or increase the level of adenosine triphosphate in the blood. Cholinesterase inhibitors inhibit and do not increase the level of cholinesterase in the blood.

22. A caregiver of a client diagnosed with AD asks the nurse about the cholinesterase inhibitor galantamine prescribed for the client. Which response by the nurse would be most appropriate?
    A) "The drug will help to cure the memory problems the client is experiencing."
    B) "Once the symptoms improve, the drug will most likely be stopped."
    C) "These drugs help to slow the progression of the disease."
    D) "This drug is primarily given to control the delirium the client is experiencing."
    Ans: C
    Feedback:
    The progression of memory loss associated with dementia is treated with cholinesterase inhibitors. These drugs slow progression but do not cure dementia. These drugs are given to clients with mild to moderate dementia, but they do not treat any delirium that the clients may experience. Cholinesterase inhibitors are not frequently used in late-stage AD.

23. After teaching a group of nursing students about cholinesterase inhibitors, the instructor determines that additional teaching is needed when the students identify which drug as an example?
    A) Rivastigmine
    B) Donepezil
    C) Memantine
    D) Galantamine
    Ans: C
    Feedback:
    Memantine is an example of an NMDA receptor antagonist. Rivastigmine, donepezil, and galantamine are cholinesterase inhibitors.

24. After teaching the caregiver of a client prescribed transdermal rivastigmine, the nurse determines that the teaching was successful when the caregiver states which of the following?
    A) "I'll apply a new patch every other day."
    B) "The patch should be placed on a hairless area."
    C) "I'll make sure to put the patch where he can see it."
    D) "I can use the same spot once or twice a week."
    Ans: B
    Feedback:
    Rivastigmine patches are changed on a daily basis and rotated to a clean, dry, and hairless area. Because the patient is experiencing dementia, the site for application should be where the patient is not able to pick at or remove the patch. The upper or lower portions of the back are recommended for patch administration. Because the same site should not be used more than once every 2 weeks, the caregiver should be instructed to make a chart of the back and indicate where patches have been applied during the last 14 days.

25. The daughter of a client with AD who is receiving cholinesterase inhibitor therapy tells the nurse that her father has been getting more and more clumsy lately, saying, “He's almost fallen several times and he often gets out of bed at night. That's when I'm most concerned that he will fall.” The daughter reports that his appetite is fair and that he takes his medication as prescribed. When developing the client's plan of care, the nurse would identify which nursing diagnosis as the priority?
    A) Imbalanced Nutrition: Less Than Body Requirements
    B) Risk for Injury
    C) Ineffective Self Health Management
    D) Deficient Knowledge: drug therapy
    Ans: B
    Feedback:
    Based on the daughter's report, the client is at high risk for injury and this would be the priority. Imbalanced nutrition might be appropriate based on the daughter's report that her father's appetite is fair. However, additional information is needed to determine if this nursing diagnosis would be more of a priority than the risk for injury. The client is receiving his medication as prescribed, so ineffective self health management is not a concern. There is no evidence to suggest that there is a lack of knowledge about the drug therapy.

26. A group of nursing students are reviewing the stages of AD. They demonstrate understanding of the information when they identify which of the following as characteristic of preclinical AD?
    A) Client's changes in thinking are readily evident to family members.
    B) The client may exhibit moderate levels of anxiety.
    C) The ability to function is significantly limited.
    D) There are no cognitive changes noted.
    Ans: D
    Feedback:
    Preclinical AD is characterized by no changes in cognitive or functional ability. With mild cognitive impairment, the changes in thinking are noticeable to the client and family members, and the person may experience mild to moderate anxiety. In dementia due to AD, memory, thinking, and behavior limit the person's ability to function.

27. A nurse is reviewing the action of memantine. The nurse understands that this drug addresses which of the following?
    A) Acetylcholine
    B) Glutamate
    C) Serotonin
    D) Dopamine
    Ans: B
    Feedback:
    Memantine, an NMDA receptor antagonist, is thought to work by decreasing the excitability of neurotransmission caused by an excess of the amino acid glutamate in the CNS.

28. After teaching a group of nursing students about confusion and how it differs from dementia, the instructor determines that the teaching was successful when the students identify which of the following about delirium? Select all that apply.
    A) The onset occurred suddenly.
    B) Memory is significantly impaired.
    C) Sensory impairment occurs.
    D) Environmental changes are needed for safety.
    Ans: A, C
    Feedback:
    Delirium occurs suddenly, affects the senses, and is reversible when the cause is found. In contrast, dementia occurs slowly, affects memory and judgment, and is not reversible, often requiring a change in the environment to maintain safety.

1. After teaching a group of nursing students about antianxiety drugs, the instructor determines that the teaching was successful when the students identify which as an example? Select all that apply.
   A) Alprazolam
   B) Buspirone
   C) Hydroxyzine
   D) Chlordiazepoxide
   E) Lorazepam
   Ans: A, D, E
   Feedback:
   Alprazolam, chlordiazepoxide, and lorazepam are examples of benzodiazepine antianxiety drugs. Buspirone and hydroxyzine are considered nonbenzodiazepines.

2. The nurse is reviewing the medication record of a client who is prescribed a nonbenzodiazepine. Which of the following would the nurse expect to find? Select all that apply.
   A) Alprazolam
   B) Buspirone
   C) Hydroxyzine
   D) Chlordiazepoxide
   E) Doxepin
   Ans: B, C, E
   Feedback:
   Buspirone, doxepin, and hydroxyzine are examples of nonbenzodiazepine antianxiety drugs. Alprazolam and chlordiazepoxide are benzodiazepines.

3. A nurse is administering an antianxiety agent to a client. The nurse understands that long-term use of which of the following anxiolytics would be most likely to lead to physical or psychological tolerance? Select all that apply.
   A) Alprazolam
   B) Buspirone
   C) Hydroxyzine
   D) Chlordiazepoxide
   E) Doxepin
   Ans: A, D
   Feedback:
   Although long-term use of benzodiazepines such as alprazolam and chlordiazepoxide and nonbenzodiazepines such as buspirone, hydroxyzine, and doxepin can result in physical or psychological dependence, benzodiazepines are more likely to result in physical dependence and tolerance.

4. A nurse is administering an antianxiety agent that exerts its anxiolytic effects by potentiating the effects of gamma-aminobutyric acid (GABA). Which of the following might the nurse be administering? Select all that apply.
   A) Alprazolam
   B) Buspirone
   C) Hydroxyzine
   D) Chlordiazepoxide
   E) Lorazepam
   Ans: A, D, E
   Feedback:
   Benzodiazepines like alprazolam, chlordiazepoxide, and lorazepam exert their anxiolytic effects by potentiating the effects of gamma-aminobutyric acid (GABA). Nonbenzodiazepines exert their effects in different ways.

5. A nurse is preparing to administer an anxiolytic drug. The nurse integrates knowledge of this group of drugs, understanding that the drugs can be used in the management of which of the following conditions? Select all that apply.
   A) Alcohol withdrawal
   B) Diabetic neuropathy
   C) Seizures
   D) Panic attacks
   E) Hypertension
   Ans: A, C, D
   Feedback:
   Anxiolytic drugs can be used in the management of anxiety disorder, panic attacks, convulsions, seizures, and alcohol withdrawal and for preanesthetic sedation and muscle relaxation.

6. After administering an anxiolytic, the nurse assesses the client for adverse reactions. Which of the following would the nurse identify as a common early reaction to this group of drugs? Select all that apply.
   A) Headache
   B) Sedation
   C) Lightheadedness
   D) Dizziness
   E) Hypertension
   Ans: A, B, C, D
   Feedback:
   Common early reactions caused by anxiolytics include mild drowsiness, sedation, lightheadedness, dizziness, and headache.

7. A nurse suspects that a client who is receiving lorazepam may be experiencing benzodiazepine withdrawal based on assessment of which of the following? Select all that apply.
   A) Anxiety
   B) Tremor
   C) Photophobia
   D) Insomnia
   E) Metallic taste
   Ans: A, B, C, E
   Feedback:
   Symptoms of benzodiazepine withdrawal include increased anxiety, concentration difficulties, tremor, and sensory disturbances, such as paresthesias, photophobia, hypersomnia, and metallic taste.

8. A nurse is reviewing the medical record of a client with anxiety who is to receive an antianxiety agent as part of the treatment. The nurse recognizes that benzodiazepines would not be used based on which of the following conditions? Select all that apply.
   A) Cataracts
   B) Acute narrow-angle glaucoma
   C) Hypotension
   D) Psychoses
   E) Pregnancy
   Ans: B, D, E
   Feedback:
   The use of benzodiazepines is contraindicated in clients with known hypersensitivity, psychoses, acute narrow-angle glaucoma, and pregnancy.

9. The nurse is assessing an infant at a well-child visit and notices that the infant has been losing weight and is lethargic. The mother is breastfeeding the child. The nurse questions the mother about any medications that she might be taking. Which of the following, if being taken by the mother, would alert the nurse to a problem? Select all that apply.
   A) Alprazolam
   B) Buspirone
   C) Hydroxyzine
   D) Chlordiazepoxide
   E) Lorazepam
   Ans: A, D, E
   Feedback:
   Benzodiazepines like alprazolam, chlordiazepoxide, and lorazepam taken by a breastfeeding mother can result in lethargy and weight loss in the infant. Buspirone and hydroxyzine do not appear to have the same effect.

10. A client is hospitalized and is prescribed diazepam. Before administering the drug, which of the following information should the nurse obtain? Select all that apply.
    A) Complete medical history
    B) Mental status exam
    C) Anxiety level
    D) Pain assessment
    E) Medication history
    Ans: A, B, C
    Feedback:
    Before starting anxiolytic therapy in a hospitalized client, the nurse obtains a complete medical history, including mental status and anxiety level.

11. A client is prescribed lorazepam. The nurse understands that this drug can be given by which route? Select all that apply.
    A) Intramuscular
    B) Oral
    C) Transdermal
    D) Intravenous
    E) Rectal
    Ans: A, B, D
    Feedback:
    Lorazepam can be administered to a client via the oral, IM, and IV routes.

12. During assessment of a client, a nurse suspects that the client is experiencing anxiety. Which of the following would support the nurse's suspicion? Select all that apply.
    A) Facial flushing
    B) Tense posture
    C) Extreme restlessness
    D) Somnolence
    E) Facial grimaces
    Ans: B, C, E
    Feedback:
    During the intake history, the nurse observes the client for behavioral signs indicating anxiety (e.g., inability to focus, extreme restlessness, facial grimaces, tense posture).

13. Before administering a prescribed anxiolytic to a client, which of the following would the nurse include in the physical assessment of the client? Select all that apply.
    A) Blood pressure
    B) Blood glucose
    C) Pulse
    D) Respiratory rate
    E) Weight
    Ans: A, C, D, E
    Feedback:
    The nurse's preadministration physical assessment for the administration of an anxiolytic should include blood pressure, pulse, respiratory rate, and weight.

14. A nurse suspects that a client is experiencing anxiety. Which physical assessment findings would support the nurse's suspicion? Select all that apply.
    A) Hypotension
    B) Decreased respiratory rate
    C) Increased muscle tension
    D) Pale skin
    E) Bradycardia
    Ans: C, D
    Feedback:
    Physiological manifestations of anxiety can include hypertension, tachycardia, increased rate and depth of respirations, increased muscle tension, and cool, pale skin.

15. An older adult client is experiencing anxiety. Which anxiolytic drug would the nurse identify as being relatively safe to administer to this client at a normal dose? Select all that apply.
    A) Buspirone
    B) Lorazepam
    C) Oxazepam
    D) Alprazolam
    E) Diazepam
    Ans: A, B, C
    Feedback:
    Lorazepam, oxazepam, and buspirone are relatively safer for older adult clients when given at normal doses.

16. A nurse is preparing to administer an anxiolytic agent via intramuscular injection. Which of the following would be most important for the nurse to keep in mind? Select all that apply.
    A) The client should be monitored closely for 3 hours postinjection.
    B) Intramuscular injection should be given in chronic states.
    C) The client should remain in a lying position for about 30 minutes.
    D) The drug should be administered into a large muscle mass.
    E) The client should be kept conscious for at least 1 hour after administration.
    Ans: A, D
    Feedback:
    Intramuscular administration of an anxiolytic should be done primarily in an acute state. The drug should be administered in a large muscle mass, the client should be observed closely for at least 3 hours, and the client should be kept lying down for 30 minutes to 3 hours after drug administration.

17. A client who is prescribed an anxiolytic tells the nurse that she is constipated. Which of the following would be most appropriate for the nurse to suggest? Select all that apply.
    A) Stop taking the drug.
    B) Increase fluid intake.
    C) Increase fiber intake.
    D) Ask to have the drug given by injection.
    E) Take the drug on an empty stomach.
    Ans: B, C
    Feedback:
    Clients receiving an anxiolytic should be advised to increase fluid and fiber intake to address constipation. The drug should not be stopped or changed to an injectable form. Taking the drug on an empty stomach may lead to GI upset.

18. A nurse is preparing a teaching plan for a client who is prescribed an anxiolytic. As part of the plan, the nurse addresses medications that should be avoided to reduce the risk of increased CNS depression and sedation. Which of the following would the nurse include? Select all that apply.
    A) Alcohol
    B) Analgesics
    C) Digoxin
    D) Tricyclic antidepressants
    E) Antipsychotics
    Ans: A, B, D, E
    Feedback:
    Alcohol, analgesics, tricyclic antidepressants, and antipsychotics should be used with caution with anxiolytics due to increased CNS depression and increased risk of sedation.

19. A nurse is caring for a client who is receiving alprazolam. The nurse would be alert for which of the following as an initial adverse reaction with this drug?
    A) Heartburn
    B) Anorexia
    C) Headache
    D) Allergy
    Ans: C
    Feedback:
    The nurse should assess for headache as the initial adverse reaction in the client after administering alprazolam. Heartburn, anorexia, and allergy are adverse reactions observed in the client after administering salicylates.

20. A client who is prescribed buspirone therapy also is receiving digoxin for heart failure. The nurse understands that this client would be at increased risk for which of the following?
    A) Sedation
    B) Respiratory depression
    C) Digitalis toxicity
    D) Central nervous system depression
    Ans: C
    Feedback:
    The client faces an increased risk for digitalis toxicity due to the effect of interaction of buspirone with digoxin. Increased risk for sedation and respiratory depression are caused by the interaction of buspirone with tricyclic antidepressants and antipsychotics. Increased risk for central nervous system depression is caused by the interaction of buspirone with alcohol.

21. A client with anxiety is prescribed anxiolytic therapy. Before administering the drug, the nurse assesses the client for symptoms of anxiety. Which of the following would the nurse expect to find?
    A) Increased blood pressure
    B) Decreased muscle tension
    C) Increased glucose level
    D) Decreased pulse rate
    Ans: A
    Feedback:
    Increased blood pressure is a manifestation of anxiety. Additional manifestations include increased pulse rate and increased muscle tension. Increased glucose levels are not associated with anxiety.

22. A nurse is assigned to care for a hospitalized client with anxiety. Buspirone is prescribed. When reviewing the client's history, which of the following, if found, would the nurse identify as a contraindication for this drug?
    A) Cataract
    B) Diabetic retinopathy
    C) Acute gout
    D) Psychoses
    Ans: D
    Feedback:
    The use of buspirone is contraindicated in clients with hypersensitivity, psychoses, and acute narrow-angle glaucoma. Ethambutol is contraindicated in clients with cataracts and diabetic retinopathy. Pyrazinamide is contraindicated in clients with acute gout.

23. A client who was receiving a benzodiazepine for treatment of anxiety tells the nurse that he has decided to discontinue the treatment. Which of the following would the nurse include in the teaching plan for this client?
    A) "Be sure to gradually decrease the dosage over time."
    B) "It's fine to just stop taking the medication."
    C) "You need to first increase the dose and then stop."
    D) "It's important that you continue the medication even if you want to stop."
    Ans: A
    Feedback:
    The nurse should suggest the client gradually decrease the dosage schedule to avoid withdrawal symptoms. It is not advisable for the nurse to suggest just stopping the medication, increasing the dosage, or continuing with the medication as prescribed.

24. A client admitted to the health care facility for alcohol withdrawal has been prescribed an antianxiety medication. The nurse instructs the client about the need for cessation of alcohol consumption based on the understanding that the client would be at increased risk for which of the following?
    A) Antianxiety drug toxicity
    B) Respiratory depression
    C) Sedation
    D) CNS depression
    Ans: D
    Feedback:
    The nurse should suggest that the client stop consuming alcohol while therapy is going on because such consumption increases the risk for CNS depression. Increased risk for digitalis toxicity is identified when the client is taking digoxin for management of cardiac problems. Increased risk for sedation and respiratory depression is identified when tricyclic antidepressants or antipsychotics are being used simultaneously with an antianxiety agent.

25. A client receiving antianxiety drug therapy complains of constipation. The nurse understands that this is the result of which of the following?
    A) Excess fibrous food in the diet
    B) Overdose of an antianxiety drug
    C) Slowed intestinal transit time
    D) Oral administration of the drug
    Ans: C
    Feedback:
    Constipation results from the action of the antianxiety agents, which slow intestinal transit time. An increased fiber intake would help combat the constipation. Constipation does not result from an overdose of the drug or from oral administration.

26. A client who experiences panic attacks in social situations has been prescribed an antianxiety medication. The nurse would assess which of the following before administering the drug?
    A) Temperature
    B) Blood pressure
    C) Blood sugar
    D) Red blood cell count
    Ans: B
    Feedback:
    The nurse should check the client's blood pressure before administering the antianxiety drug because physiologic manifestations of panic attacks can include increased blood pressure. Temperature, blood sugar, and RBC count are not adversely affected by antianxiety drugs.

27. A nurse is caring for an older adult client who is prescribed an antianxiety agent parenterally. Which of the following would be most important for the nurse to do?
    A) Arrange for a blood transfusion.
    B) Provide fiber-rich food.
    C) Provide plenty of fluids.
    D) Have resuscitative equipment ready.
    Ans: D
    Feedback:
    The nurse should have resuscitative equipment ready because older adult clients may experience apnea and cardiac arrest during the treatment. Providing fiber-rich food and plenty of fluids is appropriate to prevent constipation and is unrelated to the use of the parenteral route. The need for a blood transfusion would not arise during the treatment.

28. A client is prescribed a benzodiazepine as treatment for anxiety. After administration of the drug, the client reports dizziness and lightheadedness. Which nursing diagnosis would the nurse identify as a priority?
    A) Impaired Comfort
    B) Risk for Injury
    C) Ineffective Coping
    D) Deficient Knowledge
    Ans: B
    Feedback:
    Dizziness and lightheadedness place the client at risk for falls; therefore, Risk for Injury would be the priority. Impaired Comfort would be appropriate if the client reported problems such as dry mouth or constipation. Ineffective Coping would be appropriate if the client reported continued feelings of anxiety. There is no evidence to suggest that the client lacks knowledge of the drug therapy.

29. A client is brought to the emergency department with suspected overdose of a benzodiazepine. Which of the following should the nurse anticipate administering to counteract the effects of the overdose?
    A) Naloxone
    B) Naltrexone
    C) Flumazenil
    D) Diazepam
    Ans: C
    Feedback:
    Flumazenil is the antidote for benzodiazepine toxicity. Naloxone is used to reverse the effects of opioids. Naltrexone is used primarily to treat alcohol dependence and to block the effects of suspected opioids if they are being used by a person undergoing treatment for alcohol dependence. Diazepam is a benzodiazepine and would only increase the client's toxicity.

30. A client who is receiving a benzodiazepine tells the nurse that his mouth feels really dry. Which of the following would the nurse include in the teaching plan for this client?
    A) "Try drinking about 8 ounces of water at least every 2 hours."
    B) "Sucking on hard sugarless candy might help you."
    C) "Make sure you eat a lot of green leafy vegetables."
    D) "Change your position slowly as you get out of bed."
    Ans: B
    Feedback:
    For dry mouth, the nurse should suggest sucking on hard, sugarless candies or chewing sugarless gum. Frequent sips of water would also help, but drinking 8 ounces of water every 2 hours could lead to fluid overload. Eating green leafy vegetables would help with constipation. Changing positions slowly would be appropriate if the client reported dizziness or lightheadedness.

1. A nurse understands that sedatives and hypnotics are used to treat insomnia, which may be caused by which of the following? Select all that apply.
   A) Hospitalization
   B) Chronic pain
   C) Stress
   D) Anxiety
   E) Jet lag
   Ans: A, B, C, D, E
   Feedback:
   Insomnia may be caused by lifestyle changes, such as a new job, moving to a new town, or returning to school; jet lag; chronic pain; headaches; stress; anxiety; or hospitalization.

2. After teaching a group of students about sedatives and hypnotics, the instructor determines that the teaching was successful when the students identify which of the following as an example of a benzodiazepine-type hypnotic and sedative drug? Select all that apply.
   A) Temazepam
   B) Eszopiclone
   C) Secobarbital
   D) Triazolam
   E) Zaleplon
   Ans: A, D
   Feedback:
   Temazepam and triazolam are examples of benzodiazepine-type hypnotic and sedative drugs.

3. A nurse is preparing to administer a sedative and hypnotic drug to a client. The nurse identifies the drug as a nonbenzodiazepine-type hypnotic and sedative drug. Which of the following might the nurse be preparing to administer? Select all that apply.
   A) Temazepam
   B) Eszopiclone
   C) Zolpidem
   D) Triazolam
   E) Zaleplon
   Ans: B, C, E
   Feedback:
   Eszopiclone, zolpidem, and zaleplon are examples of nonbenzodiazepine-type hypnotic and sedative drugs. Temazepam and triazolam are benzodiazepines.

4. A group of nursing students are reviewing information about sedatives and hypnotics. The students demonstrate understanding of the information when they identify which of the following as an example of a barbiturate-type hypnotic and sedative drug? Select all that apply.
   A) Pentobarbital
   B) Eszopiclone
   C) Zolpidem
   D) Triazolam
   E) Secobarbital
   Ans: A, E
   Feedback:
   Pentobarbital and secobarbital are examples of barbiturate-type hypnotic and sedative drugs. Eszopiclone and zolpidem are nonbenzodiazepine sedative and hypnotic drugs. Triazolam is a benzodiazepine sedative and hypnotic drug.

5. A nurse anticipates the use of a sedative and hypnotic for which of the following? Select all that apply.
   A) Headache
   B) Status epilepticus
   C) Preoperative sedation
   D) Insomnia
   E) Hypertension
   Ans: B, C, D
   Feedback:
   Sedatives and hypnotics are used in the treatment of insomnia, convulsions, status epilepticus, and seizures and in preoperative and conscious sedation.

6. A nurse would cautiously administer sedatives and hypnotics to clients with which of the following? Select all that apply.
   A) Hepatic impairment
   B) Hypertension
   C) Renal impairment
   D) Mental health problems
   E) Habitual alcohol use
   Ans: A, C, D, E
   Feedback:
   A nurse should use caution when administering sedatives and hypnotics to clients with hepatic or renal impairment, habitual alcohol use, and mental health problems and in clients who are lactating.

7. A nurse suggests melatonin to a client traveling overseas on a 2-week business trip to help with jet lag. The nurse would alert the client to the possibility of which adverse reaction? Select all that apply.
   A) Depression
   B) Hypotension
   C) Headache
   D) Dry mouth
   E) Constipation
   Ans: A, C
   Feedback:
   The nurse should advise the client that headache, depression, and allergic reaction are possible adverse reactions that can occur with the use of melatonin.

8. Before administering a sedative or hypnotic to a client, the nurse would assess which of the following? Select all that apply.
   A) Blood pressure
   B) Pulse
   C) Oxygen saturation level
   D) Respiratory rate
   E) Temperature
   Ans: A, B, D
   Feedback:
   The nurse's preadministration assessment for a client receiving a sedative or hypnotic should include blood pressure, pulse, and respiratory rate.

9. In addition to obtaining the client's vital signs, which of the following questions should the nurse use to assess the client's status when the client is receiving temazepam for a sleep disturbance? Select all that apply.
   A) "Is the client uncomfortable?"
   B) "Is it too early for the client to receive the drug?"
   C) "Has a consent form been signed for the procedure?"
   D) "Does the client receive insulin to treat hyperglycemia?"
   E) "Are there disturbances in the environment that may keep the client awake?"
   Ans: A, B, E
   Feedback:
   In addition to obtaining the client's vital signs, the nurse should ask the following questions to assess the client's status when the client is receiving temazepam for a sleep disturbance: Is the client uncomfortable? Is it too early for the client to receive the drug? Are there disturbances in the environment that may keep the client awake? There is no need for a consent form to be signed. Asking about insulin use has no impact on the use of the drug.

10. In addition to obtaining the client's vital signs, which of the following questions would be most appropriate to consider before administering a prescribed medication to a client for sedation? Select all that apply.
    A) Is the drug being used in preparation for a surgical procedure?
    B) Is the timing of the drug administration correct?
    C) Has a consent form for the procedure been signed?
    D) Is the client experiencing discomfort related to pain?
    E) Are there disturbances in the environment that may keep the client awake?
    Ans: A, B, C
    Feedback:
    In addition to obtaining the client's vital signs, the nurse should ask the following questions in preparation for a client to receive a prescribed sedative: Is the drug being used in preparation for a surgical procedure? Is the drug's administration correctly timed? Has a consent form for the procedure been signed before the medication is given?

11. After administering a hypnotic drug to a client, the nurse would assess which of the following? Select all that apply.
    A) Blood pressure
    B) Blood glucose level
    C) Drug efficacy
    D) Level of consciousness
    E) Respiratory rate
    Ans: A, C, D, E
    Feedback:
    The nurse's ongoing assessment for the administration of a hypnotic drug should include assessment of the client's vital signs, level of consciousness, and drug efficacy.

12. The nurse should withhold the hypnotic drug if assessment reveals which of the following? Select all that apply.
    A) Respiratory rate is below 10 breaths/min.
    B) Blood glucose is above 200 mg/dL.
    C) The client appears lethargic.
    D) Blood pressure drops significantly.
    E) The client is having trouble sleeping.
    Ans: A, C, D
    Feedback:
    The nurse should hold the hypnotic drug if the respiratory rate is below 10 breaths/min, the client appears lethargic, or the blood pressure drops significantly. Difficulty sleeping is the indication for administering the drug. Blood glucose is unrelated to the use of hypnotics.

13. Which of the following are examples of supportive care the nurse can provide to a client receiving a sedative or hypnotic drug to promote the effects of the drug? Select all that apply.
    A) Darkening the client's room
    B) Discouraging caffeine intake
    C) Providing a quiet atmosphere
    D) Administering back rubs
    E) Waking the client to check consciousness
    Ans: A, B, C, D
    Feedback:
    To promote the effects of the sedative or hypnotic drug, the nurse can provide supportive care, such as giving back rubs, using night lights or making the room dark, providing a quiet atmosphere, and discouraging caffeine use.

14. The nurse would assess an older adult client who is receiving sedatives or hypnotics for an increased risk for which of the following? Select all that apply.
    A) Hypertension
    B) Paradoxical reactions
    C) Dizziness
    D) Confusion
    E) Ataxia
    Ans: B, C, D, E
    Feedback:
    The older adult client is at greater risk for oversedation, dizziness, confusion, ataxia, and paradoxical reactions to sedative and hypnotic drugs.

15. A client is prescribed secobarbital. The nurse understands that the client is at increased risk of respiratory depression. The nurse plans to assess the client's respiratory status at which time? Select all that apply.
    A) 5 to 10 minutes after drug administration
    B) 10 to 15 minutes after drug administration
    C) 30 to 60 minutes after drug administration
    D) Before drug administration
    E) 60 to 90 minutes after drug administration
    Ans: C, D
    Feedback:
    The nurse carefully assesses respiratory function before administering a sedative, 30 to 60 minutes after administering the drug, and frequently thereafter.

16. A 14-year-old client with insomnia is prescribed estazolam. After administering the drug, the nurse would assess the client for which of the following as an adverse reaction?
    A) Muscle pain
    B) Chest pain
    C) Heartburn
    D) Taste change
    Ans: C
    Feedback:
    One of the adverse reactions of estazolam is heartburn. Muscle pain is an adverse reaction of zolpidem tartrate. Chest pain and taste change are caused by eszopiclone.

17. A client admitted to the health care facility for insomnia related to stress is prescribed a sedative. Which of the following would the nurse include in the plan of care to promote the effectiveness of the drug?
    A) Encourage plenty of fluids.
    B) Provide back rubs.
    C) Offer fiber-rich food.
    D) Give the client coffee or tea.
    Ans: B
    Feedback:
    Back rubs are relaxing and help promote the effectiveness of the sedative. Fluids and fiber prevent constipation. Coffee and tea contain caffeine, which could interfere with the drug's effectiveness.

18. A client is prescribed flurazepam. When explaining the drug to the client, the nurse would include which of the following as its effect?
    A) Decreased stress
    B) Easing of pain
    C) Induction of sleep
    D) Improvement in circulation
    Ans: C
    Feedback:
    Flurazepam induces sleep. Adrenergic drugs help to relieve stress. Analgesics are used to ease pain. Circulation can be improved by exercising.

19. A nurse would cautiously administer sedatives and hypnotics to which of the following clients?
    A) Clients who are lactating
    B) Clients with heart trouble
    C) Clients with hypertension
    D) Clients with gastrointestinal upset
    Ans: A
    Feedback:
    The nurse should exercise caution when administering sedatives and hypnotics to lactating clients. Sedatives and hypnotics are not contraindicated in clients with heart trouble, hypertension, or gastrointestinal problems, nor do they require cautious use.

20. A client is admitted to a local health care facility for chronic insomnia. The primary health care provider prescribes eszopiclone. Which of the following would the nurse encourage the client to avoid when teaching the client about this drug?
    A) Strenuous work
    B) Alcohol consumption
    C) Tobacco use
    D) Direct sunlight
    Ans: B
    Feedback:
    The nurse should instruct the client to avoid alcohol during the period of eszopiclone therapy as alcohol interacts with eszopiclone to cause CNS depression. Strenuous work, use of tobacco, and exposure to sunlight are not of concern.

21. A nurse emphasizes the need to avoid caffeine and caffeinated beverages with a client undergoing treatment for insomnia based on the nurse's understanding that caffeine will most likely have which effect?
    A) Wakefulness
    B) Depression
    C) Delirium
    D) Restlessness
    Ans: A
    Feedback:
    Clients with insomnia should not drink beverages containing caffeine because it can cause wakefulness. Caffeine does not cause depression, delirium, or restlessness.

22. After teaching a group of nursing students about sedatives and hypnotics, the instructor determines that additional teaching is needed when the students identify the absorption of which drug as being affected by a high-fat meal?
    A) Zolpidem
    B) Eszopiclone
    C) Ramelteon
    D) Zaleplon
    Ans: A
    Feedback:
    Zolpidem should not be taken with food. A high-fat meal or snack can interfere with the absorption of the following drugs: eszopiclone, ramelteon, and zaleplon.

23. Which nursing diagnosis would most likely be a priority for a client receiving a hypnotic who is experiencing confusion and excessive drowsiness in the morning?
    A) Ineffective Breathing Pattern
    B) Risk for Injury
    C) Ineffective Coping
    D) Impaired Self Health Management
    Ans: B
    Feedback:
    Confusion and excessive morning drowsiness would impact the client's ability to function safely, thereby placing the client at risk for injury. Ineffective Breathing Pattern would be appropriate if the client experienced respiratory depression. Ineffective Coping would be appropriate if more than short-term use of the agent would be required. Impaired Self Health Management would be appropriate if the client was unable to comply with or adhere to the prescribed medication regimen.

24. A nurse is preparing an in-service presentation about hypnotics. Which of the following would the nurse plan to include?
    A) Usually given during the daytime hours
    B) Helpful in reducing anxiety
    C) Most likely administered at bedtime
    D) Exert a calming effect
    Ans: C
    Feedback:
    A hypnotic is a drug that induces drowsiness or sleep, meaning it allows the patient to fall asleep and stay asleep. Hypnotics are given at night or bedtime. A sedative is a drug that produces a relaxing, calming effect. Sedatives are usually given during daytime hours, and although they may make the patient drowsy, they usually do not produce sleep.

25. A client who is prescribed a hypnotic asks the nurse, "About how long will I be taking this medication?" Which time frame would the nurse most likely include in the response?
    A) 2 weeks
    B) 4 weeks
    C) 6 weeks
    D) 8 weeks
    Ans: A
    Feedback:
    Sedatives and hypnotics are best given for no more than 2 weeks and preferably for a shorter time. Sedatives and hypnotics can become less effective after they are taken for a prolonged period.

26. A client is prescribed zolpidem. As part of the teaching plan, the nurse would emphasize the need to plan for the proper amount of sleep. The nurse determines that the teaching plan was successful when the client states that he will plan for how many hours of sleep at night?
    A) 5 to 6 hours
    B) 7 to 8 hours
    C) 9 to 10 hours
    D) 11 to 12 hours
    Ans: B
    Feedback:
    With zolpidem it is important that the client plan to have 7 to 8 hours of sleep to reduce the risk of memory loss and confusion with this drug.

27. A nurse would anticipate that a client receiving a sedative or hypnotic would experience an increased sedative effect if the client was also receiving which of the following? Select all that apply.
    A) Antihistamines
    B) Phenothiazines
    C) Opioid analgesics
    D) NSAIDs
    E) Anticoagulants
    Ans: A, B, C
    Feedback:
    An increased sedative effect occurs when sedatives or hypnotics are given with antihistamines, phenothiazines, and opioid analgesics.

28. A client asks the nurse about using valerian to help him sleep. Which response by the nurse would be most appropriate? Select all that apply.
    A) "The herb is generally considered safe."
    B) "You need to take it about 4 hours before bedtime."
    C) "It might take 2 to 4 weeks before you notice the full benefit."
    D) "You can combine it with other calming herbs."
    E) "If you stop using it, you won't have any withdrawal symptoms."
    Ans: A, C, D
    Feedback:
    Valerian is classified as "generally recognized as safe" (GRAS) for use in the United States. When used as an aid to sleep, valerian is taken approximately 1 hour before bedtime. It can be used in combination with other calming herbs, such as lemon balm or chamomile. It may take 2 to 4 weeks before the full therapeutic effect (i.e., improvement of mood and sleep patterns) occurs. Individuals have been known to experience withdrawal symptoms when they stop taking valerian abruptly.

1. A nurse caring for a client taking amitriptyline for depression should monitor the client for which of the following adverse events? Select all that apply.
   A) Sedation
   B) Diarrhea
   C) Incontinence
   D) Dry mouth
   E) Photosensitivity
   Ans: A, D, E
   Feedback:
   The use of tricyclic antidepressants like amitriptyline can cause the following side effects: sedation, dry mouth, visual disturbances, urinary retention, constipation, and photosensitivity.

2. When describing the action of antidepressants, the nursing instructor would include the belief that they exert their effect by causing slow adaptive changes to which of the following receptor systems? Select all that apply.
   A) Beta-adrenergic
   B) Baroreceptors
   C) Norepinephrine
   D) Serotonin
   E) Nicotinic
   Ans: C, D
   Feedback:
   New research indicates that the effects of antidepressants are related to slow adaptive changes in norepinephrine and serotonin receptor systems.

3. After teaching a group of nursing students about the action of antidepressants, the instructor determines that the teaching was successful when the students identify which of the following classes as exerting their effects by inhibiting reuptake of norepinephrine and serotonin? Select all that apply.
   A) Amitriptyline
   B) Bupropion
   C) Clomipramine
   D) Duloxetine
   E) Venlafaxine
   Ans: A, C
   Feedback:
   Tricyclic antidepressants like amitriptyline and clomipramine exert their effects by inhibiting reuptake of norepinephrine and serotonin. Bupropion, duloxetine, and venlafaxine are believed to affect serotonin, norepinephrine, and dopamine receptors.

4. Which of the following antidepressants exert their effects by inhibiting the reuptake of serotonin? Select all that apply.
   A) Amitriptyline
   B) Bupropion
   C) Clomipramine
   D) Fluoxetine
   E) Escitalopram
   Ans: D, E
   Feedback:
   Selective serotonin reuptake inhibitors like fluoxetine and escitalopram exert their effects by inhibiting the reuptake of serotonin. Tricyclic antidepressants like amitriptyline and clomipramine exert their effects by inhibiting the reuptake of norepinephrine and serotonin. Bupropion is believed to affect serotonin, norepinephrine, and dopamine receptors.

5. A nurse administers amitriptyline cautiously to which clients? Select all that apply.
   A) Clients with cardiac disease
   B) Clients with hypothyroidism
   C) Clients with diabetes
   D) Elderly clients
   E) Adolescent clients
   Ans: A, D
   Feedback:
   Tricyclic antidepressants (TCAs) like amitriptyline can cause cardiac-related adverse reactions, so the nurse should give TCAs with caution to clients with pre-existing cardiac disease and elderly clients.

6. A nurse understands that the antidepressant drug paroxetine (Paxil) can be used to treat which of the following medical conditions? Select all that apply.
   A) Enuresis
   B) Depressive episodes
   C) Anorexia
   D) Obsessive-compulsive disorders
   E) Bulimia nervosa
   Ans: B, D, E
   Feedback:
   Serotonin reuptake inhibitors like paroxetine (Paxil) are used in the treatment of depressive episodes, obsessive-compulsive disorders, and bulimia nervosa.

7. A client is prescribed phenelzine. Which of the following would the nurse instruct the client to avoid? Select all that apply.
   A) Blue cheese
   B) Pepperoni
   C) Apples
   D) Chocolate
   E) Celery
   Ans: A, B, D
   Feedback:
   A nurse educating a client starting phenelzine (Nardil) should educate the client to avoid foods containing tyramine (aged cheese, sour cream, yogurt, beef, chicken livers, pickled herring, fermented meat, undistilled alcoholic beverages, caffeinated beverages, chocolate, certain fruits and vegetables, yeast extract, and soy sauce) because the combination can result in a life-threatening hypertensive crisis.

8. Before administering an antidepressant to a client, which of the following would the nurse assess? Select all that apply.
   A) Vital signs
   B) Presence of suicidal ideation
   C) Complete medical history
   D) Weight
   E) Mental status
   Ans: A, B, C, D, E
   Feedback:
   The nurse's preadministration assessment for a client receiving an antidepressant should include vital signs, presence of suicidal ideation, complete medical history, weight, and mental status.

9. A nurse determines the need to administer a prescribed antidepressant in the morning because of the increased likelihood of insomnia. Which drug would this most likely be? Select all that apply.
   A) Amitriptyline
   B) Bupropion
   C) Citalopram
   D) Paroxetine
   E) Sertraline
   Ans: C, D, E
   Feedback:
   It is best to administer serotonin reuptake inhibitors, such as citalopram, paroxetine, and sertraline, in the morning as they have a greater likelihood to cause insomnia.

10. Antidepressants can often have GI adverse reactions that can result in a nursing diagnosis of Imbalanced Nutrition: Less Than Body Requirements. Which of the following would be appropriate for the nurse to suggest to minimize these effects? Select all that apply.
    A) Increase fiber intake.
    B) Decrease fiber intake.
    C) Increase fluid intake.
    D) Decrease fluid intake.
    E) Chew sugarless gum.
    Ans: A, C, E
    Feedback:
    To help with antidepressant-induced constipation, the nurse can recommend increased fluid and fiber intake, and for antidepressant-induced dry mouth the nurse can recommend good oral hygiene, frequent sips of water, sugarless gum, and hard candy.

11. Which of the following would the nurse report to the primary health care provider if assessed in a client receiving an antidepressant? Select all that apply.
    A) Weight gain
    B) Expressions of guilt
    C) Indirect threats of suicide
    D) Somnolence
    E) Insomnia
    Ans: B, C, E
    Feedback:
    The nurse should report any of the following to the client's primary health care provider if observed: expressions of guilt, hopelessness, or helplessness; insomnia; weight loss; and direct or indirect threats of suicide.

12. A client taking phenelzine (Nardil) is at a dinner party and has several glasses of red wine. The client begins to feel nauseated and develops a terrible headache. The client is taken to the nearest emergency department (ED). This client might be experiencing a hypertensive crisis. What other symptoms might the nurse in the ED assess if the client is experiencing a hypertensive crisis? Select all that apply.
    A) Constricted pupils
    B) Chills
    C) Chest pain
    D) Tachycardia
    E) Stiff neck
    Ans: C, D, E
    Feedback:
    A client experiencing a hypertensive crisis can exhibit the following symptoms: stiff or sore neck, nausea, vomiting, headache, sweating, fever, chest pain, dilated pupils, and bradycardia or tachycardia.

13. A client receiving clomipramine is given a prescription for zolpidem for sleep. The primary health care provider was unaware the client was taking clomipramine. Which of the following reactions might the nurse observe in this client? Select all that apply.
    A) Respiratory depression
    B) CNS depression
    C) Hypertensive crisis
    D) Easy bruising
    E) Hyperglycemia
    Ans: A, B
    Feedback:
    The concomitant administration of tricyclic antidepressants like clomipramine with hypnotics like zolpidem can result in the increased risk of respiratory depression and CNS depression.

14. A nurse would assess the client for an increase in anticholinergic symptoms if the client is prescribed cimetidine with which antidepressant? Select all that apply.
    A) Phenelzine
    B) Sertraline
    C) Venlafaxine
    D) Clomipramine
    E) Escitalopram
    Ans: B, C, D, E
    Feedback:
    The concomitant use of cimetidine and tricyclic antidepressants (clomipramine), serotonin reuptake inhibitors (escitalopram and sertraline), and atypical antidepressants (venlafaxine) results in increased anticholinergic symptoms.

15. A client is prescribed paroxetine. When teaching the client about this drug, which of the following would the nurse include as a possible adverse reaction? Select all that apply.
    A) Sexual dysfunction
    B) Insomnia
    C) Somnolence
    D) Diarrhea
    E) Constipation
    Ans: A, B, C, D, E
    Feedback:
    The following are possible adverse reactions that may occur with paroxetine: headache, tremors, somnolence, nervousness, dizziness, insomnia, nausea, diarrhea, constipation, dry mouth, sweating, weakness, and sexual dysfunction.

16. After teaching a group of nursing students about possible adverse reactions associated with trazodone, the instructor determines that the teaching was successful when the students identify which of the following? Select all that apply.
    A) Sexual dysfunction
    B) Insomnia
    C) Priapism
    D) Diarrhea
    E) Dry mouth
    Ans: C, E
    Feedback:
    The following are possible adverse reactions that may occur with trazodone: priapism, drowsiness, dizziness, dry mouth, nausea, vomiting, constipation, fatigue, and nervousness.

17. A nurse understands that duloxetine may be used to treat which of the following? Select all that apply.
    A) Obsessive-compulsive disorder
    B) Depression
    C) Fibromyalgia
    D) Diabetic neuropathy
    E) Stress incontinence
    Ans: B, C, D, E
    Feedback:
    Duloxetine can be used to treat clients with depression, fibromyalgia, diabetic neuropathy, and stress incontinence.

18. When assessing a client for depression, which of the following would the nurse most likely find?
    A) Drowsiness
    B) Extreme sadness
    C) Severe headache
    D) Dilated pupils
    Ans: B
    Feedback:
    The nurse should monitor the client for extreme sadness because this is a symptom of depression. Drowsiness is an adverse effect of most antidepressants. Severe headache and dilated pupils are symptoms of hypertensive crisis.

19. A nurse is caring for a client with depression. The client has been prescribed amitriptyline. Which of the following would the nurse integrate into the teaching for the client about how the drug works?
    A) Decreased reuptake of norepinephrine
    B) Increased serotonin in the nervous system
    C) Increased endogenous norepinephrine
    D) Increased endogenous epinephrine
    Ans: A
    Feedback:
    The nurse should identify decreased reuptake of norepinephrine as the effect of the tricyclic antidepressant on the patient's body. Increased serotonin in the nervous system, increased endogenous norepinephrine, and increased endogenous epinephrine are effects of monoamine oxidase inhibitors.

20. A nurse is caring for an older adult client who has been prescribed amoxapine for depression accompanied by anxiety. After administration of the drug, the nurse observes muscle rigidity and sweating. The nurse identifies these as the symptoms of neuroleptic malignant syndrome. Which of the following would the nurse do next?
    A) Suggest the client engage in exercise.
    B) Get the client to drink a glass of cold water.
    C) Encourage the client to breathe deeply.
    D) Stop the drug and contact the physician.
    Ans: D
    Feedback:
    The nurse should discontinue the drug administration and contact the physician. Exercising, drinking cold water, and encouraging deep breaths will not help the client with symptoms of neuroleptic malignant syndrome.

21. A nurse is caring for an individual who is to receive antidepressant therapy on an outpatient basis. What precaution should the nurse suggest to prevent risk of injury if the client experiences dizziness when getting out of bed?
    A) Strictly avoid movements if dizziness occurs.
    B) Rise slowly when getting out of bed.
    C) Have breakfast before getting out of bed.
    D) Have a glass of water to overcome dizziness.
    Ans: B
    Feedback:
    The nurse should instruct the client to rise slowly when getting out of bed. Strictly avoiding movements will restrict the patient's mobility, which is unadvisable. Having breakfast or a glass of water before getting out of bed will not help the client to overcome dizziness because the dizziness is not due to lack of nourishment.

22. A nurse is caring for a client with suicidal tendencies. Which of the following would be most important for the nurse to do after administering the drug orally?
    A) Inspect the oral cavity to ensure that the drug is swallowed.
    B) Monitor body temperature for changes.
    C) Monitor blood pressure for unusual changes.
    D) Inspect pulse rate for unusual changes.
    Ans: A
    Feedback:
    The immediate nursing intervention is to inspect the oral cavity to ensure that the client swallowed the drug. Assessment for changes in body temperature, blood pressure, and pulse rate should be completed once the nurse ensures that the client has swallowed the drug.

23. A nurse is caring for a client who has been prescribed a monoamine oxidase inhibitor (MAOI). Which of the following should the nurse instruct the client to avoid?
    A) Milk
    B) Butter
    C) Rice
    D) Yogurt
    Ans: D
    Feedback:
    The nurse should ask the client to avoid yogurt because yogurt contains tyramine, which interacts with MAOIs and causes hypertensive crisis. Milk, butter, and rice do not contain tyramine and hence can be consumed when the client is undergoing treatment with MAOIs.

24. A client is prescribed a monoamine oxidase inhibitor (MAOI) for depression. During the initial interview with the client, the nurse understands that the client is also receiving an adrenergic agent. The nurse would be alert for which of the following?
    A) Increased risk for hypertensive episodes
    B) Increased risk for severe convulsions
    C) Increased risk for hyperpyretic episodes
    D) Increased risk for cardiac arrhythmias
    Ans: D
    Feedback:
    The nurse should identify increased risk for cardiac arrhythmias because of the effects of interaction between MAOIs and adrenergic agents. Increased risk for hypertensive episodes, severe convulsions, and hyperpyretic episodes occur when an MAOI and meperidine are used together.

25. The nurse suspects that a client is experiencing major depression based on assessment of which of the following? Select all that apply.
    A) Feelings of hopelessness
    B) Minimal changes in weight
    C) Focused concentration
    D) Loss of energy
    E) Excessive guilt
    Ans: A, D, E
    Feedback:
    Manifestations of depression include feelings of hopelessness or helplessness, significant weight loss or gain, inability to concentrate, and excessive guilt.

26. A client is prescribed lithium. The nurse suspects lithium toxicity based on which lithium drug level?
    A) 0.8 mEq/L
    B) 1.0 mEq/L
    C) 1.3 mEq/L
    D) 1.6 mEq/L
    Ans: D
    Feedback:
    Toxicity may occur when serum lithium levels are greater than 1.5 mEq/L.

27. After teaching a client who is prescribed lithium about the drug, the nurse determines that the teaching was successful when the client states which of the following?
    A) "I need to limit how much I drink."
    B) "Salt is something that I need to avoid."
    C) "I should take the drug with food."
    D) "I need to call the doctor if I have a painful erection."
    Ans: C
    Feedback:
    With lithium, the client should take the drug with food or immediately after meals, drink at least 10 large glasses of fluid each day, and add extra salt to food. Painful erections are not associated with lithium use.

28. After teaching a group of students about antidepressant therapy, the instructor determines that the teaching was successful when the students identify which of the following as a class of antidepressants? Select all that apply.
    A) Selective serotonin reuptake inhibitors
    B) Tricyclics
    C) Monoamine oxidase inhibitors
    D) Benzodiazepines
    E) Barbiturates
    Ans: A, B, C
    Feedback:
    Antidepressants include selective serotonin reuptake inhibitors, tricyclic antidepressants, and monoamine oxidase inhibitors. Benzodiazepines and barbiturates are sedative and hypnotics.

29. A group of nursing students are reviewing information about antidepressants. The students demonstrate understanding of the information when they identify which of the following as an example of a serotonin/norepinephrine and dopamine/norepinephrine reuptake inhibitor? Select all that apply.
    A) Doxepin
    B) Venlafaxine
    C) Bupropion
    D) Sertraline
    E) Escitalopram
    Ans: B, C
    Feedback:
    Bupropion and venlafaxine are examples of serotonin/norepinephrine and dopamine/norepinephrine reuptake inhibitors. Doxepin is a tricyclic antidepressant; sertraline and escitalopram are selective serotonin reuptake inhibitors.

30. When developing the plan of care for a client who is receiving lithium therapy, which nursing diagnosis would the nurse most likely identify as a priority?
    A) Self-Care Deficit
    B) Disturbed Sleep Pattern
    C) Imbalanced Nutrition: Less Than Body Requirements
    D) Imbalanced Fluid Volume
    Ans: D
    Feedback:
    Fluid balance determines the concentration of lithium in the blood and thus the client's risk for toxicity. Therefore, imbalanced fluid volume is a priority. Self-care deficit, disturbed sleep pattern, and imbalanced nutrition also may apply, but imbalanced fluid volume would be the priority.

31. A client is receiving lithium therapy at a health care facility. The client informs the nurse that he is taking antacids for heartburn. The nurse would be alert for which of the following due to the interaction of the two drugs?
    A) Decreased effectiveness of lithium
    B) Increased risk of lithium toxicity
    C) Increased risk for bipolar disorder
    D) Increased psychotic symptoms
    Ans: A
    Feedback:
    Combining lithium with antacids may result in decreased effectiveness of lithium. This combination will not increase the risk for lithium toxicity, bipolar disorder, or psychotic symptoms.

32. The nurse is reviewing the medical records of several clients who are receiving lithium. Which of the following would the nurse identify as being at increased risk for the development of lithium toxicity? Select all that apply.
    A) Clients receiving furosemide (Lasix)
    B) Clients experiencing diarrhea
    C) Clients with renal insufficiency
    D) Clients with liver cirrhosis
    E) Clients experiencing vomiting
    Ans: A, B, C, E
    Feedback:
    Clients with dehydration, diarrhea, vomiting, renal or cardiovascular disease, or sodium depletion and those receiving diuretics (i.e., furosemide) are at an increased risk for developing lithium toxicity.

1. A nurse would assess a client treated with an antipsychotic medication for which of the following behaviors if the antipsychotic medication was stopped? Select all that apply.
   A) Hallucinations
   B) Anhedonia
   C) Delusions
   D) Dystonia
   E) Flattened affect
   Ans: A, B, C, E
   Feedback:
   Antipsychotic medications help control symptoms associated with psychotic disorders such as hallucinations, delusions, disorganized speech, behavior disturbances, social withdrawal, flattened affect, and anhedonia. Dystonia would be noted as an adverse reaction with antipsychotic drugs.

2. After teaching a group of nursing students about antipsychotic drugs, the instructor determines that the teaching was successful when the students identify aripiprazole (Abilify) as exerting its effect on which of the following in the brain? Select all that apply.
   A) Serotonin
   B) Dopamine
   C) Norepinephrine
   D) Muscarinic
   E) Nicotinic
   Ans: A, B
   Feedback:
   Atypical antipsychotic drugs like aripiprazole (Abilify) are thought to act on serotonin and dopamine receptors in the brain. The conventional, or first-generation, antipsychotics (FGAs) work to diminish the positive symptoms by blocking dopamine transmission.

3. A client is prescribed an antipsychotic drug that also has an antiemetic effect. Which of the following would the nurse identify as having this effect? Select all that apply.
   A) Lithium (Eskalith)
   B) Aripiprazole (Abilify)
   C) Chlorpromazine (Thorazine)
   D) Prochlorperazine (Compazine)
   E) Clozapine (Clozaril)
   Ans: C, D
   Feedback:
   Chlorpromazine (Thorazine) and prochlorperazine (Compazine) are antipsychotic medications that have antiemetic effects. Lithium, aripiprazole, and clozapine do not.

4. A nurse should be able to differentiate between the typical and atypical antipsychotics. Which of the following would the nurse identify as an atypical antipsychotic? Select all that apply.
   A) Lithium (Eskalith)
   B) Aripiprazole (Abilify)
   C) Chlorpromazine (Thorazine)
   D) Prochlorperazine (Compazine)
   E) Clozapine (Clozaril)
   Ans: B, E
   Feedback:
   Aripiprazole (Abilify) and clozapine (Clozaril) are classified as atypical antipsychotics.

5. After teaching a group of nursing students about antipsychotics, the instructor determines that the teaching was successful when the students identify which of the following as a typical antipsychotic? Select all that apply.
   A) Lithium (Eskalith)
   B) Aripiprazole (Abilify)
   C) Chlorpromazine (Thorazine)
   D) Haloperidol (Haldol)
   E) Fluphenazine (Prolixin)
   Ans: C, D, E
   Feedback:
   Chlorpromazine, haloperidol, and fluphenazine are classified as typical antipsychotics.

6. When teaching a client who is to receive antipsychotic therapy, the nurse would include which of the following as a common skin reaction that might occur when initiating therapy? Select all that apply.
   A) Urticaria
   B) Stevens-Johnson syndrome
   C) Photosensitivity
   D) Hyperpigmentation
   E) Toxic epidermal necrolysis
   Ans: A, C
   Feedback:
   Urticaria and photosensitivity are common skin reactions a nurse should warn a client about when the client is initiated on antipsychotic therapy.

7. When describing tardive dyskinesia (TD) associated with the use of antipsychotic medication, which of the following would the nurse integrate into the teaching plan? Select all that apply.
   A) TD is an early-appearing adverse reaction.
   B) TD involves rhythmic, involuntary movements of the facial structures.
   C) TD is a reversible adverse effect of antipsychotic drugs.
   D) TD is less likely to occur with the use of atypical psychotics.
   E) TD can occur after discontinuation of antipsychotic drug therapy.
   Ans: B, D, E
   Feedback:
   TD is a late-appearing reaction that is characterized by rhythmic, involuntary movements of the tongue, face, mouth, or jaw and sometimes the extremities. TD is nonreversible, can occur during antipsychotic drug therapy or after discontinuation, and is less likely to occur with the use of atypical antipsychotics.

8. Before administering a prescribed antipsychotic drug to a client, the nurse observes the client for any behavior patterns that appear to be deviations from normal. Which of the following would the nurse identify as a deviation? Select all that apply.
   A) Poor eye contact
   B) Monotone speech pattern
   C) Inappropriate laughter
   D) Failure to answer questions completely
   E) Inappropriate crying
   Ans: A, B, C, D, E
   Feedback:
   Examples of deviation from normal include poor eye contact, failure to answer questions completely, inappropriate answers to questions, a monotone speech pattern, and inappropriate laughter, sadness, or crying.

9. Which of the following are reasons a nurse may need to contact the client's physician to administer an antipsychotic drug intramuscularly instead of orally? Select all that apply.
   A) Client is combative.
   B) Client refuses the medication.
   C) Client won't allow the nurse to inspect the oral cavity.
   D) Client has difficulty swallowing.
   E) Client is elderly.
   Ans: A, B, C
   Feedback:
   A nurse may need to contact the client's physician to administer an antipsychotic drug intramuscularly instead of orally because the client is combative, refuses the medication, or refuses to allow the nurse to inspect the oral cavity. Clients who have difficulty swallowing may be given an oral liquid in lieu of an IM injection.

10. A nurse caring for a client receiving clozapine (Clozaril) needs to be mindful of the symptoms that indicate bone marrow suppression. Assessment of which of the following would lead the nurse to suspect that the client is experiencing bone marrow suppression? Select all that apply.
    A) Hypertension
    B) Sore throat
    C) Fever
    D) Chills
    E) Weakness
    Ans: B, C, D, E
    Feedback:
    Symptoms that indicate bone marrow suppression include lethargy, weakness, fever, sore throat, malaise, mucous membrane ulceration, and "flu-like" complaints.

11. When assessing a client receiving antipsychotic drugs, the nurse would suspect that the client is experiencing extrapyramidal syndrome (EPS) based on assessment of which of the following? Select all that apply.
    A) Fine tremor
    B) Hypotension
    C) Akathisia
    D) Anhedonia
    E) Dystonia
    Ans: A, C, E
    Feedback:
    The signs of EPS include fine tremors, muscle rigidity, mask-like appearance of the face, slowness of movement, slurred speech, unsteady gait, akathisia, and dystonia. Anhedonia is a manifestation of schizophrenia.

12. When administering antipsychotic drugs, the nurse would need to keep in mind that which of the following atypical antipsychotics are most commonly associated with weight gain? Select all that apply.
    A) Olanzapine (Zyprexa)
    B) Risperidone (Risperdal)
    C) Ziprasidone (Geodon)
    D) Quetiapine (Seroquel)
    E) Clozapine (Clozaril)
    Ans: A, B
    Feedback:
    Olanzapine (Zyprexa) and risperidone (Risperdal) are atypical antipsychotics that are most commonly associated with weight gain. None of the other drugs are associated with weight gain.

13. The nurse is providing care to a client receiving clozapine (Clozaril). The nurse would be alert for an increased risk of bone marrow suppression if the client is also receiving which of the following? Select all that apply.
    A) Immunological agents
    B) Anticholinergics
    C) Opioids
    D) Anticoagulants
    Ans: A
    Feedback:
    The concomitant use of clozapine and immunological drugs can increase the severity of bone marrow suppression. The use of anticholinergics in combination with antipsychotics can increase the risk of tardive dyskinesia and psychotic symptoms. Opioids and anticoagulants are not associated with interactions involving antipsychotic drugs.

14. A nurse assesses a client receiving antipsychotic drugs for which of the following adverse reactions?
    A) Hypertension
    B) Skin dryness
    C) Dry mouth
    D) Bradycardia
    Ans: C
    Feedback:
    The nurse should monitor the client for mouth dryness. Antipsychotic drugs cause hypotension, not hypertension. Skin dryness and bradycardia are not adverse reactions related to the administration of antipsychotic drugs.

15. A nurse observes rhythmic, involuntary facial movements in a client who has been receiving antipsychotic drugs. The client also makes chewing movements and, at times, his tongue protrudes. The nurse interprets these findings as which of the following?
    A) Stevens-Johnson syndrome
    B) Neuroleptic malignant syndrome
    C) Tardive dyskinesia
    D) Extrapyramidal syndrome
    Ans: C
    Feedback:
    Tardive dyskinesia is characterized by rhythmic, involuntary movements of the tongue, face, mouth, or jaw and sometimes the extremities. The tongue may protrude, and there may be chewing movements, puckering of the mouth, and facial grimacing. Extrapyramidal syndrome (EPS), neuroleptic malignant syndrome (NMS), and Stevens-Johnson syndrome do not cause rhythmic, involuntary facial movements.

16. A nurse is caring for a client with schizophrenia. The physician has prescribed olanzapine in a disintegrating tablet form for the client. Which of the following points should the nurse include in the teaching plan for the client?
    A) Remove the tablet with dry hands.
    B) Take the tablet with a full glass of water.
    C) Add extra salt to food.
    D) Avoid tea or coffee.
    Ans: A
    Feedback:
    The nurse should instruct the client to remove the olanzapine tablet with dry hands and place the entire tablet in his or her mouth. Wet or damp hands may cause the medication to begin disintegrating prior to entering the client's mouth. There is no need to add extra salt to food. The client is required to take orally disintegrating olanzapine, so there is no need to take any fluid with the drug. Also, there is no need to avoid tea or coffee.

17. After administering an antipsychotic to a client, the nurse would immediately report which of the following?
    A) Orthostatic hypotension
    B) Dry mouth
    C) Rigidity
    D) Drowsiness
    Ans: C
    Feedback:
    The nurse should immediately report to the primary health care provider if the client displays signs of rigidity. Dry mouth, episodes of orthostatic hypotension, and drowsiness are reactions that are considered normal during drug therapy and need not be reported unless severe.

18. A client is prescribed clozapine. The nurse instructs the client on the need for weekly laboratory testing for which of the following?
    A) Serum lithium
    B) WBC count
    C) Blood glucose
    D) pH level
    Ans: B
    Feedback:
    Use of the drug clozapine has been associated with severe agranulocytosis (i.e., decreased white blood cells), so weekly WBC count tests are scheduled. Serum lithium tests are taken for clients who have been administered lithium, not clozapine. There is no need to check blood glucose or pH level.

19. Antipsychotic therapy with a conventional antipsychotic has been started for a client with schizophrenia. Assessment reveals that the client is experiencing drowsiness that is affecting his ability to function. The nurse notes that the client needs assistance with his activities of daily living and ambulating. Which nursing diagnosis would the nurse most likely identify?
    A) Risk for Infection
    B) Risk for Unstable Blood Glucose Level
    C) Risk for Injury
    D) Impaired Physical Mobility
    Ans: C
    Feedback:
    Antipsychotic drugs may cause extreme drowsiness and sedation, especially during the first or second weeks of therapy. This reaction may impair mental or physical abilities. The patient may need assistance with activities of daily living due to the experience of extreme sedation. This includes cueing or help with eating, dressing, and ambulating. Therefore, Risk for Injury would be most appropriate. Risk for Infection would be appropriate if the client was receiving clozapine. Risk for Unstable Blood Glucose Level would be appropriate if the client was receiving an atypical antipsychotic due to the increased risk for weight gain and subsequent development of diabetes. Impaired Physical Mobility would be appropriate if the client was experiencing EPS or TD.

20. A nurse is administering haloperidol to a client with schizophrenia. The nurse determines that the drug is effective when there is improvement in which of the following? Select all that apply.
    A) Agitation
    B) Alogia
    C) Concrete thinking
    D) Delusions
    E) Hallucinations
    Ans: A, D, E
    Feedback:
    Haloperidol is a conventional antipsychotic that is used to control the positive symptoms of schizophrenia, such as agitation, delusions, and hallucinations. Effectiveness of the drug would lead to a decrease in these positive symptoms. Atypical antipsychotics help to diminish the negative symptoms such as alogia and problems with concrete thinking.

21. A client comes to the emergency department and tells the nurse, “I've been hiccoughing constantly for the past 6 or 7 hours and nothing I do to stop them seems to work.” The nurse would expect the primary health care provider to prescribe which of the following?
    A) Prochlorperazine
    B) Chlorpromazine
    C) Haloperidol
    D) Olanzapine
    Ans: B
    Feedback:
    Chlorpromazine may be used to treat uncontrolled hiccoughs. Prochlorperazine may be used as an antiemetic. Haloperidol and olanzapine are not indicated for uncontrolled hiccoughs.

22. The caregiver of a client who is started on antipsychotic drug therapy asks the nurse when the client's symptoms will improve. Which response by the nurse would be most appropriate?
    A) “You should notice an improvement in the next day or two.”
    B) “It might take about 6 weeks or so before the drug is most effective.”
    C) “There's no way to tell but usually it takes about a week.”
    D) “Look for movements of his face, mouth, or jaw and that's the sign.”
    Ans: B
    Feedback:
    Antipsychotics take time to produce the optimal effect, sometimes 6 to 10 weeks. Evidence of tongue, facial, or mouth movements suggest tardive dyskinesia, a late-appearing reaction that requires discontinuation of the drug.

23. A client is receiving antipsychotic therapy. As part of the client's plan of care, the nurse assesses the client for possible adverse reactions. Which of the following would lead the nurse to suspect that the client is experiencing extrapyramidal effects? Select all that apply.
    A) Mask-like facial appearance
    B) Increased motor activity
    C) Facial grimacing
    D) Delusions
    E) Flat affect
    Ans: A, B, C
    Feedback:
    Manifestations of extrapyramidal syndrome include Parkinson-like symptoms—fine tremors, muscle rigidity, mask-like appearance of the face, slowness of movement, slurred speech, and unsteady gait; akathisia—extreme restlessness and increased motor activity; and dystonia—facial grimacing and twisting of the neck into unnatural positions. Delusions and flat affect are manifestations associated with schizophrenia.

24. A nurse is required to administer an antipsychotic agent parenterally. After administering the drug, the nurse would ensure that the client remains lying down for which time frame?
    A) 15 minutes
    B) 30 minutes
    C) 45 minutes
    D) 60 minutes
    Ans: B
    Feedback:
    After administering an antipsychotic agent parenterally, the nurse would ensure that the client remains lying down for about 30 minutes.

25. The nurse is providing care to an older adult who is receiving antipsychotic therapy. The primary health care provider prescribes an oral liquid concentrate. When administering the drug, the nurse would mix the drug with which of the following? Select all that apply.
    A) Fruit juice
    B) Milk
    C) Pudding
    D) Soup
    E) Green leafy vegetables
    Ans: A, B, C, D
    Feedback:
    Oral liquid concentrates are available for patients who can more easily swallow a liquid. To aid in administration to debilitated or elderly patients, oral drugs can be mixed in liquids such as fruit juices, tomato juice, milk, or carbonated beverages. Semisolid foods, such as soups or puddings, may also be used. Green leafy vegetables would be an inappropriate choice based on the usual texture of the food and the inability to mix the drug solution with the food.

26. A client with schizophrenia is prescribed antipsychotic therapy. When developing the plan of care for the client, the nurse integrates understanding that the client is at risk for extrapyramidal syndrome. The nurse would expect to assess the client for this adverse reaction at which time?
    A) Once a week
    B) At the initiation of therapy
    C) When the dose is reduced
    D) Every 3 months
    E) When the dose is increased
    Ans: B, C, E
    Feedback:
    The nurse should assess for EPS during initial therapy and whenever the dosage is increased or decreased.

1. When describing the autonomic nervous system to a group of nursing students, the instructor determines that the teaching was successful when the students identify which body function as being controlled by this system? Select all that apply.
   A) Heart rate
   B) Muscle movement
   C) Blood pressure
   D) Glandular secretions
   E) GI activity
   Ans: A, C, D, E
   Feedback:
   The autonomic nervous system controls blood pressure, heart rate, GI activity, and glandular secretions.

2. When describing drugs that block or inhibit the sympathetic nervous system, the nurse includes which of the following? Select all that apply.
   A) Antiadrenergic drugs
   B) Adrenergic blocking drugs
   C) Adrenergic stimulating drugs
   D) Adrenergic drugs
   E) Sympatholytics
   Ans: A, B, E
   Feedback:
   Drugs that block or inhibit the sympathetic nervous system are known as antiadrenergic drugs, adrenergic blocking drugs, and sympatholytics.

3. A nurse is preparing to administer a sympathomimetic drug. Which of the following might the nurse be preparing to give? Select all that apply.
   A) Clonidine (Catapres)
   B) Isoproterenol (Isuprel)
   C) Midodrine (ProAmatine)
   D) Epinephrine (EpiPen)
   E) Reserpine (Serpalan)
   Ans: B, C, D
   Feedback:
   Isoproterenol, midodrine, and epinephrine are examples of sympathomimetic drugs.

4. The nurse administers isoproterenol (Isuprel) to a client. Which of the following would most likely occur? Select all that apply.
   A) Decreased heart rate
   B) Increased use of glucose
   C) Decreased gastric motility
   D) Constriction of coronary blood vessels
   E) Wakefulness
   Ans: B, C, E
   Feedback:
   Isoproterenol (Isuprel) will most likely cause increased heart rate, increased use of glucose, decreased gastric motility, dilation of coronary blood vessels, and wakefulness.

5. When describing the adrenergic nervous system, which of the following would the instructor describe as two types of receptors that are found in this system? Select all that apply.
   A) Alpha receptors
   B) Beta receptors
   C) Delta receptors
   D) Gamma receptors
   E) Omega receptors
   Ans: A, B
   Feedback:
   Alpha and beta receptors are the two types of adrenergic nervous system receptors.

6. A nurse is reviewing the different types of shock that may occur. The nurse demonstrates understanding of the information when the nurse identifies which of the following as a type of distributive shock? Select all that apply.
   A) Cardiogenic-obstructive shock
   B) Septic shock
   C) Hypovolemic shock
   D) Anaphylactic shock
   E) Neurogenic shock
   Ans: B, D, E
   Feedback:
   Septic shock, anaphylactic shock, and neurogenic shock are types of distributive shock. Cardiogenic and hypovolemic are other types of shock.

7. A nurse may be asked to administer adrenergic drugs to clients with which of the following conditions? Select all that apply.
   A) Hypovolemic shock
   B) Respiratory distress
   C) Severe hypertension
   D) Allergic reactions
   E) Cardiac arrest
   Ans: A, B, D, E
   Feedback:
   A nurse may be asked to administer adrenergic drugs to clients with hypovolemic shock, respiratory distress, severe hypotension, allergic reactions, and cardiac arrest. These drugs would not be used to treat severe hypertension.

8. A nurse is caring for a client who has recently suffered an acute myocardial infarction. The nurse would closely monitor this client for which of the following that would suggest that the client is developing shock? Select all that apply.
   A) Increased blood pressure
   B) Decreased urinary output
   C) Hypoxia
   D) Tachypnea
   E) Bradycardia
   Ans: B, C, D
   Feedback:
   Signs and symptoms of shock include cold and clammy skin, sweating, hypotension, tachycardia, hypoxia, tachypnea, and decreased urinary output.

9. A nurse is monitoring a client who is receiving dopamine. The nurse should be alert for which of the following adverse reactions? Select all that apply.
   A) Headache
   B) Hypotension
   C) Cardiac arrhythmias
   D) Nausea
   E) Diarrhea
   Ans: A, C, D
   Feedback:
   Adrenergic drugs like dopamine can cause the following adverse reactions: cardiac arrhythmias, headache, nausea, vomiting, and hypertension.

10. The nurse is reviewing the medical records of several clients. The nurse integrates knowledge of the drug isoproterenol, understanding that this drug would be contraindicated in a client with which condition? Select all that apply.
    A) Digitalis toxicity
    B) Type 2 diabetes
    C) Ventricular arrhythmias
    D) Angina pectoris
    E) Narrow-angle glaucoma
    Ans: A, C, D
    Feedback:
    Isoproterenol (Isuprel) is contraindicated in clients with tachyarrhythmias, tachycardia, or heart block caused by digitalis toxicity, ventricular arrhythmias, and angina pectoris.

11. A nurse has administered dopamine to a client taking phenytoin (Dilantin) for a seizure disorder. The nurse would closely monitor the client for which adverse reaction? Select all that apply.
    A) Hypotension
    B) Hypoglycemia
    C) Bradycardia
    D) Tachypnea
    E) Seizures
    Ans: A, C, E
    Feedback:
    When dopamine is administered to a client taking phenytoin, there is an increased risk of seizures, hypotension, and bradycardia.

12. Ma huang is an herbal product that has been used to relieve cold symptoms and for weight loss. The nurse would instruct a client receiving which of the following to avoid products containing ma huang? Select all that apply.
    A) Digoxin (Lanoxin)
    B) Phenelzine (Nardil)
    C) Guanethidine (Ismelin)
    D) Oxytocin (Pitocin)
    E) Halothane (Avestan)
    Ans: A, B, C, D, E
    Feedback:
    Clients taking digoxin, phenelzine, guanethidine, oxytocin, halothane, or St. John's wort should not take ma huang.

13. Before administering dobutamine to a client, the nurse should assess which of the following? Select all that apply.
    A) Blood pressure
    B) Blood glucose
    C) Respiratory rate
    D) Pulse
    E) Level of consciousness
    Ans: A, C, D, E
    Feedback:
    Prior to administering dobutamine to a client, the nurse should assess the client's blood pressure, respiratory rate, pulse, and level of consciousness.

14. As part of the teaching plan for a client receiving midodrine, the nurse would instruct the client to report which of the following? Select all that apply.
    A) Fine tremors
    B) Pounding headache
    C) Bradycardia
    D) Difficulty urinating
    E) Constipation
    Ans: B, C, D
    Feedback:
    Clients taking midodrine should be told to report any of the following reactions: pounding headache when lying down, bradycardia, or difficulty urinating.

15. Which of the following is a condition that may result in distributive shock? Select all that apply.
    A) Central line infection
    B) Acute myocardial infarction
    C) Congestive heart failure
    D) Spinal cord injury
    E) Allergic drug reaction
    Ans: A, D, E
    Feedback:
    Central line infection, spinal cord injury, and allergic drug reactions can result in one of the different types of distributive shock.

16. A client is prescribed metaraminol. The nurse demonstrates understanding of this drug, identifying that it can be administered by which route? Select all that apply.
    A) Orally
    B) Subcutaneously
    C) Topically
    D) Intramuscularly
    E) Intravenously
    Ans: B, D, E
    Feedback:
    Metaraminol may be administered subcutaneously, intramuscularly, and intravenously.

17. A nurse is caring for an older adult client who is prescribed isoproterenol. After administering the drug, the nurse would immediately report which of the following changes to the primary health care provider?
    A) Blood glucose level
    B) Appetite
    C) Temperature
    D) Pulse rate
    Ans: D
    Feedback:
    The nurse should report any changes observed in pulse rate or rhythm immediately. Changes in glucose level, appetite, or temperature need not be reported immediately to the primary care provider unless they are severe.

18. A client is to receive midodrine. Which of the following would the nurse include in the plan of care to ensure that the client doesn't develop supine hypertension?
    A) Administer midodrine during the day.
    B) Ensure that the client is lying in a supine position.
    C) Instruct the client to regularly shift positions.
    D) Assist the client when moving out of bed.
    Ans: A
    Feedback:
    The nurse can minimize the risk of supine hypertension by administering the drug during the daytime. The nurse should ensure that the client is in an upright, not supine, position. Instructing the client to regularly shift positions or assisting the client when moving out of bed will not significantly reduce the risk of supine hypertension.

19. A nurse is preparing to administer a prescribed adrenergic agent to a client who is in shock. Before administering the drug, the nurse would assess for and document which of the following as a sign of shock?
    A) Increased temperature
    B) Reddish/pinkish skin
    C) Dry, dehydrated skin
    D) Changes in consciousness
    Ans: D
    Feedback:
    Symptoms of shock, such as a change in the level of consciousness, should be recorded by the nurse as part of the preadministration assessment. Cool skin, not elevated temperature, is another symptom of shock. The nurse also needs to record signs of diaphoresis and cyanosis, not reddish/pinkish or dry, dehydrated skin.

20. A client is prescribed dopamine. Which of the following would the nurse include in the client's plan of care?
    A) Administering dopamine only via IV route
    B) Maintaining a fixed rate of administration
    C) Monitoring blood pressure every half hour
    D) Diluting dopamine with sodium bicarbonate
    Ans: A
    Feedback:
    The nurse should ensure that dopamine is administered intravenously. The rate of administration of the drug should be adjusted according to the client's blood pressure, and it should not be fixed at any particular rate. The nurse should monitor blood pressure every 2 minutes, not every half hour, from the beginning of therapy until the desired blood pressure is achieved.

21. After administering dobutamine to a client, the nurse would assess the client closely for which adverse reaction?
    A) Cardiac arrhythmias
    B) Urinary retention
    C) Elevated temperature
    D) Sleeplessness
    Ans: A
    Feedback:
    The nurse should monitor for cardiac arrhythmias (bradycardia and tachycardia) because they are common adverse reactions observed in clients receiving dobutamine HCL. Dobutamine HCL does not cause urinary retention, elevated temperature, or sleeplessness.

22. A nurse is monitoring the vital signs of a client who has received epinephrine. The nurse would report which of the following assessment findings?
    A) Systolic blood pressure below 100 mm Hg
    B) Temperatures reading of 97.6°F
    C) Pulse rate of 60 beats/min
    D) A diastolic blood pressure of 75 mm Hg
    Ans: A
    Feedback:
    The nurse must immediately report a fall in systolic blood pressure below 100 mm Hg. Epinephrine should raise the blood pressure, so a continued low systolic pressure indicates the medication has not been effective. A diastolic blood pressure of 75 mm Hg, a pulse rate of 60 beats/min, and a temperature reading of 97.6°F are normal and need not be reported immediately.

23. A client has been administered dobutamine. The client is also receiving a beta-adrenergic blocking drug. The nurse would monitor the client for the development of which of the following resulting from the use of these two drugs?
    A) Bradycardia
    B) Hypertension
    C) Depression
    D) Dehydration
    Ans: B
    Feedback:
    The nurse should assess for hypertension in a client who is being administered dobutamine and beta-adrenergic blocking drugs. Combining dobutamine and beta-adrenergic blocking drugs does not increase the risk of bradycardia, depression, or dehydration.

24. A nurse is teaching a client how to use an auto-injector as treatment for an allergic reaction. Which statement by the client indicates the need for additional teaching?
    A) "I should not touch the orange or black tip on the small end."
    B) "I should administer the dose and then call 9-1-1 if I'm alone."
    C) "I should inject the black tip into my outer thigh."
    D) "I need to massage the site after removing the device."
    Ans: B
    Feedback:
    The client should call the emergency number first and then administer the dose if he or she is alone. The client should not touch the orange or black tip on the end. The dose is administered into the outer thigh and the site is massaged for 10 seconds after removing the device.

25. A client is prescribed norepinephrine IV. Which of the following would be appropriate for the nurse to do? Select all that apply.
    A) Administer the drug via a gravity infusion.
    B) Dilute the drug with sterile saline.
    C) Continuously monitor the client's blood pressure.
    D) Check the IV insertion site for leakage.
    E) Assess the client's urinary output hourly.
    Ans: C, D, E
    Feedback:
    When giving norepinephrine IV, the nurse should use an electronic infusion pump, not dilute the norepinephrine solution, continuously monitor the client's blood pressure, check the IV site for leakage or extravasation, restart the IV in another location if extravasation occurs and institute extravasation protocol according to the facility's policy, and assess the client's urine output hourly.

26. While assessing a client, the nurse observes hives and flushing. The client reports itching and a tightness in the throat. The nurse would identify which of the following nursing diagnoses?
    A) Risk for Allergy Response
    B) Ineffective Tissue Perfusion
    C) Decreased Cardiac Output
    D) Risk for Injury
    Ans: A
    Feedback:
    The client is exhibiting signs and symptoms of an allergic reaction. Therefore, Risk for Allergy Response would be appropriate. Ineffective Tissue Perfusion and Decreased Cardiac Output would be appropriate if a client is experiencing hypotension and shock. Risk for Injury would be appropriate if the client was experiencing dizziness, weakness, confusion, or disorientation related to the drug therapy.

27. After teaching a group of nursing students about adrenergic drugs and their effects, the instructor determines that the teaching was successful when the students identify which of the following as an effect of these drugs?
    A) Decreased myocardial contractility
    B) Vasodilation
    C) Increased cardiac output
    D) Improved airway clearance
    Ans: C
    Feedback:
    Adrenergic drugs improve hemodynamic status by improving myocardial contractility and increasing heart rate, which results in increased cardiac output. Peripheral resistance is increased by vasoconstriction. The drugs do not improve airway clearance.

28. A nurse is reviewing the effects of adrenergic drugs on the body. The nurse demonstrates understanding of this group of drugs by identifying that which of the following would occur if the drug stimulates beta-1 receptors?
    A) Vasoconstriction of peripheral blood vessels
    B) Decreased gastrointestinal tract secretions
    C) Increased force of myocardial contractions
    D) Bronchodilation
    Ans: C
    Feedback:
    Stimulation of beta-1 receptors leads to an increase in heart rate and an increase in the force of myocardial contraction. Peripheral vasoconstriction occurs when alpha-1 receptors are stimulated. Decreased gastrointestinal motility and secretions occur when alpha-2 receptors are stimulated. Bronchodilation occurs when beta-2 receptors are stimulated.

1. After teaching a group of nursing students about sympatholytic drugs, the instructor determines that the teaching was successful when the students identify which of the following as an example? Select all that apply.
   A) Angiotensin-converting enzyme inhibitors
   B) a-adrenergic blockers
   C) b-adrenergic blockers
   D) Angiotensin receptor blockers
   E) Loop diuretics
   Ans: B, C
   Feedback:
   a- and b-adrenergic blockers are classified as sympatholytic drugs.

2. A nurse would administer phentolamine to a client diagnosed with which condition? Select all that apply.
   A) Pheochromocytoma-induced hypertension
   B) Benign hypertension
   C) Preoperative hypertension
   D) Increased intraocular pressure
   E) Treatment of dopamine extravasation tissue damage
   Ans: A, C, E
   Feedback:
   Phentolamine is an a-adrenergic blocker used in the treatment of pheochromocytoma-induced hypertension and preoperative hypertension and in the prevention and treatment of tissue damage caused by extravasation of dopamine.

3. A nurse would administer phentolamine cautiously to a client with which condition? Select all that apply.
   A) Recent MI
   B) Type 1 diabetes
   C) Renal failure
   D) Hepatic failure
   E) Peripheral artery disease
   Ans: A, C
   Feedback:
   Phentolamine is an a-adrenergic blocker that should be used cautiously in clients who are pregnant or lactating, had a recent MI, or have renal failure or Reynaud's disease.

4. A nurse recognizes the class of medication being administered to help plan ongoing assessment and client education. The nurse would identify which drug as an example of a b-adrenergic blocker? Select all that apply.
   A) Carvedilol (Coreg)
   B) Propranolol (Inderal)
   C) Metoprolol (Lopressor)
   D) Atenolol (Tenormin)
   E) Labetalol (Trandate)
   Ans: B, C, D
   Feedback:
   Propranolol, metoprolol, and atenolol are b-adrenergic blockers, but carvedilol and labetalol are a/b-adrenergic blockers.

5. A nurse understands that while most b-adrenergic receptors are found in the heart, they are also commonly found in which other organs? Select all that apply.
   A) Pancreas
   B) Eyes
   C) Liver
   D) Lungs
   E) Skin
   Ans: B, D
   Feedback:
   b-adrenergic receptors are also found in the eyes and lungs. The blockage of these receptors can be beneficial in treatment of glaucoma or cause adverse reactions in the lungs (bronchospasms).

6. A nurse administers atenolol (Tenormin) to a client suffering an acute MI based on the understanding that this drug will result in which of the following changes in the client? Select all that apply.
   A) Increase the heart's excitability
   B) Decrease the heart's workload
   C) Increase the heart's oxygen consumption
   D) Decrease heart rate
   E) Constrict blood vessels
   Ans: B, D
   Feedback:
   Atenolol (Tenormin) is a b-adrenergic blocking drug. Blockade of b-adrenergic receptors results in decreased heart rate, dilation of blood vessels, a decrease in the heart's excitability, and a decrease in cardiac workload and oxygen consumption and provides membrane-stabilizing effects.

7. A nurse would closely monitor which client for an increase in possible adverse reactions after administering propranolol? Select all that apply.
   A) Clients with asthma
   B) Clients with hyperlipidemia
   C) Clients with diabetes
   D) Clients with peptic ulcer disease
   E) Clients with migraine headaches
   Ans: A, C, D
   Feedback:
   A nurse should carefully observe clients with asthma (bronchospasm can result with the use of nonselective b blockers) and diabetes (b blockers can mask the symptoms of hypoglycemia) during the use of propranolol (Inderal), a nonselective b blocker. The drug also should be used cautiously in clients with peptic ulcer disease.

8. The nurse should observe elderly clients taking metoprolol (Lopressor) for which of the following adverse effects as they are more likely to occur in elderly clients? Select all that apply.
   A) Hyperglycemia
   B) Heart failure
   C) Peripheral vascular insufficiency
   D) Confusion
   E) Worsening angina
   Ans: B, C, D, E
   Feedback:
   The nurse should observe elderly clients taking metoprolol (Lopressor) for confusion, heart failure, worsening angina, shortness of breath, and peripheral vascular insufficiency.

9. Which of the following adverse reactions would the nurse include in the teaching plan for a client who is prescribed labetalol? Select all that apply.
   A) Hypoglycemia
   B) Insomnia
   C) Drowsiness
   D) Tachycardia
   E) Fatigue
   Ans: B, C, E
   Feedback:
   Adverse effects from the use of a/b-adrenergic blockers like labetalol include fatigue, dizziness, hypotension, drowsiness, insomnia, weakness, diarrhea, dyspnea, chest pain, bradycardia, and skin rash.

10. A nurse is caring for a client with benign prostatic hypertrophy (BPH). Which of the following would the nurse expect to be prescribed as treatment? Select all that apply.
    A) Doxazosin (Cardura)
    B) Alfuzosin (Uroxatral)
    C) Tamsulosin (Flomax)
    D) Prazosin (Minipress)
    E) Mecamylamine (Inversine)
    Ans: A, B, C
    Feedback:
    Doxazosin, alfuzosin, and tamsulosin are peripherally acting adrenergic blocking drugs used in the treatment of BPH.

11. A nurse is conducting discharge teaching with a client being discharged on clonidine (Catapres). The nurse would instruct the client about which of the following as a possible adverse reaction? Select all that apply.
    A) Dry mouth
    B) Bradycardia
    C) Sedation
    D) Anorexia
    E) Tachypnea
    Ans: A, C, D
    Feedback:
    Adverse reactions associated with the use of centrally acting antiadrenergic drugs like clonidine (Catapres) include dry mouth, drowsiness, sedation, anorexia, rash, malaise, and weakness.

12. When caring for a client who is receiving acebutolol (Sectral), the nurse would ensure that which of the following is avoided to promote optimal effectiveness of acebutolol? Select all that apply.
    A) Sertraline (Zoloft)
    B) Phenelzine (Nardil)
    C) Naproxen (Naprosyn)
    D) Oxaprozin (Daypro)
    E) Fluoxetine (Prozac)
    Ans: C, D
    Feedback:
    NSAIDs (naproxen and oxaprozin) can result in decreased effects of b blockers such as acebutolol.

13. In which of the following situations would a nurse caring for a hospitalized client hold the dose of propranolol (Inderal)? Select all that apply.
    A) Pulse less than 60 bpm
    B) Blood glucose less than 100 mg/dL
    C) Irregular pulse
    D) Systolic pressure less than 90 mm Hg
    E) Diastolic pressure greater than 90 mm Hg
    Ans: A, C, D
    Feedback:
    The nurse should hold the dose of propranolol (Inderal) for clients experiencing any of the following: pulse less than 60 bpm, any irregularity in the client's heart rate or rhythm, or systolic pressure less than 90 mm Hg.

14. A nurse is caring for a client who has been given a centrally acting antiadrenergic drug. The nurse knows that under which of the following conditions is the use of a centrally acting antiadrenergic drug contraindicated?
    A) Active hepatic disease
    B) Active peptic ulcer
    C) Ulcerative colitis
    D) Mental depression
    Ans: A
    Feedback:
    The use of a centrally acting antiadrenergic drug is contraindicated in clients with active hepatic disease. The use of a centrally acting antiadrenergic drug is not contraindicated in clients with active peptic ulcer, ulcerative colitis, or mental depression. In clients with active peptic ulcer, ulcerative colitis, or mental depression, the use of peripherally acting antiadrenergic drug is contraindicated.

15. A client with a cardiac problem is treated with b-adrenergic blocking drugs. Which of the following should the nurse identify as a cardiac reaction that impacts the body when a b-adrenergic blocking drug is given to the client?
    A) Vomiting
    B) Hyperglycemia
    C) Nausea
    D) Vertigo
    Ans: D
    Feedback:
    The nurse should identify vertigo as the cardiac reaction that impacts the body when a b-adrenergic blocking drug is given to the client. Vomiting, nausea, and hyperglycemia are not cardiac reactions; they are gastrointestinal reactions that are observed when the client is administered b-adrenergic blocking drugs.

16. A client who is receiving a b blocker tells the nurse that he also takes ibuprofen for arthritis pain. The nurse would be alert for which of the following?
    A) Decreased effect of the b blocker
    B) Increased risk of bradycardia
    C) Increased risk of paradoxical hypertensive effect
    D) Increase risk of hypotension
    Ans: A
    Feedback:
    The nurse should monitor for the decreased effect of the b blocker in the client who is receiving a b blocker along with NSAIDs. The nurse need not monitor for increased risk of bradycardia and paradoxical hypertensive effect or decreased risk of hypotension. There is an increase in the risk of paradoxical hypertensive effect when a b-adrenergic blocking drug is administered with clonidine. There is an increase in the risk of bradycardia when a b-adrenergic blocking drug is administered with antidepressants. There is an increased risk of hypotension when a b-adrenergic blocking drug is administered with loop diuretics.

17. A nurse is caring for a client who has been prescribed propranolol for angina. After administering the drug, which of the following would the nurse do?
    A) Ask about relief of symptoms and record responses on the chart.
    B) Determine signs of infection in the client.
    C) Monitor for sudden decrease in urine output.
    D) Monitor for sudden increase in intraocular pressure.
    Ans: A
    Feedback:
    The nurse should ask about the relief of symptoms and record the responses on the client's chart. Determining the signs of infection in the client is part of the nurse's preadministration assessment, not the ongoing assessment. The nurse need not monitor the client for a sudden decrease in urine output and a sudden increase in intraocular pressure for a client receiving propranolol therapy for angina.

18. A nurse is preparing to administer propranolol to a client for the treatment of cardiac arrhythmias. The nurse checks the client's apical pulse rate and blood pressure before administration and notes that the pulse rate is below 60 bpm. Which of the following would the nurse do next?
    A) Provide proper ventilation to the client.
    B) Delay drug administration for some time.
    C) Withhold the drug and contact the primary health care provider.
    D) Immediately give oxygen via face mask.
    Ans: C
    Feedback:
    The nurse should withhold the drug and contact the primary health care provider if the pulse rate of the client is below 60 bpm. Providing proper ventilation to the client, delaying drug administration for some time, or providing oxygen support to the client would be inappropriate for this client.

19. A client uses levodopa for treatment of Parkinson's disease. The client is now prescribed an adrenergic blocking agent. The nurse would assess the client for which of the following?
    A) Decreased effect of levodopa
    B) Increased effect of adrenergic blocker
    C) Increased risk of levodopa toxicity
    D) Decreased risk of psychotic behavior
    Ans: A
    Feedback:
    When levodopa and adrenergic blockers are administered together, the effect of the levodopa is decreased. Therefore, the client's Parkinson's disease may not be controlled as effectively as before. The effect of the adrenergic blocker is not increased, nor is the risk for levodopa toxicity. The client is not experiencing psychotic behavior.

20. A client with cardiac arrhythmia is treated with a centrally acting antiadrenergic drug. The nurse would assess the client for which of the following as a possible adverse reaction?
    A) Lightheadedness
    B) Malaise
    C) Bradycardia
    D) Weakness
    Ans: B
    Feedback:
    The nurse should monitor the client for malaise as a generalized reaction with antiadrenergic drugs that are centrally acting when administered to clients with cardiac arrhythmias. Lightheadedness, bradycardia, and weakness are the adverse reactions associated with peripherally acting antiadrenergic drugs.

21. A nurse is caring for a client with an arrhythmia. Which of the following would be most important for the nurse to do for a client with a life-threatening arrhythmia who is receiving an adrenergic blocking drug intravenously?
    A) Perform continuous cardiac monitoring.
    B) Obtain pulse rate readings every 6 to 8 hours.
    C) Assess respiratory rate every hour.
    D) Obtain body temperature readings every 15 minutes.
    Ans: A
    Feedback:
    The patient with a life-threatening arrhythmia may receive an adrenergic blocking drug, such as propranolol, by the intravenous (IV) route. When these drugs are administered IV, cardiac monitoring is necessary. Patients not in a monitored unit are usually transferred to one as soon as possible. When these drugs are administered for a life-threatening arrhythmia, it is important to monitor the patient continually with cardiac, blood pressure, and respiratory rate monitoring frequently.

22. A nurse is preparing to administer a centrally acting adrenergic blocker to a group of clients. The nurse would be especially cautious when administering the drug to which client?
    A) Client with diabetes
    B) Client with chronic bronchitis
    C) Client with renal function impairment
    D) Client with impaired hepatic function
    Ans: C
    Feedback:
    The nurse should administer centrally acting adrenergic blockers cautiously to clients with renal function impairment. The a/b-adrenergic blocking drugs should be used cautiously in clients with diabetes, chronic bronchitis, and impaired hepatic function.

23. A group of nursing students are reviewing information about adrenergic blockers in preparation for an examination. The students demonstrate understanding of the information when they identify which of the following as an a/b-adrenergic blocker? Select all that apply.
    A) Phentolamine
    B) Bisoprolol
    C) Nadolol
    D) Carvedilol
    E) Labetalol
    Ans: D, E
    Feedback:
    Carvedilol and labetalol are a/b-adrenergic blockers. Phentolamine is an a-adrenergic blocker. Bisoprolol and nadolol are b-adrenergic blockers.

24. A nurse is reviewing the medication orders for a client and notes an adrenergic blocker that is to be applied transdermally. Which medication would the nurse be preparing to administer?
    A) Methyldopa
    B) Clonidine
    C) Guanabenz
    D) Guanfacine
    Ans: B
    Feedback:
    Clonidine is available in a transdermal formulation. Methyldopa may be administered IV or orally. Guanabenz and guanfacine are administered orally.

25. A client is receiving nadolol as part of the treatment plan for hypertension. The client reports dizziness on standing. The nurse checks the client's blood pressure lying, sitting, and standing and notes a significant drop in the readings. When developing this client's plan of care, which nursing diagnosis would the nurse most likely identify?
    A) Risk for Injury
    B) Ineffective Tissue Perfusion
    C) Impaired Comfort
    D) Decreased Cardiac Output
    Ans: A
    Feedback:
    The client is experiencing orthostatic hypotension, placing the client at risk for falls and injury. Ineffective Tissue Perfusion would be appropriate if the client was experiencing more rapid changes in blood pressure and/or changes in pulse and heart rate. Impaired Comfort would apply if the client was complaining of other adverse reactions such as dry mouth or constipation. There is no information provided that would suggest decreased cardiac output.

1. A nursing instructor is planning a class for a group of nursing students about cholinergic drugs. When describing the enzyme acetylcholinesterase, which of the following would the instructor most likely include about this enzyme? Select all that apply.
   A) Makes the parasympathetic nervous system function differently
   B) Inactivates the neurotransmitter serotonin
   C) Activates the neurotransmitter acetylcholine
   D) Inactivates the neurotransmitter norepinephrine
   E) Results in the prevention of nerve synapses to continue nerve impulses
   Ans: A, E
   Feedback:
   Acetylcholinesterase makes the parasympathetic nervous system function differently by inactivating the neurotransmitter acetylcholine, thereby preventing the nerve synapse from continuing the nerve impulse.

2. The nurse is preparing to administer a cholinergic drug. The nurse understands that the drug would be appropriate for which condition? Select all that apply.
   A) Urinary retention
   B) Overactive bladder
   C) Myasthenia gravis
   D) Parkinson's disease
   E) Graves' disease
   Ans: A, C
   Feedback:
   Cholinergic drugs can be used to treat urinary retention, myasthenia gravis, and glaucoma.

3. A nurse is administering cholinergic eye drops to a client. The nurse would be alert for which of the following as a possible adverse reaction? Select all that apply.
   A) Nausea
   B) Headache
   C) Nasal congestion
   D) Decreased visual acuity
   E) Decreased auditory acuity
   Ans: B, D
   Feedback:
   Cholinergic eye drops are used to treat glaucoma. Topical administration usually produces few adverse reactions, but a temporary reduction of visual acuity and headache may occur.

4. A client is prescribed pyridostigmine. When teaching the client about this drug, which of the following would the nurse include as a possible adverse reaction? Select all that apply.
   A) Constipation
   B) Nausea
   C) Dry mouth
   D) Skin flushing
   E) Muscle rigidity
   Ans: B, D
   Feedback:
   Pyridostigmine is an oral cholinergic medication used in the treatment of myasthenia gravis. General adverse reactions associated with oral administration include nausea, diarrhea, abdominal cramping, salivation, skin flushing, cardiac arrhythmias, and muscle weakness.

5. A nurse is reviewing the medical record of a client who is to be prescribed a cholinergic drug. Which condition, if found, would alert the nurse to a possible contraindication to the prescribed therapy? Select all that apply.
   A) Pancreatitis
   B) Diabetes
   C) Asthma
   D) Hyperthyroidism
   E) Peptic ulcer disease
   Ans: C, D, E
   Feedback:
   The use of cholinergic drugs is contraindicated in clients with known hypersensitivity to the drugs, asthma, peptic ulcer disease, coronary artery disease, and hyperthyroidism.

6. A client is prescribed ambenonium. The nurse would assess the client closely if the client has a history of which of the following? Select all that apply.
   A) Diabetes
   B) Hypertension
   C) Tachycardia
   D) Epilepsy
   E) Megacolon
   Ans: B, D
   Feedback:
   Cholinergic drugs, like ambenonium, are used cautiously in clients with hypertension, epilepsy, cardiac arrhythmias, bradycardia, recent coronary occlusion, and megacolon.

7. When assessing a client receiving a cholinergic drug, the nurse would assess the client for increased neuromuscular blocking effects if the client is also receiving which of the following? Select all that apply.
   A) Amoxicillin
   B) Tobramycin
   C) Cephalexin
   D) Neomycin
   E) Clarithromycin
   Ans: B, D
   Feedback:
   Cholinergic drugs administered concomitantly with aminoglycoside antibiotics, like tobramycin and neomycin, can result in increased neuromuscular blocking effects.

8. A nurse would be alert for an increase in cholinergic effects if a client who is prescribed a cholinergic drug is also receiving which medication? Select all that apply.
   A) Prednisone
   B) Oxycodone
   C) Diclofenac
   D) Dexamethasone
   E) Ibuprofen
   Ans: A, D
   Feedback:
   Cholinergic drugs administered concomitantly with corticosteroids, like prednisone and dexamethasone, can result in increased adverse effects of the cholinergic drug.

9. Prior to administering bethanechol to a client, the nurse would assess which of the following? Select all that apply.
   A) Palpation of the bladder
   B) Palpation of the thyroid
   C) Blood glucose
   D) Blood pressure
   E) Pulse rate
   Ans: A, D, E
   Feedback:
   Bethanechol is used to treat urinary retentions. The nurse's preadministration assessment should include palpation of the bladder, blood pressure, and pulse rate prior to its administration to a client.

10. Which of the following would the nurse assess before administering ambenonium to a client? Select all that apply.
    A) Palpation of the bladder
    B) Palpation of the thyroid
    C) Evidence of muscle weakness
    D) Signs of difficulty breathing
    E) Drooping of eyelids
    Ans: C, D, E
    Feedback:
    Ambenonium is used to treat myasthenia gravis. The nurse's preadministration assessment should include assessment for signs of muscle weakness, such as drooling, inability to chew and swallow, drooping eyelids, inability to perform repetitive movements, difficulty breathing, and extreme fatigue.

11. A nurse should notify the physician immediately if a client taking a cholinergic drug develops which of the following? Select all that apply.
    A) Hypoglycemia
    B) Excessive salivation
    C) Severe abdominal cramping
    D) Muscle rigidity
    E) Muscle spasms
    Ans: B, C, D, E
    Feedback:
    A client receiving a cholinergic drug is at risk for a cholinergic crisis. The signs of cholinergic crisis include severe abdominal cramping; diarrhea; excessive salivation; muscle weakness, rigidity, and spasms; and clenching of the jaw. Any of these symptoms should be reported to the physician immediately.

12. After teaching a group of nursing students about cholinergic drugs, the instructor determines a need for additional teaching when the students identify which drug as being administered orally?
    A) Ambenonium
    B) Bethanechol
    C) Pyridostigmine
    D) Edrophonium
    Ans: D
    Feedback:
    Edrophonium is a cholinergic drug that is administered intravenously. Ambenonium, bethanechol, and pyridostigmine are administered orally.

13. When conducting client teaching with a client and his family about the prescribed cholinergic therapy for myasthenia gravis, which of the following would be most important to include? Select all that apply.
    A) How to adjust dosage
    B) Indications of drug underdosage
    C) The need to monitor blood glucose levels
    D) How to keep a record of response to therapy
    E) The need to wear medical identification
    Ans: A, B, D, E
    Feedback:
    Client and family teaching should include signs and symptoms associated with under- and overdosage, instructions on how to adjust the dosage up or down, how to keep a record of the response to therapy, and the importance of wearing medical identification. There is no need for the client and family to monitor blood glucose levels.

14. Based on the nurse's understanding of which body systems are affected by cholinergic drug adverse reactions, the nurse would be alert for adverse reactions involving which body system? Select all that apply.
    A) Endocrine
    B) Circulatory
    C) Respiratory
    D) Gastrointestinal
    E) Central nervous
    Ans: B, C, D, E
    Feedback:
    Cholinergic drug adverse reactions affect the circulatory, respiratory, gastrointestinal, and central nervous systems.

15. A client has been prescribed pyridostigmine for myasthenia gravis. The nurse would be alert for the development of which of the following?
    A) Seizure disorder
    B) Reduction of visual acuity
    C) Abdominal discomfort
    D) Cardiac arrhythmias
    Ans: D
    Feedback:
    The nurse should monitor for cardiac arrhythmias as a general adverse reaction in the client. Seizure disorder, reduction of visual acuity, and abdominal discomfort are not pyridostigmine-related adverse reactions. Reduction of visual acuity is related to topical ophthalmics. When the client is receiving bethanechol chloride for urinary retention, the nurse needs to examine for abdominal discomfort, which is an adverse reaction of bethanechol chloride and not pyridostigmine.

16. A nurse is caring for a client with urinary retention who is prescribed bethanechol. The nurse would administer this drug cautiously if the client has which of the following?
    A) Raynaud's disease
    B) Bradycardia
    C) Coronary artery disease
    D) Hyperthyroidism
    Ans: B
    Feedback:
    The nurse should administer bethanechol cautiously if a client has bradycardia, hypertension, epilepsy, cardiac arrhythmias, recent coronary occlusion, or megacolon. Cautious use is not necessary if the client has Raynaud's disease, coronary artery disease, or hyperthyroidism.

17. A nurse is caring for a client with urinary retention who is receiving a cholinergic drug as part of the treatment plan. After administering the drug, the nurse would notify the primary health care provider if the assessment reveals which of the following?
    A) Failure to void after drug administration
    B) Frequent vomiting after drug administration
    C) Increase in abdominal pain after drug administration
    D) Occurrence of blood in urine after drug administration
    Ans: A
    Feedback:
    The nurse should notify the primary health care provider if the client fails to void after drug administration. Frequent vomiting, increase in abdominal pain, and occurrence of blood in urine are not usually observed when urinary retention is treated with cholinergic therapy.

18. A nurse is caring for a client with myasthenia gravis at a health care facility. The client is receiving ambenonium. The nurse suspects that the dosage is insufficient based on assessment of which of the following?
    A) Clenching of the jaw
    B) Muscle spasms
    C) Difficulty breathing
    D) Abdominal cramping
    Ans: C
    Feedback:
    The nurse should monitor for difficulty breathing as a symptom of drug underdosage. Clenching of the jaw and muscle spasms are symptoms of drug overdosage. Abdominal cramping may occur in the client who is receiving guanidine.

19. The nurse is developing a teaching plan for a client who is receiving outpatient therapy with a cholinergic drug. Which of the following would be appropriate for the nurse to include?
    A) Instructions to avoid fiber-rich food during therapy
    B) Importance of adopting a self-monitoring blood pressure program
    C) Review of the purpose of the drug therapy with the client and family
    D) Evaluation of the client's previous history of disorders
    Ans: C
    Feedback:
    The nurse should review the purpose of the drug therapy with the client and family when developing a teaching plan for a client receiving outpatient therapy with a cholinergic drug. Instructing the client to avoid fiber-rich food during therapy, suggesting the client adapt a self-monitoring blood pressure program, and evaluating the client's previous history of disorders would be inappropriate to include in the teaching plan.

20. A nurse is providing care to a client who is receiving an ophthalmic cholinergic drug. When reviewing the client's medical history, which of the following, if found, would the nurse identify as a contraindication?
    A) Cataracts
    B) Diabetic retinopathy
    C) Megacolon
    D) Corneal abrasion
    Ans: D
    Feedback:
    The nurse should know that ophthalmic cholinergic drugs are contraindicated in clients with corneal abrasions. The use of ophthalmic cholinergic drugs is not contraindicated in clients with cataracts, diabetic retinopathy, or megacolon. Cholinergic drugs are used cautiously in clients with megacolon.

21. The nurse identifies a nursing diagnosis of Diarrhea for a client being started on cholinergic drug therapy. Which of the following would the nurse most likely include in the client's plan of care? Select all that apply.
    A) Ensure that the client has readily available access to the bathroom.
    B) Evaluate the number, frequency, and consistency of the stools.
    C) Contact the primary health care provider for an order to switch to another cholinergic drug.
    D) Limit the client's fluid intake to 1000 mL per day.
    E) Maintain the client on strict bed rest.
    Ans: A, B
    Feedback:
    When a cholinergic drug is administered, the client may experience diarrhea. This reaction will continue until tolerance develops, usually within a few weeks. Until tolerance develops, the nurse needs to ensure that proper facilities, such as a bedside commode, bedpan, or bathroom, are readily available. The patient is encouraged to ambulate to assist in the passing of flatus. If needed, a rectal tube may be used to assist in the passing of flatus. The nurse should document fluid intake and output and track the number, consistency, and frequency of stools if diarrhea is present. Since diarrhea occurs with any cholinergic drug, switching to another would be of no help. The client needs to replace fluids lost with diarrhea, so limiting fluid intake would be inappropriate. Ambulating to assist with the passage of flatus would be appropriate, while strict bed rest would not be necessary.

22. The nurse administers a prescribed oral dose of bethanechol to a client with urinary retention at 9:30 a.m. The nurse would notify the primary health care provider if the client has not voided by which time?
    A) 9:45 a.m.
    B) 10 a.m.
    C) 10:30 a.m.
    D) 11 a.m.
    Ans: D
    Feedback:
    When bethanechol is administered orally, the client should void within 30 to 90 minutes. Therefore, if the client has not yet voided by 11 a.m., the nurse should notify the primary health care provider.

23. A client with myasthenia gravis who is prescribed pyridostigmine comes to the emergency department complaining of abdominal cramping, excessive diarrhea, and severe muscle weakness. The nurse would suspect which of the following?
    A) Underdosage of the drug
    B) Tolerance to the drug
    C) Cholinergic crisis
    D) Underlying infection
    Ans: C
    Feedback:
    Cholinergic crisis (cholinergic drug toxicity) symptoms include severe abdominal cramping; diarrhea; excessive salivation; muscle weakness, rigidity, and spasms; and clenching of the jaw. Signs of drug underdosage are signs of the disease itself, namely, rapid fatigability of the muscles, drooping of the eyelids, and difficulty breathing. Tolerance would be indicated by a reduction in the adverse reactions to the drug that the client was experiencing. There is no information to suggest that the client has an underlying infection.

24. After teaching a group of nursing students about the parasympathetic nervous system, the instructor determines that the teaching was successful when the students identify which of the following as an action? Select all that apply.
    A) Decreased salivary gland production
    B) Vasodilation
    C) Increased peristalsis
    D) Bronchodilation
    E) Pupillary constriction
    Ans: B, C, E
    Feedback:
    Stimulation of the parasympathetic nervous system results in the opposite reactions to those triggered by the adrenergic system: blood vessels dilate, sending blood to the gastrointestinal (GI) tract; secretions and peristalsis are activated and salivary glands increase production; the heart slows and pulmonary bronchioles constrict; the smooth muscle of the bladder contracts; and the pupils of the eyes constrict.

25. A group of nursing students are reviewing information about the parasympathetic nervous system. The students demonstrate understanding of the information when they identify that which type of receptor is involved with stimulating smooth muscle in the parasympathetic nervous system?
    A) Nicotinic
    B) Muscarinic
    C) Alpha
    D) Beta
    Ans: B
    Feedback:
    There are two types of receptors in the parasympathetic nervous branch: muscarinic receptors (which stimulate smooth muscle) and nicotinic receptors (which stimulate skeletal muscle). Alpha and beta receptors are found in the sympathetic nervous system.

1. When describing the different cholinergic blockers, which of the following would a nursing instructor include as affecting only the muscarinic receptors? Select all that apply.
   A) Darifenacin (Enablex)
   B) Oxybutynin (Ditropan)
   C) Benztropine (Cogentin)
   D) Biperiden (Akineton)
   E) Tolterodine (Detrol)
   Ans: A, B, E
   Feedback:
   Antispasmodic cholinergic blocking drugs, like darifenacin (Enablex), oxybutynin (Ditropan), and tolterodine (Detrol), only affect muscarinic receptors in the parasympathetic nervous system and have no effect on nicotinic receptors.

2. A nurse suspects that a client who has received scopolamine is experiencing an idiosyncratic reaction to the drug based on assessment of which of the following? Select all that apply.
   A) Drowsiness
   B) Restlessness
   C) Hypotension
   D) Insomnia
   E) Dry mouth
   Ans: B, D
   Feedback:
   Excitement, delirium, restlessness, and insomnia represent idiosyncratic reactions to scopolamine.

3. A nurse is providing care to a client with COPD. The nurse anticipates that which of the following would be appropriate to be prescribed for this client? Select all that apply.
   A) Darifenacin (Enablex)
   B) Ipratropium (Atrovent)
   C) Benztropine (Cogentin)
   D) Biperiden (Akineton)
   E) Tiotropium (Spiriva)
   Ans: B, E
   Feedback:
   Ipratropium (Atrovent) and tiotropium (Spiriva) are inhaled cholinergic blocking drugs used in the treatment of chronic obstructive pulmonary disease (COPD).

4. A nurse would monitor a client receiving a cholinergic blocking drug for an increased effect when the drug is administered with which of the following? Select all that apply.
   A) Fluconazole (Diflucan)
   B) Meperidine (Demerol)
   C) Haloperidol (Haldol)
   D) Amitriptyline (Elavil)
   E) Digoxin (Lanoxin)
   Ans: B, D
   Feedback:
   A nurse may notice an increased effect of the cholinergic blocking drug when it is administered with meperidine (Demerol) and amitriptyline (Elavil) because meperidine and tricyclic antidepressants increase the effect of the cholinergic blockers. If given with fluconazole, an antifungal agent, the effectiveness of the antifungal agent decreases. If given with haloperidol, haloperidol's effectiveness is decreased. If given with digoxin, the risk for digoxin toxicity increases.

5. The nurse should monitor clients taking which of the following medications closely for decreased efficacy if a cholinergic blocking drug is initiated? Select all that apply.
   A) Fluconazole (Diflucan)
   B) Meperidine (Demerol)
   C) Haloperidol (Haldol)
   D) Amitriptyline (Elavil)
   E) Digoxin (Lanoxin)
   Ans: A, C
   Feedback:
   The nurse should monitor clients taking fluconazole (Diflucan) and haloperidol (Haldol) closely for decreased efficacy if a cholinergic blocking drug is initiated.

6. A nurse is administering glycopyrrolate to a client with a peptic ulcer. The nurse would assess the client for which of the following as a possible GI system adverse reaction? Select all that apply.
   A) Diarrhea
   B) Dry mouth
   C) Constipation
   D) Nausea
   E) Dysphagia
   Ans: B, C, D, E
   Feedback:
   A nurse administering glycopyrrolate to a client with a peptic ulcer should monitor the client for dry mouth, nausea, vomiting, constipation, and dysphagia.

7. After administering a cholinergic blocking drug to a client, assessment of which of the following would lead the nurse to suspect that the client is experiencing a visual adverse reaction to the drug? Select all that apply.
   A) Miosis
   B) Photophobia
   C) Mydriasis
   D) Diplopia
   E) Cycloplegia
   Ans: B, C, E
   Feedback:
   Possible adverse effects include blurred vision, mydriasis, photophobia, cycloplegia, and increased ocular tension.

8. A nurse withholds a cholinergic blocking drug prescribed for an older adult client based on which assessment finding? Select all that apply.
   A) Excitement
   B) Mental confusion
   C) Urinary retention
   D) Drowsiness
   E) Agitation
   Ans: A, B, C, D, E
   Feedback:
   A nurse should withhold a cholinergic blocking drug from an older adult client who is excited, agitated, mentally confused, drowsy, or experiencing urinary retention or other adverse effects.

9. A client comes to the clinic for a follow-up visit. It is a hot July afternoon. The client has been prescribed a cholinergic blocking drug. Which of the following would lead the nurse to suspect that the client is experiencing heat prostration? Select all that apply.
   A) Chills
   B) Flushing
   C) Bradycardia
   D) Cool, moist skin
   E) Mental confusion
   Ans: B, E
   Feedback:
   Cholinergic blocking drugs can cause decreased sweating, increasing a client's risk for heat prostration. The signs of heat prostration include fever; tachycardia; flushing; warm, dry skin; and mental confusion.

10. A nurse is reviewing the medical record of a client who is to receive a cholinergic blocking drug. Which of the following would the nurse identify, if found, as contraindicating the use of the drug? Select all that apply.
    A) Pancreatitis
    B) Diabetes
    C) Asthma
    D) Glaucoma
    E) Myocardial infarction
    Ans: D, E
    Feedback:
    The use of a cholinergic blocking drug is contraindicated in clients with known hypersensitivity to the drugs, glaucoma, myasthenia gravis, tachyarrhythmias, myocardial infarction, and congestive heart failure (unless bradycardia is present).

11. A client is prescribed benztropine. The nurse would administer the drug cautiously and monitor the client closely if the client also had a diagnosis of which of the following? Select all that apply.
    A) Hyperthyroidism
    B) Hepatic disease
    C) Renal disease
    D) Epilepsy
    E) Hypertension
    Ans: A, B, C, E
    Feedback:
    Cholinergic blocking drugs, like benztropine (Cogentin), are used cautiously in clients with hypertension, GI infection, benign prostatic hypertrophy, urinary retention, hyperthyroidism, and hepatic or renal disease.

12. If a cholinergic blocking drug is administered prior to surgery, which of the following would be most appropriate? Select all that apply.
    A) Encourage the client to void after the drug is given.
    B) Tell the client that his mouth may feel dry.
    C) Allow the client to take sips of fluids.
    D) Have the client remain in bed after drug administration.
    E) Encourage the client to sit in the chair for about 30 minutes.
    Ans: B, D
    Feedback:
    If a cholinergic blocking drug is administered prior to surgery, the nurse instructs the client to void before the drug is given, that an extremely dry mouth is normal but that no fluid should be ingested, and that the client should remain in bed, not sit in a chair.

13. A client has a nursing diagnosis of Impaired Comfort related to xerostomia from the daily administration of a cholinergic blocking drug. When assessing the client, the nurse would be alert for which of the following? Select all that apply.
    A) Dysphagia
    B) Tooth decay
    C) Gingivitis
    D) Impeded speech
    E) Gingival hyperplasia
    Ans: A, D
    Feedback:
    Dry mouth caused by daily use of cholinergic blocking drugs can result in dysphagia and impeded, difficult-to-understand speech. Tooth decay, gingivitis, and gingival hyperplasia are not associated with dry mouth.

14. A nurse identifies a nursing diagnosis of Constipation related to the effects of the prescribed cholinergic blocking drug. Which of the following would the nurse expect to include in the client's plan of care? Select all that apply.
    A) Encouraging the intake of a diet high in fiber
    B) Decreasing the dosage of the cholinergic blocking medication
    C) Increasing client's fluid intake to at least 2000 mL daily
    D) Withholding the drug until the client resumes usual bowel pattern
    E) Encouraging ambulation and exercise as appropriate
    Ans: A, C, E
    Feedback:
    Appropriate interventions include encouraging a high-fiber diet, increasing fluid intake, and encouraging ambulation and exercise. It is not the nurse's decision to decrease the dosage. Withholding the drug until the client's bowel patterns return would be inappropriate.

15. The nurse instructs the client and family about possible visual and mental adverse reactions that can occur. Which of the following would the nurse include in the teaching to reduce the client's risk for injury? Select all that apply.
    A) Removing throw rugs
    B) Moving furniture against the wall
    C) Making sure floors are dry
    D) Avoiding having the floors waxed
    E) Removing electrical cords from walkways
    Ans: A, B, C, D, E
    Feedback:
    Objects or situations that may cause falls, such as throw rugs, electrical cords, footstools, furniture, and wet or newly waxed floors, are removed or avoided whenever possible.

16. A nurse is assigned to care for a client with biliary colic in a health care facility. The client has been prescribed atropine. The nurse reviews the client's medical record and determines that the client should not receive this drug because the client has a history of which of the following?
    A) Hepatic disease
    B) Benign prostatic hypertrophy
    C) Myocardial infarction
    D) Urinary retention
    Ans: C
    Feedback:
    The nurse should know that the use of atropine is contraindicated in clients with myocardial infarction. Other contraindications include myasthenia gravis, tachyarrhythmia, and congestive heart failure (unless bradycardia is present). Hepatic disease, benign prostatic hypertrophy, and urinary retention are conditions requiring cautious administration and are not contraindications for use.

17. A client with an overactive bladder has been prescribed solifenacin by the physician. The client is also taking digoxin for the treatment of a cardiac condition. The nurse should monitor the client for an increase in which of the following resulting from the interaction of these two drugs?
    A) Increased neuromuscular blocking effect
    B) Increased effectiveness of digoxin
    C) Increased serum levels of digoxin
    D) Increased effectiveness of solifenacin
    Ans: C
    Feedback:
    The nurse should monitor for increased serum levels of digoxin that occur due to the interaction of solifenacin and digoxin. Increased neuromuscular blocking is an effect of the interaction of aminoglycoside antibiotics with cholinergic drugs. Increased effectiveness of digoxin and solifenacin are not the effects associated with the interaction of solifenacin and digoxin.

18. A nurse is caring for a client admitted to the health care facility. The client is receiving a cholinergic blocking drug as treatment for bladder overactivity. Which intervention would be most appropriate for the nurse to include as part of the client's ongoing assessment?
    A) Assessment of the client's medical history
    B) Evaluation of symptoms related to the client's diagnosis
    C) Monitoring of the client's vital signs every 24 hours
    D) Observation for behavioral changes in the client
    Ans: B
    Feedback:
    The nurse should evaluate the symptoms and complaints related to the client's diagnosis during the ongoing assessment of the treatment. The nurse should assess the medical history of the client before administration of the drug as part of the preadministration assessment. The vital signs of the client should be monitored regularly instead of every 24 hours. The nurse need not observe for behavioral changes in the client based on the client's diagnosis and condition.

19. A nurse is caring for a 60-year-old client with a peptic ulcer. The client is prescribed belladonna. The nurse would closely monitor this client for which of the following?
    A) Disorientation
    B) Lightheadedness
    C) Blurred vision
    D) Mydriasis
    Ans: C
    Feedback:
    The nurse should monitor for blurred vision in the client after administration of the belladonna alkaloid drug. The other conditions observed are drowsiness, tachycardia, dry mouth, and urinary hesitancy. Disorientation, lightheadedness, and mydriasis are adverse reactions associated with the administration of trihexyphenidyl.

20. A nurse is teaching a client about the increased risk of heat prostration during the hot summer months related to his prescribed scopolamine therapy. The nurse determines that the teaching was successful when the client identifies which of the following as a sign of this condition?
    A) Dry mouth
    B) Fever
    C) Skin rash
    D) Urinary retention
    Ans: B
    Feedback:
    Signs of heat prostration include fever; tachycardia; flushing; warm, dry skin; and mental confusion.

21. A client with a peptic ulcer visits a health care facility. The physician has prescribed belladonna as part of the treatment. Before administering this drug, the nurse would assess which of the following?
    A) Saliva
    B) Stools
    C) Urine pH
    D) Blood glucose level
    Ans: B
    Feedback:
    Before administering belladonna, the nurse should check the stools of the client who has a peptic ulcer along with performing additional assessments such as color and signs of occult blood. The nurse need not check saliva, urine pH, or blood glucose level.

22. A nurse is administering a cholinergic blocking drug preoperatively to a client. What intervention should the nurse perform after administering the drug to the client?
    A) Provide cold milk to the client.
    B) Raise the side rails of the bed.
    C) Tell the client to lie completely flat in bed.
    D) Provide frequent sips of water.
    Ans: B
    Feedback:
    The nurse should raise the side rails of the client's bed after administration of the drug. The nurse need not provide cold milk or provide frequent sips of water as fluids cannot be given after administering the drug. The client needs to remain in bed, but he or she can assume a position of comfort. There is no need to lie completely flat.

23. A nurse is caring for a client who has been prescribed belladonna for the treatment of prolonged diarrhea. Which of the following nursing interventions should the nurse perform before administering the drug?
    A) Check stools of the client.
    B) Monitor for abdominal pain.
    C) Assess weight of the client.
    D) Monitor vital signs every 2 hours.
    Ans: C
    Feedback:
    The nurse should assess the client's weight when caring for this client with prolonged diarrhea. The nurse should check the stools of the client who has been administered belladonna alkaloids for the treatment of peptic ulcer. The nurse need not monitor for abdominal pain or monitor the client's vital signs every 2 hours when caring for a client with diarrhea.

24. A nurse is caring for a client receiving cholinergic blocking drug therapy. The client complains of a cotton-mouth feeling. Which of the following would be most appropriate?
    A) Inspect the throat for signs of an infection.
    B) Suggest the client avoid ingesting water before taking the drug.
    C) Check the oral cavity daily for soreness or ulcerations.
    D) Suggest the client avoid the use of ice or cold beverages.
    Ans: C
    Feedback:
    The nurse should check the oral cavity daily for soreness or ulcerations when caring for a client with severe mouth dryness. The nurse should encourage the client to take a few sips of water before and while taking the drug and to sip water at intervals during meals. If allowed, hard candy slowly dissolved in the mouth and frequent sips of water during the day may help relieve persistent oral dryness. There is no need to inspect the throat for infection or to avoid ice and cold beverages.

25. A client is experiencing photophobia secondary to the administration of a cholinergic blocking drug. Which of the following would be most appropriate?
    A) Keeping the client's room brightly lit
    B) Limiting the use of overhead lights
    C) Encouraging the client to use sunscreen
    D) Suggesting the client avoid watching television
    Ans: B
    Feedback:
    If photophobia is a problem, the patient may need to wear shaded glasses when going outside, even on cloudy days. Rooms are kept dimly lit and curtains or blinds closed to eliminate bright sunlight in the room. Those with photophobia may be more comfortable in a semi-darkened room, especially on sunny days. It is a good idea to use overhead lights as little as possible. Sunscreen would be appropriate for photosensitivity, not photophobia. Avoiding television would be appropriate if the client experienced mydriasis and cycloplegia.

26. A client with motion sickness is prescribed transdermal scopolamine. The nurse would instruct the client to apply the patch at which frequency?
    A) Every 8 hours
    B) Every 24 hours
    C) Every 48 hours
    D) Every 72 hours
    Ans: D
    Feedback:
    A scopolamine patch is applied 4 hours before travel every 3 days or every 72 hours.

27. A nursing instructor is conducting a class for a group of nursing students about cholinergic blocking drugs. The instructor determines that the teaching was successful when the students identify which of the following as a cholinergic blocking drug used to treat Parkinson's disease? Select all that apply.
    A) Fesoterodine
    B) Trospium
    C) Benztropine mesylate
    D) Biperiden
    E) Trihexyphenidyl
    Ans: C, D, E
    Feedback:
    Cholinergic blocking drugs used to treat Parkinson's disease include benztropine mesylate, biperiden, and trihexyphenidyl. Fesoterodine and trospium are cholinergic blocking antispasmodics.

1. A nursing instructor is describing parkinsonism to a group of nursing students. The instructor determines that the teaching was successful when the students identify which of the following as a possible cause? Select all that apply.
   A) Drugs
   B) Stroke
   C) Myocardial infarction
   D) Encephalitis
   E) Epilepsy
   Ans: A, D
   Feedback:
   Parkinsonism may result from the use of certain drugs, head injuries, and encephalitis.

2. A group of students are reviewing antiparkinson drugs. They demonstrate understanding when they identify which of the following as classified as dopaminergic drugs? Select all that apply.
   A) Amantadine (Symmetrel)
   B) Bromocriptine (Parlodel)
   C) Biperiden (Akineton)
   D) Carbidopa (Lodosyn)
   E) Benztropine (Cogentin)
   Ans: A, B, D
   Feedback:
   Amantadine (Symmetrel), bromocriptine (Parlodel), and carbidopa (Lodosyn) are classified as dopaminergic drugs. Biperiden and benztropine are cholinergic blocking drugs used to treat Parkinson's disease.

3. A nurse is reviewing the medication record of several clients with Parkinson's disease. The nurse identifies which drug if included in the client's record as being classified as a catechol-O-methyltransferase (COMT) inhibitor drug? Select all that apply.
   A) Amantadine (Symmetrel)
   B) Bromocriptine (Parlodel)
   C) Biperiden (Akineton)
   D) Entacapone (Comtan)
   E) Tolcapone (Tasmar)
   Ans: D, E
   Feedback:
   Entacapone (Comtan) and tolcapone (Tasmar) are classified as COMT inhibitors. Amantadine and bromocriptine are dopaminergic drugs. Biperiden is a cholinergic blocking drug.

4. A nurse reviews a client's medical record for possible conditions that would contraindicate the use of carbidopa/levodopa (Sinemet). Which of the following would the nurse identify as a contraindication? Select all that apply.
   A) Narrow-angle glaucoma
   B) Renal disease
   C) Hepatic disease
   D) Diabetes
   E) Use of MAOI antidepressants
   Ans: A, E
   Feedback:
   Carbidopa/levodopa (Sinemet) is contraindicated in clients who have known hypersensitivity to the drug or narrow-angle glaucoma or who use MAOI antidepressants.

5. A client is prescribed carbidopa/levodopa. The nurse understands that this drug should be administered cautiously to clients with which condition? Select all that apply.
   A) Hyperthyroidism
   B) Seizure disorder
   C) Renal disease
   D) Asthma
   E) Peptic ulcer disease
   Ans: C, D, E
   Feedback:
   Carbidopa/levodopa (Sinemet) is used cautiously in clients with cardiovascular or pulmonary disease (asthma), peptic ulcer disease, renal or hepatic disease, and psychosis.

6. A nurse administering carbidopa/levodopa (Sinemet) to a client should monitor the client for decreased effects of carbidopa/levodopa when which of the following medications are initiated? Select all that apply.
   A) Phenytoin (Dilantin)
   B) Amitriptyline (Elavil)
   C) Zonisamide (Zonegran)
   D) Ibuprofen (Motrin)
   E) Meperidine (Demerol)
   Ans: A, C
   Feedback:
   A nurse administering carbidopa/levodopa (Sinemet) to a client should monitor the client for decreased effects of carbidopa/levodopa (Sinemet) when anticonvulsants, like phenytoin and zonisamide, are initiated.

7. The nurse would be alert for a client taking benztropine (Cogentin) to have increased anticholinergic effects if which of the following medications are also started? Select all that apply.
   A) Amantadine (Symmetrel)
   B) Quetiapine (Seroquel)
   C) Glycopyrrolate (Robinul)
   D) Perphenazine (Trilafon)
   E) Tiotropium (Spiriva)
   Ans: A, D
   Feedback:
   A client taking benztropine (Cogentin) will have increased anticholinergic effects if amantadine or phenothiazines such as perphenazine are given together.

8. The nurse understands the need for cautious administration of the prescribed entacapone to a client with which of the following? Select all that apply.
   A) Hypotension
   B) Renal dysfunction
   C) Hepatic dysfunction
   D) Diabetes
   E) Hypertension
   Ans: A, B, C, E
   Feedback:
   The nurse should cautiously administer entacapone (Comtan) to clients with hypotension, hypertension, and decreased hepatic or renal function.

9. After administering tolcapone (Tasmar) to a client, the nurse would be alert for which of the following as a possible adverse reaction? Select all that apply.
   A) Orthostatic hypotension
   B) Renal failure
   C) Dyskinesia
   D) Dry mouth
   E) Anorexia
   Ans: A, C, E
   Feedback:
   Adverse reactions associated with tolcapone (Tasmar) include orthostatic hypotension, dyskinesia, sleep disorders, dystonia, excessive dreaming, somnolence, dizziness, nausea, anorexia, muscle cramps, and liver failure.

10. A client is prescribed ropinirole (Requip). The nurse would anticipate an increase in dopamine agonist effects if which of the following medications are initiated? Select all that apply.
    A) Ranitidine (Zantac)
    B) Verapamil (Calan)
    C) Estradiol (Estrace)
    D) Perphenazine (Trilafon)
    E) Lisinopril (Prinivil)
    Ans: A, B, C
    Feedback:
    A client taking ropinirole (Requip) will have increased dopamine agonist effects if ranitidine, verapamil, or estrogens such as estradiol are initiated.

11. A client is receiving carbidopa/levodopa (Sinemet). When assessing this client for possible adverse reactions, which of the following might the nurse note? Select all that apply.
    A) Choreiform movements
    B) Hyperglycemia
    C) Hypotension
    D) Dry mouth
    E) Anorexia
    Ans: A, D, E
    Feedback:
    The most common adverse reactions associated with carbidopa/levodopa include anorexia, nausea, vomiting, abdominal pain, dysphagia, dry mouth, mental changes, headache, dizziness, increased hand tremor, and choreiform and dystonic movements.

12. When reviewing the medication records of several clients, the nurse notes documentation of nonergot dopamine receptor agonists. Which of the following would the nurse most likely note? Select all that apply.
    A) Pramipexole (Mirapex)
    B) Entacapone (Comtan)
    C) Amantadine (Symmetrel)
    D) Ropinirole (Requip)
    E) Benztropine (Cogentin)
    Ans: A, D
    Feedback:
    Pramipexole (Mirapex) and ropinirole (Requip) are nonergot dopamine receptor agonists.

13. A client tells the nurse that he takes the drug Stalevo. The nurse understands that this drug is a combination of which of the following? Select all that apply.
    A) Benztropine
    B) Levodopa
    C) Carbidopa
    D) Tolcapone
    E) Entacapone
    Ans: B, C, E
    Feedback:
    Stalevo is a brand-name combination product that contains carbidopa, levodopa, and entacapone.

14. A nurse is caring for a client who has been prescribed pramipexole for the treatment of Parkinson's disease. From the client's medical records, the nurse understands that the client is taking verapamil. The nurse understands that the client is at increased risk for which effect from the interaction of the two drugs?
    A) Cardiac symptoms
    B) Agonist effectiveness
    C) Toxicity of both drugs
    D) Psychotic behavior
    Ans: B
    Feedback:
    The nurse should assess for an increased risk of agonist effectiveness in the client. Increased risk of cardiac symptoms and increased risk of toxicity of both drugs are the effects of the interaction of COMT inhibitors with MAOI antidepressants and adrenergic drugs. Increased risk of psychotic behavior is the effect of the interaction of cholinergic blocking drugs with haloperidol.

15. A nurse is caring for a 55-year-old client with Parkinson's disease who is prescribed entacapone. The nurse would monitor this client for which adverse reaction?
    A) Increased hand tremor
    B) Constipation
    C) Urinary retention
    D) Dyskinesia
    Ans: D
    Feedback:
    The nurse should monitor for dyskinesia, which is an adverse reaction of the COMT inhibitors, in the client. The other adverse reactions include dizziness, hyperkinesia, nausea, anorexia, diarrhea, orthostatic hypotension, sleep disorders, excessive dreaming, somnolence, and muscle cramps. A serious, and possibly fatal, adverse reaction that can occur with the administration of tolcapone, one of the COMT inhibitors, is liver failure. Increased hand tremor and constipation are adverse effects associated with the use of dopaminergic drugs. Urinary retention is an adverse reaction associated with the administration of cholinergic blocking drugs.

16. A nurse is caring for a client who has been prescribed amantadine for the treatment of the influenza A virus. After administration of the drug, the client complains of dry mouth. Which of the following instructions should the nurse offer the client to help relieve dry mouth?
    A) Instruct the client to take ice chips frequently.
    B) Encourage the client to take small, frequent meals.
    C) Instruct the client to avoid protein-rich foods.
    D) Stop the use of the antiparkinsonism drug by the client.
    Ans: A
    Feedback:
    The nurse should instruct the client to suck on ice chips or hard candy (if allowed). The nurse should also instruct the client to take frequent sips of water throughout the day and between meals. The nurse encourages the client to have small, frequent meals when the client experiences a GI disturbance and not when the client complains of dry mouth. The nurse also need not instruct the client to avoid protein-rich foods because this will not reduce the client's discomfort due to dry mouth. The nurse should stop the use of the antiparkinsonism drug when the client complains of severe nausea or vomiting and not when the client is experiencing dry mouth. If dry mouth is so severe that there is difficulty in swallowing or speaking, or if loss of appetite and weight loss occur, the dosage of the antiparkinsonism drug may be reduced but not stopped completely.

17. A nurse is caring for a 70-year-old client who is receiving anticholinergic drug therapy for Parkinson's disease. The nurse would be alert for the development of which of the following in this client?
    A) Confusion and disorientation
    B) Choreiform movements
    C) Suicidal tendencies
    D) Psychotic episodes
    Ans: A
    Feedback:
    The nurse should assess for confusion and disorientation when caring for this elderly client receiving anticholinergic drug therapy. Individuals older than 60 years frequently develop increased sensitivity to anticholinergic drugs and require careful monitoring. Lower doses may also be required in such cases. Choreiform movements, suicidal tendencies, and psychotic episodes are serious adverse reactions associated with the use of levodopa, which is a dopaminergic drug.

18. A nurse is assigned to care for a 40-year-old client with a hepatic injury that has occurred due to the administration of tolcapone. Which of the following interventions should the nurse perform when caring for this client?
    A) Monitor the client for signs of tactile hallucinations.
    B) Monitor the client for signs of dystonic movements.
    C) Perform regular blood tests of the client.
    D) Perform serum transaminase level testing every day.
    Ans: C
    Feedback:
    A serious and potentially fatal adverse reaction to tolcapone is hepatic injury. The nurse should, therefore, perform regular blood testing to monitor liver function of the client as prescribed. The testing of serum transaminase levels may be ordered at frequent intervals such as every 2 weeks for the first year and every 8 weeks thereafter. The nurse need not perform serum transaminase level testing every day. The nurse should monitor for signs of dystonic movements when caring for a client receiving carbidopa and levodopa, not tolcapone. The nurse should monitor for signs of tactile hallucinations when caring for an elderly client receiving tolcapone.

19. A nurse is caring for a 70-year-old client undergoing antiparkinsonism drug therapy. The client is prescribed pramipexole by the physician. The nurse should monitor the client's condition for the development of which of the following adverse reactions associated with the use of this drug?
    A) Blurred vision
    B) Memory loss
    C) Visual hallucinations
    D) Muscular rigidity
    Ans: C
    Feedback:
    The nurse should monitor the elderly client who is administered a dopamine receptor antagonist for signs of visual, auditory, or tactile hallucinations. Hallucinations occur more often in older adults than in younger adults receiving the antiparkinsonism drugs, especially when taking the dopamine receptor agonists. The incidence of hallucinations appears to increase with age. The nurse need not monitor the client's condition for signs of blurred vision, memory loss, and muscular rigidity as these conditions are not known to occur in elderly clients due to the use of dopamine receptor agonists.

20. A nurse is assigned to care for a client who is to receive a cholinergic blocking drug. The nurse obtains the history from the client. Which of the following would alert the nurse to the need for cautious administration?
    A) The client has a decreased liver function.
    B) The client has a history of hallucinations or psychosis.
    C) The client has a cardiovascular disease.
    D) The client has a pulmonary disease.
    Ans: A
    Feedback:
    It is important for the nurse to know if the client has decreased liver or kidney function so that the cholinergic blocking drug can be administered cautiously in the client. Other conditions in clients that require cautious use include tachycardia, cardiac arrhythmias, hypertension, hypotension, tendency toward urinary retention, and obstructive disease of the urinary system or gastrointestinal tract. The cholinergic blocking drugs are given with caution to older adults. The nurse should use dopamine receptor agonist drugs with caution in clients with a history of hallucinations or psychosis or cardiovascular disease. The nurse should use dopaminergic drugs with caution in clients with pulmonary diseases.

21. A nurse is caring for a client who requires antiparkinson drug therapy. The nurse confirms that which of the following conditions is absent because it would contraindicate the use of the COMT inhibitor?
    A) Pregnancy
    B) Achalasia
    C) Peptic ulcers
    D) Glaucoma
    Ans: A
    Feedback:
    The nurse should confirm that the client is not pregnant or lactating and that the client does not have a hypersensitivity to the drug to ensure that the use of COMT inhibitors is not contraindicated. Achalasia, peptic ulcers, and glaucoma are not conditions that are contraindications to the use of COMT inhibitors. The use of cholinergic blocking drugs is contraindicated in clients with achalasia, peptic ulcers, and glaucoma.

22. A nurse is caring for a client who has received carbidopa/levodopa. After administration of the first dose of the drug, the client has developed gastrointestinal disturbances. Which of the following nursing interventions would be most appropriate?
    A) Administer the next drug dose with milk.
    B) Withhold the next drug dose.
    C) Observe for alterations in blood pressure.
    D) Administer the next drug dose with meals.
    Ans: D
    Feedback:
    The nurse should administer the next drug dose with meals to manage gastrointestinal disturbances in a client who has been administered antiparkinsonism drugs. Withholding the next drug dose, administering the next drug dose with milk, or observing alterations in the client's blood pressure are not appropriate interventions when caring for a client who is experiencing GI disturbances with the first dose of antiparkinsonism drugs.

23. A client with Parkinson's disease is undergoing treatment in a health care facility. Which of the following nursing interventions should the nurse perform as part of the client's ongoing assessment?
    A) Assess the client for ability to perform the daily activities.
    B) Observe the current mental condition of the client.
    C) Observe the client for various neuromuscular signs.
    D) Prepare a baseline for future evaluations of the client's drug therapy.
    Ans: C
    Feedback:
    The nurse should evaluate the client's response to drug therapy by observing the client for various neuromuscular signs to compare these observations with the data obtained during the initial physical assessment. The nurse should assess the client's ability to perform daily activities and observe the client's current mental condition before the drug is administered to the client as part of the preadministration assessment. During the preadministration assessment, before starting the drug therapy, the nurse also performs a physical assessment of the client to provide a baseline for future evaluations of drug therapy.

24. A nurse is reviewing the medical record of a client who is exhibiting Parkinson-like adverse reactions due to drug therapy. Which drugs might the nurse note in the client's record? Select all that apply.
    A) Antidepressants
    B) Conventional antipsychotics
    C) Lithium
    D) Opioids
    E) NSAIDs
    Ans: A, B, C
    Feedback:
    Drugs such as antidepressants, antiemetics, first-generation antipsychotics, lithium, and stimulants can cause symptoms similar to Parkinson's disease. Opioids and NSAIDs are not associated with Parkinson-like symptoms.

25. A client is admitted to the health care facility with a diagnosis of Parkinson's disease. When assessing the client, which of the following would the nurse expect to find? Select all that apply.
    A) Slurred speech
    B) Erect posture
    C) Step-like gait
    D) Tremors
    E) Rapid, jerky movements
    Ans: A, D
    Feedback:
    The cardinal signs of Parkinson's disease include tremors, rigidity, and slow movement (bradykinesia). Other symptoms of Parkinson's disease include slurred speech, a mask-like and emotionless appearance of the face, and difficulty chewing and swallowing. The patient assumes a rigid, bent-forward posture and the gait becomes unsteady and shuffled.

26. After administering an antiparkinson drug to a client, the nurse assesses the effectiveness of the drug. The nurse notes that the client's slow movements have improved. The nurse documents this as an improvement in which of the following?
    A) Akathisia
    B) Bradykinesia
    C) Achalasia
    D) Choreiform movements
    Ans: B
    Feedback:
    Bradykinesia refers to the slow movements associated with Parkinson's disease. Akathisia refers to extreme restlessness and increased motor activity. Achalasia refers to the failure to relax, usually referring to the smooth muscle fibers of the GI tract. Choreiform movements refer to the involuntary muscular twitching of the limbs or facial muscles.

27. After teaching the family of a client with Parkinson's disease about possible adverse reactions, the nurse determines that the teaching was successful when the family states they will withhold the drug if the client experiences which of the following? Select all that apply.
    A) Facial grimacing
    B) Exaggerated chewing motions
    C) Protruding tongue
    D) Constipation
    E) Lack of appetite
    Ans: A, B, C
    Feedback:
    The nurse should teach the client and family how to describe movements and to be alert for those such as facial grimacing, protruding tongue, exaggerated chewing motions and head movements, and jerking movements of the arms and legs. If these occur, the client should not take the next drug dose and should notify the primary health care provider immediately.

28. After teaching a group of nursing students issues and problems commonly associated with antiparkinson drug therapy, the instructor determines that the teaching was successful when the students identify which nursing diagnosis as common? Select all that apply.
    A) Risk for Injury
    B) Risk for Infection
    C) Diarrhea
    D) Impaired Physical Mobility
    E) Imbalanced Nutrition: More Than Body Requirements
    Ans: A, D
    Feedback:
    Common drug therapy–related nursing diagnoses include Risk for Injury, Constipation, Impaired Physical Mobility, Imbalanced Nutrition: Less Than Body Requirements, and Disturbed Sleep Pattern.

1. When describing the anticonvulsants to a group of nursing students, the instructor describes which of the following as acting to stabilize the hyperexcitability postsynaptically in the motor cortex of the brain? Select all that apply.
   A) Ethosuximide (Zarontin)
   B) Phenytoin (Dilantin)
   C) Valproic acid (Depakote)
   D) Ethotoin (Peganone).
   E) Topiramate (Topamax)
   Ans: B, D
   Feedback:
   Hydantoins, like phenytoin (Dilantin) and ethotoin (Peganone), exert their effect by stabilizing the hyperexcitability postsynaptically in the motor cortex of the brain. Ethosuximide depresses the motor cortex, valproic acid increases levels of GABA to stabilize the cell membranes, and topiramate blocks seizure activity instead of raising the threshold.

2. After reviewing information about anticonvulsants, a nursing student demonstrates understanding of this group of drugs, identifying which of the following as acting to elevate the seizure threshold by decreasing postsynaptic excitation? Select all that apply.
   A) Clonazepam (Klonopin)
   B) Valproic acid (Depakote)
   C) Gabapentin (Neurontin)
   D) Lorazepam (Ativan)
   E) Trimethadione (Tridione)
   Ans: A, D
   Feedback:
   Benzodiazepines (clonazepam and lorazepam) exert their effect by elevating the seizure threshold by decreasing postsynaptic excitation. Valproic acid increases the levels of GABA, gabapentin is a GABA agonist, and trimethadione decreases the repetitive synaptic transmission of nerve impulses.

3. A nurse understands that lorazepam (Ativan) is the drug of choice for treating status epilepticus but that its effects last for less than 1 hour. The nurse would expect which of the following to be prescribed along with lorazepam (Ativan) during status epilepticus? Select all that apply.
   A) Ethosuximide (Zarontin)
   B) Phenytoin (Dilantin)
   C) Ethotoin (Peganone)
   D) Zonisamide (Zonegran)
   Ans: B
   Feedback:
   Due to the short effects of lorazepam (Ativan), a longer-acting anticonvulsant, such as phenytoin (Dilantin), is given to continue control of seizure activity.

4. When reviewing the client's medical record, the nurse understands that which of the following if found would contraindicate administering phenytoin (Dilantin) to a client? Select all that apply.
   A) Pregnancy
   B) Sinus bradycardia
   C) Hepatic disease
   D) Diabetes
   E) Atrial fibrillation
   Ans: A, B
   Feedback:
   The use of phenytoin is contraindicated in clients with known hypersensitivity to the drug, sinus bradycardia, sinoatrial block, Adam-Stokes syndrome, and second- and third-degree atrioventricular block and in clients who are pregnant or lactating.

5. A nurse is preparing to administer phenytoin to a client. The nurse understands the need to administer this drug cautiously if the client has a history of which of the following? Select all that apply.
   A) Hyperthyroidism
   B) Hypotension
   C) Diabetes
   D) Asthma
   E) Hepatic impairment
   Ans: B, E
   Feedback:
   Phenytoin (Dilantin) is used cautiously in clients with hypotension, severe myocardial insufficiency, and hepatic impairment.

6. A nurse administering valproic acid to a client should monitor the client for increased effects of valproic acid when which of the following medications are initiated? Select all that apply.
   A) Cimetidine (Tagamet)
   B) Amitriptyline (Elavil)
   C) Metformin (Glucophage)
   D) Aspirin
   E) Lisinopril (Prinivil)
   Ans: A, B, D
   Feedback:
   A nurse administering valproic acid to a client should monitor the client for increased effects of valproic acid when antibiotics, antifungals, salicylates (such as aspirin), tricyclic antidepressants such as amitriptyline, and cimetidine are initiated.

7. The nurse would closely monitor a client taking which of the following anticonvulsants for pancytopenia? Select all that apply.
   A) Carbamazepine (Tegretol)
   B) Phenytoin (Dilantin)
   C) Valproic acid (Depakote)
   D) Felbamate (Felbatol)
   E) Zonisamide (Zonegran)
   Ans: A, D
   Feedback:
   A client taking carbamazepine (Tegretol) or felbamate (Felbatol) should be monitored closely for pancytopenia.

8. The nurse is assessing a client for gingival hyperplasia based on the understanding that this adverse reaction is commonly associated with long-term administration of which of the following? Select all that apply.
   A) Carbamazepine (Tegretol)
   B) Phenytoin (Dilantin)
   C) Valproic acid (Depakote)
   D) Felbamate (Felbatol)
   E) Ethotoin (Peganone)
   Ans: B, E
   Feedback:
   Gingival hyperplasia, although it can occur with any anticonvulsant, is commonly associated with long-term hydantoin therapy such as with phenytoin or ethotoin.

9. A nurse monitoring a client taking trimethadione should notify the primary health care provider if assessment reveals which of the following? Select all that apply.
   A) Visual disturbances
   B) Fever
   C) Easy bruising
   D) Dry mouth
   E) Sore throat
   Ans: A, B, C, E
   Feedback:
   A nurse monitoring a client taking trimethadione should notify the primary health care provider if visual disturbances, excessive drowsiness or dizziness, sore throat, fever, skin rash, pregnancy, malaise, easy bruising, epistaxis, or bleeding is observed.

10. After teaching a client and family about prescribed phenytoin therapy, the nurse determines that the teaching was successful when they identify that which of the following should be reported to the primary health care provider as possibly indicating toxicity? Select all that apply.
    A) Ataxia
    B) Nystagmus
    C) Slurred speech
    D) Lethargy
    E) Diplopia
    Ans: A, C, D
    Feedback:
    Signs suggesting phenytoin toxicity that need to be reported include slurred speech, ataxia, lethargy, dizziness, nausea, and vomiting.

11. When developing the teaching plan for a client receiving ethosuximide (Zarontin), the nurse would include instructions to notify the primary health care provider if which of the following occur? Select all that apply.
    A) Ataxia
    B) Blurred vision
    C) Slurred speech
    D) Joint pain
    E) Bruising
    Ans: B, D, E
    Feedback:
    A nurse educating a client and family about ethosuximide (Zarontin) should tell them to notify the physician if skin rash, joint pain, unexplained fever, sore throat, unusual bleeding or bruising, drowsiness, blurred vision, or pregnancy occurs.

12. A nurse is assessing a client's seizure activity. Which of the following would the nurse include? Select all that apply.
    A) Description of seizures
    B) Seizure frequency
    C) Average length of seizures
    D) Description of aura
    E) Description of the degree of impairment
    Ans: A, B, C, D, E
    Feedback:
    The nurse's general assessment of seizure activity should include the following: description of seizures, seizure frequency, average length of seizures, description of aura, description of the degree of impairment, and description of what appears to bring on the seizure.

13. A nurse should monitor a client closely for increased CNS depressant effects when an anticonvulsant is used concomitantly with which of the following? Select all that apply.
    A) Analgesics
    B) Oral contraceptives
    C) Alcohol
    D) Antibiotics
    E) Antidiabetic medications
    Ans: A, C
    Feedback:
    The concomitant use of anticonvulsants and analgesics or alcohol can result in increased CNS depressant effects.

14. The nurse is assessing a client who is receiving felbamate. The nurse suspects that the client may be developing pancytopenia based on which assessment finding? Select all that apply.
    A) Gingival hyperplasia
    B) Sore throat
    C) Epistaxis
    D) Skin rash
    E) Bruising
    Ans: B, C, E
    Feedback:
    Signs of pancytopenia include sore throat, fever, general malaise, bleeding of the mucous membranes, epistaxis (bleeding from the nose), and easy bruising. Gingival hyperplasia and skin rash are examples of adverse reactions, but these are not associated with pancytopenia.

15. A client is prescribed phenytoin daily for seizures. The nurse teaches the client about the importance of adhering to the dosage schedule based on the understanding that which of the following may occur if a single dose is missed?
    A) CNS depression
    B) Hypotension
    C) Recurrence of seizures
    D) Nystagmus
    Ans: C
    Feedback:
    Recurrence of seizure activity may result from abrupt discontinuation of the drug, even when the anticonvulsant is being administered in small daily doses. Abrupt discontinuation of the drug does not cause CNS depression, hypotension, or nystagmus. CNS depression, hypotension, and nystagmus are adverse reactions of phenytoin.

16. A nurse is caring for a client who is prescribed carbamazepine. When reviewing the client's medical record, the nurse would notify the health care provider for a change in the order if the client has which of the following?
    A) Bipolar disorder
    B) Renal impairment
    C) Hearing impairment
    D) Respiratory depression
    Ans: B
    Feedback:
    Carbamazepine is contraindicated among clients with renal impairment. It can be prescribed to treat bipolar disorder. The drug is not contraindicated in clients with hearing impairment or respiratory depression.

17. The nurse suspects that the client is developing toxicity if assessment reveals which of the following?
    A) Constipation
    B) Slurred speech
    C) Diarrhea
    D) Urinary frequency
    Ans: B
    Feedback:
    The nurse should monitor the client for slurred speech, which is a sign of toxicity. Constipation, diarrhea, and urinary frequency are not signs of ethotoin toxicity.

18. A nurse at a health care center has been asked to prepare a teaching plan for a client on oxazolidinedione therapy. Which of the following points should the nurse include?
    A) Avoiding exposure to ultraviolet light
    B) Taking the drug 2 hours after a meal
    C) Taking the drug with milk
    D) Avoiding carbonated drinks during therapy
    Ans: A
    Feedback:
    The nurse should suggest avoiding exposure to ultraviolet light in the teaching plan of the client on oxazolidinedione therapy because of the risk for photosensitivity. The nurse need not include taking the drug 2 hours after a meal, taking the drug with milk, or avoiding carbonated drinks.

19. An older adult client is prescribed diazepam for seizure control. Which of the following would be most important for the nurse to monitor?
    A) Respiratory rate and depth
    B) Blood glucose levels
    C) Swallowing ability
    D) Speech quality
    Ans: A
    Feedback:
    Apnea and cardiac arrest can occur when diazepam is administered to older adults, very ill patients, and individuals with limited pulmonary reserve. Therefore, monitoring the client's respiratory rate and depth would be most important. There is no need to monitor the client's blood glucose levels, swallowing ability, or speech quality unless these were issues before this drug therapy was initiated.

20. A client with partial seizures has been prescribed a succinimide anticonvulsant. The client complains of GI upset after taking the drug. The nurse would suggest taking the drug in which manner?
    A) Daily at bedtime
    B) Immediately before eating a meal
    C) With some food or milk
    D) First thing in the morning on arising
    Ans: C
    Feedback:
    If the client experiences GI upset after succinimide administration, the nurse should instruct the client to take the drug with food or milk. The nurse need not instruct the client to take the drug once only at bedtime, before meals, or immediately on arising in the morning.

21. A nurse is caring for a client with seizure disorders who is admitted to the health care facility. The client is prescribed phenytoin. During therapy, which of the following would be most important for the nurse to include in the ongoing assessment??
    A) Check the client's temperature every 3 to 4 hours.
    B) Obtain serum plasma drug levels regularly.
    C) Assess the client's respiratory rate.
    D) Evaluate the client's pulse rate and rhythm.
    Ans: B
    Feedback:
    Although vital signs such as temperature, pulse rate and rhythm, and respiratory rate are commonly assessed routinely, it would be most important for the nurse to obtain serum plasma drug levels to evaluate the effectiveness of the therapy and also to prevent possible toxicity. Unless the client's vital signs are not within normal parameters, the nurse would monitor them based on the facility's policy.

22. A primary health care provider prescribes phenytoin to be administered parenterally to a client with a seizure disorder. The nurse prepares the drug to be given by which method?
    A) Intradermally
    B) Subcutaneously
    C) Intramuscularly
    D) Intravenously
    Ans: D
    Feedback:
    Phenytoin can be administered orally and parenterally. If the drug is administered parenterally, the intravenous (IV) route is preferred over the intramuscular (IM) route, because with the IM route erratic absorption of phenytoin causes pain and muscle damage at the injection site. The drug is not administered intradermally or subcutaneously.

23. The primary health care provider prescribes diazepam 10 mg IV to be administered to a client to control his seizures. The nurse would administer this drug over which time frame?
    A) 1 minute
    B) 2 minutes
    C) 5 minutes
    D) 10 minutes
    Ans: B
    Feedback:
    When used to control seizures, diazepam is administered IV pushed slowly as close as possible to the IV site, allowing at least 1 minute for each 5 mg of drug. For a dosage of 10 mg, the nurse would administer the drug over 2 minutes.

24. Assessment of a client receiving anticonvulsant therapy reveals the following: sore throat, chills, fever, gingival bleeding, and bruising. Which nursing diagnosis would the nurse most likely identify?
    A) Risk for Impaired Skin Integrity
    B) Impaired Oral Mucous Membranes
    C) Risk for Injury
    D) Risk for Infection
    Ans: D
    Feedback:
    The assessment findings suggest pancytopenia, so Risk for Infection would be most likely. Risk for Impaired Skin Integrity would be appropriate if the client developed a rash. Impaired Oral Mucous Membranes would be appropriate if the client was exhibiting signs of gingival hyperplasia. Risk for Injury would be appropriate if the client was experiencing drowsiness, ataxia, and vision disturbances related to the drug therapy.

25. A nurse is developing a plan of care for a client receiving anticonvulsant therapy and identifies a nursing diagnosis of Risk for Injury. Which assessment findings would support this nursing diagnosis? Select all that apply.
    A) Epistaxis
    B) Reports of blurred vision
    C) Complaints of dizziness
    D) Photosensitivity
    E) Scaling red rash
    Ans: B, C, D
    Feedback:
    A client would be at risk for injury if the client was experiencing blurred vision, dizziness, and photosensitivity. Epistaxis would support a nursing diagnosis of a possible Risk for Injury related to a reduction in platelets from hematologic adverse reactions. A scaling red rash would support a nursing diagnosis of Impaired Skin Integrity.

26. A client comes to the clinic for a follow-up visit. The client is prescribed lamotrigine for seizure control. The nurse suspects that the client may be experiencing Stevens-Johnson syndrome based on which of the following?
    A) Complaints of muscle pain
    B) Lesions on the mucous membranes
    C) Blisters on the face and neck
    D) Recurrence of seizure activity
    E) Dizziness
    Ans: A, B, C
    Feedback:
    Stevens-Johnson syndrome (SJS) is manifested by fever, cough, muscular aches and pains, headache, and lesions of the skin, mucous membranes, and eyes; the lesions appear as red wheals or blisters, often starting on the face, in the mouth, or on the lips, neck, and extremities. Recurrence of seizure activity and dizziness are not associated with this condition.

1. Before administering cyclobenzaprine, a nurse reviews a client's medical record. Which condition if found would alert the nurse to a possible contraindication for this drug? Select all that apply.
   A) Recent myocardial infarction
   B) Diabetes
   C) Hepatic disease
   D) Hypertension
   E) Hyperthyroidism
   Ans: A, E
   Feedback:
   The use of cyclobenzaprine (Flexeril) is contraindicated in clients with a recent myocardial infarction, cardiac conduction disorders, hyperthyroidism, and known hypersensitivity to the drug and within 14 days of the administration of an MAOI.

2. Before administering dantrolene to a client, the nurse checks the client's medical history for possible contraindications for use. Which condition would the nurse identify as problematic? Select all that apply.
   A) Hypertension
   B) Atrial fibrillation
   C) Hepatic disease
   D) Diabetes
   E) Lactation
   Ans: C, E
   Feedback:
   The use of dantrolene is contraindicated during lactation and in clients with active hepatic disease and muscle spasm caused by rheumatic disorders.

3. A client with which of the following would require the nurse to use caution when administering a skeletal muscle relaxant? Select all that apply.
   A) Cerebrovascular accident
   B) Diabetes
   C) Epilepsy
   D) Pregnancy
   E) Parkinsonism
   Ans: A, C, D, E
   Feedback:
   Skeletal muscle relaxants are used with caution in clients with a history of cerebrovascular accident, cerebral palsy, parkinsonism, or epilepsy and during pregnancy and lactation.

4. A nurse would monitor a client closely for increased CNS depressant effects when a skeletal muscle relaxant is used concomitantly with which of the following? Select all that apply.
   A) Antihistamine
   B) Oral contraceptives
   C) Alcohol
   D) Opiates
   E) Antidiabetic medications
   Ans: A, C, D
   Feedback:
   The concomitant use of skeletal muscle relaxants and antihistamines, alcohol, opiates, or sedatives can result in increased CNS depressant effects.

5. After teaching a client receiving leflunomide, the nurse determines that the teaching was successful when the client identifies which of the following as a possible adverse reaction? Select all that apply.
   A) Alopecia
   B) Hypotension
   C) Diarrhea
   D) Nystagmus
   E) Hematuria
   Ans: A, C
   Feedback:
   Adverse reactions to leflunomide include hypertension, alopecia, rash, nausea, and diarrhea.

6. A nurse reviews a client's medical history for conditions that would contraindicate use of methotrexate. Which of the following would the nurse identify as a possible contraindication? Select all that apply.
   A) Hypertension
   B) Folate deficiency
   C) Vitamin B_{12} deficiency
   D) Diabetes
   E) Liver disease
   Ans: B, E
   Feedback:
   The use of methotrexate is contraindicated in clients with known hypersensitivity to the drug and clients with renal insufficiency, liver disease, alcohol abuse, pancytopenia, or folate deficiency.

7. A nurse should administer adalimumab (Humira) cautiously to a client with a history of which of the following? Select all that apply.
   A) Hepatitis A
   B) Diabetes
   C) Obesity
   D) Hepatitis B
   E) Hepatitis C
   Ans: B, C, D, E
   Feedback:
   Adalimumab (Humira) is used with caution in clients with obesity, diabetes, and hepatitis B or C.

8. A nurse monitors a client closely for methotrexate toxicity when the client is also prescribed which of the following? Select all that apply.
   A) Aspirin (Ecotrin)
   B) Cephalexin (Keflex)
   C) Sulfamethoxazole/trimethoprim (Septra)
   D) Ibuprofen (Motrin)
   E) Diclofenac (Voltaren)
   Ans: A, C, D, E
   Feedback:
   The nurse should closely monitor the client for methotrexate toxicity when methotrexates is given with aspirin (Ecotrin), sulfa antibiotics (Septra) and NSAIDs (ibuprofen and diclofenac).

9. The nurse should screen clients carefully for medical conditions involving which of the following prior to the administration of colchicine? Select all that apply.
   A) Gastrointestinal disorders
   B) Pulmonary disorders
   C) Cardiac disorders
   D) Blood disorders
   E) Central nervous system disorders
   Ans: A, C, D
   Feedback:
   Colchicine is contraindicated in clients with serious GI, renal, hepatic, or cardiac disorders and those with blood dyscrasias.

10. A client is prescribed probenecid and several other medications. When reviewing the client's medication record, the nurse determines that the client is at risk for possible toxicity if which of the following is also prescribed? Select all that apply.
    A) Phenobarbital (Luminal)
    B) Valproic acid (Depakote)
    C) Diazepam (Valium)
    D) Diclofenac (Voltaren)
    E) Acyclovir (Zovirax)
    Ans: A, C, D, E
    Feedback:
    Probenecid (Benemid) increases the serum levels of the following medications, placing the client at risk for toxicity: penicillins, cephalosporins, acyclovir, rifampin, sulfonamides, barbiturates (phenobarbital), benzodiazepines (diazepam), and NSAIDs (diclofenac).

11. A client is receiving hydroxychloroquine. Which of the following adverse reactions should the nurse immediately report to the primary health care provider? Select all that apply.
    A) Diarrhea
    B) Tinnitus
    C) Fever
    D) Visual changes
    E) Nausea
    Ans: B, C, D
    Feedback:
    The nurse should report any of the following adverse reactions to the physician immediately if observed in a client taking hydroxychloroquine (Plaquenil): skin rash, fever, cough, easy bruising, visual changes, tinnitus, or hearing loss.

12. A nurse caring for a client with gout should monitor the client's fluid intake and output, as increased urinary output is needed to excrete uric acid. The nurse would encourage the client to achieve an intake of how much fluid per day?
    A) 1000 mL
    B) 1500 mL
    C) 2000 mL
    D) 3000 mL
    Ans: D
    Feedback:
    A client with gout is encouraged to drink at least 3000 mL of fluid per day to promote uric acid excretion.

13. Which of the following would the nurse include in the teaching plan for a client who is being discharged with a prescription for alendronate? Select all that apply.
    A) Take the medication in the evening.
    B) Take the medication with 6 to 8 ounces of water.
    C) Remain upright for at least 30 minutes after administration.
    D) Wait 30 minutes before taking any other food or drink.
    E) Take a calcium supplement at the same time with the medication.
    Ans: B, C, D
    Feedback:
    A nurse should include the following administration instructions to a client being discharged with a prescription for alendronate (Fosamax): take the medication in the morning with 6 to 8 ounces of water, remain upright for at least 30 minutes after administration, and do not take any other food, drink, medication, or supplement until at least 30 minutes after administration of the medication.

14. A client is receiving alendronate for osteoporosis. The client has informed the nurse that she has also been taking aspirin. Which of the following interactions should the nurse monitor for in this client?
    A) Increased risk of GI bleeding
    B) Decreased effects of bisphosphonate
    C) Increased level of sedation
    D) Increased risk of rash
    Ans: A
    Feedback:
    Interaction of aspirin with a bisphosphonate drug causes increased risk of GI bleeding, which requires monitoring. Interaction of a uric acid inhibitor with barbiturates and benzodiazepines causes an increased level of sedation. Interaction of a uric acid inhibitor with ampicillin causes increased risk of rash. Interaction of calcium supplements or antacids with bisphosphonates decreases the effects of bisphosphonates.

15. A nurse is caring for a client who is receiving cyclobenzaprine. The nurse would expect to assess which of the following as indicating the therapeutic effect of the drug?
    A) Reduction of muscle spasm
    B) Prevention of convulsion
    C) Relief from anxiety
    D) Relief from nervous disorder
    Ans: A
    Feedback:
    Cyclobenzaprine affects muscle tone, thereby causing reduction of muscle spasm. Administration of cyclobenzaprine does not result in prevention of convulsion, relief from anxiety, or relief from nervous disorder.

16. A client in the initial phase of gout is prescribed colchicine. After administering the drug, the nurse would continue to monitor the client for which of the following?
    A) Stomatitis
    B) Stevens-Johnson syndrome
    C) Bone marrow depression
    D) Exfoliative dermatitis
    Ans: C
    Feedback:
    The nurse needs to closely monitor the client for bone marrow depression, an adverse reaction of colchicine. Stomatitis, Stevens-Johnson syndrome, and exfoliative dermatitis are not adverse reactions of colchicine. Stomatitis is an adverse reaction of immunosuppressive drugs. Stevens-Johnson syndrome and exfoliative dermatitis are adverse reactions of allopurinol.

17. A client is receiving medication for gout. The nurse would include instructions about which of the following during the course of treatment?
    A) Taking drug on an empty stomach
    B) Using protection against sunlight
    C) Reporting any skin rash
    D) Wearing a brace to get out of bed
    Ans: C
    Feedback:
    The nurse should instruct the client to report any skin rash. A rash should be monitored carefully because it may precede a serious adverse reaction, such as Stevens-Johnson syndrome. The nurse need not instruct the client to take the drug on an empty stomach, use protection against sunlight, or wear a brace to get out of bed. Clients with osteoporosis are asked to wear a brace to get out of bed. Clients taking medications for gout are asked to take it with food. These clients are also instructed to avoid driving or performing other hazardous tasks.

18. A client is receiving hydroxychloroquine for a musculoskeletal disorder. Which of the following adverse reactions is irreversible and needs to be reported by the nurse?
    A) Easy bruising
    B) Skin rash
    C) Fever
    D) Visual changes
    Ans: D
    Feedback:
    The nurse needs to report complaints of visual changes in a client receiving hydroxychloroquine, because irreversible retinal damage may occur. Although easy bruising, skin rash, and fever are adverse reactions of the drug, they are not irreversible.

19. Which of the following would be most important for the nurse to assess when administering a bisphosphonate to a client with Paget's disease?
    A) Altered renal function
    B) Increased skin rashes
    C) Serum calcium levels
    D) Hematology function
    Ans: C
    Feedback:
    The nurse should monitor the serum levels of calcium before, during, and after bisphosphonate therapy, because bisphosphonates act primarily on the bone by inhibiting normal and abnormal bone resorption. These drugs are used cautiously in clients with renal function impairment but do not alter renal function. The nurse should monitor the client's renal function when allopurinol is administered and hematology function when methotrexate is administered.

20. A client is receiving allopurinol. Which of the following would be most important for the nurse to include in the client's plan of care?
    A) Liberal fluid intake
    B) Moderate exercise
    C) Use of a brace or corset
    D) Avoidance of direct sunlight
    Ans: A
    Feedback:
    When using uric acid inhibitors, such as allopurinol, the nurse should encourage liberal fluid intake and measure the client's intake and output. The client does not need to exercise or use braces or corsets; clients with osteoporosis may require a brace or corset when out of bed. The client need not avoid sunlight as uric acid inhibitors do not cause photosensitivity.

21. Which of the following instructions should the nurse specifically stress when administering drugs used for muscle spasm and cramping?
    A) Take the drug with food.
    B) Stay upright for 30 minutes after taking the drugs.
    C) Avoid alcohol or other CNS depressants.
    D) Take the drug with 6 to 8 ounces of water.
    Ans: C
    Feedback:
    The nurse should instruct the client to avoid alcohol or other CNS depressants when taking a drug for muscle spasms and cramping. The nurse should instruct clients taking drugs for osteoporosis to take them with 6 to 8 ounces of water and to stay upright for 30 minutes after taking drugs. The nurse should instruct clients with gout to take drugs for treating gout with food.

22. A nurse is caring for a client with a musculoskeletal disorder who is experiencing a significant impairment in the ability to ambulate due to pain. As a result, the client spends a majority of time in bed. Which of the following would the nurse most likely include in the client's plan of care?
    A) Changing the client's position every 2 hours
    B) Changing the bed linens every hour
    C) Encouraging the client to walk with assistance
    D) Encouraging the client to exercise with assistance
    Ans: A
    Feedback:
    The nurse should change the client's position every 2 hours and inspect pressure sites for skin breakdown. The nurse need not change linens every hour. Once the client's condition improves, then encouraging ambulation with assistance and exercises would be appropriate.

23. A client is receiving anakinra. After administering the drug, the nurse would continue to assess the client for which of the following?
    A) Constipation
    B) Abdominal pain
    C) Retinal changes
    D) Pancytopenia
    Ans: D
    Feedback:
    Due to the immunosuppressive properties of DMARD drugs, pancytopenia is an adverse effect of anakinra, a DMARD, and the client should be monitored for it closely. Administration of anakinra may also cause headache and irritation at the injection site, but not constipation, abdominal pain, or retinal changes.

24. The primary health care provider prescribes adalimumab. The nurse would prepare to administer this drug by which route?
    A) Orally
    B) Intramuscularly
    C) Subcutaneously
    D) Intravenously
    Ans: C
    Feedback:
    Adalimumab, a DMARD, is administered by subcutaneous injection. Abatacept and infliximab are examples of DMARDs that are administered IV. Methotrexate, sulfasalazine, and leflunomide are examples of DMARDs that can be given orally.

25. After teaching a group of nursing students about the various drugs used to treat musculoskeletal conditions, the instructor determines that the teaching was successful when the students identify which of the following as being used to treat osteoporosis?
    A) DMARDs
    B) Bone resorption inhibitors
    C) Skeletal muscle relaxants
    D) Uric acid inhibitors
    Ans: B
    Feedback:
    Bone resorption inhibitors are used to treat osteoporosis. Disease-modifying antirheumatic drugs (DMARDs) are used to treat rheumatoid arthritis. Uric acid inhibitors are used to treat gout. Skeletal muscle relaxants are used to alleviate muscle spasms and cramping.

26. A client with gout has not responded to the usual medications. The primary health care provider prescribes a pegloticase infusion. Based on the nurse's understanding of this drug, which nursing diagnosis would be most appropriate?
    A) Risk for Injury
    B) Acute Pain
    C) Impaired Comfort: Gastric Distress
    D) Risk for Allergic Response
    Ans: D
    Feedback:
    When first-line treatments for gout are not successful, sometimes drugs that are more toxic may be prescribed, such as the pegloticase infusion. During the infusion the patient is closely monitored for the development of adverse reactions, in particular anaphylaxis. Should an anaphylactic reaction occur, the infusion center staff members are prepared to start resuscitative measures as emergency personnel are notified.

27. A client tells the nurse that she takes her prescribed medication immediately upon arising each morning and does not eat or drink anything for 30 minutes while she stays in an upright sitting position. The nurse determines that the client is adhering to the medication regimen because which drug has been prescribed?
    A) Methotrexate
    B) Allopurinol
    C) Risedronate
    D) Baclofen
    Ans: C
    Feedback:
    The client is taking a bisphosphonate, which requires that it be taken upon arising in the morning with 6 to 8 ounces of water, with the client remaining in an upright position. Methotrexate (a DMARD), allopurinol (uric acid inhibitor), and baclofen (skeletal muscle relaxant) are taken with or immediately after meals to minimize gastric distress.

28. A group of nursing students are reviewing information about drug therapy for rheumatoid arthritis. The students demonstrate understanding of the information when they identify which of the following as an example of a DMARD? Select all that apply.
    A) Infliximab
    B) Etanercept
    C) Ibandronate
    D) Zoledronic acid
    E) Carisoprodol
    Ans: A, B
    Feedback:
    Infliximab and etanercept are examples of DMARDs. Ibandronate and zoledronic acid are examples of bone resorption inhibitors (bisphosphonates). Carisoprodol is a skeletal muscle relaxant.

1. When describing the actions of upper respiratory system drugs, a nursing instructor explains that which of the following exerts its effect by increasing the production of secretions, thereby decreasing the viscosity? Select all that apply.
   A) Benzonatate
   B) Guaifenesin
   C) Codeine
   D) Potassium iodide
   E) Dextromethorphan
   Ans: A, D
   Feedback:
   Benzonatate and potassium iodide are expectorants, which increase the production of secretions, thus making the secretions less viscous. Guaifenesin, codeine, and dextromethorphan are antitussives, which suppress cough.

2. Before administering an antitussive to a client, which of the following would the nurse assess? Select all that apply.
   A) Temperature
   B) Sputum presence
   C) Type of cough
   D) Bowel sounds
   E) Heart sounds
   Ans: A, B, C
   Feedback:
   Vital signs, type of cough, presence of sputum, color and amount of sputum, home remedies used, and actions taken should be assessed prior to initiation of an antitussive. Bowel and heart sounds are not part of the preadministration assessment.

3. After administering an antitussive, the nurse would continue to assess which of the following? Select all that apply.
   A) Heart sounds
   B) Lung sounds
   C) Frequency of cough
   D) Therapeutic effect
   E) Pain assessment
   Ans: B, C, D, E
   Feedback:
   Vital signs, lung sounds, therapeutic effect including frequency of cough, and assessment of pain should be part of the ongoing client assessment. Auscultation of heart sounds is not part of the ongoing client assessment.

4. A client is prescribed an antitussive for home use. Which of the following should a nurse include in the client's teaching plan? Select all that apply.
   A) Decreasing fluid intake during treatment with an antitussive
   B) Encouraging the use of sedatives during treatment
   C) Drinking fluids at least 30 minutes after taking a lozenge form
   D) Swallowing oral antitussive capsules whole
   E) Avoiding respiratory irritants during antitussive treatment
   Ans: D, E
   Feedback:
   A client's antitussive teaching plan should include the following instructions: do not exceed recommended dose; avoid respiratory irritants; drink plenty of fluids if not contraindicated; swallow oral capsules whole; avoid drinking fluids for 30 minutes after taking a lozenge; do not use alcohol or other CNS depressants while being treated with antitussives; and contact the physician if cough is not relieved or becomes worse or is accompanied by chills, fever, chest pain, or sputum production.

5. Assessment of a client reveals that he is taking phenelzine (Nardil), a monoamine oxidase inhibitor, for depression. The client reports that he just started using dextromethorphan over the counter without consulting his primary health care provider. The nurse would be alert for which of the following? Select all that apply.
   A) Hypertension
   B) Fever
   C) Coma
   D) Constipation
   E) Shortness of breath
   Ans: B, C
   Feedback:
   Coadministration of dextromethorphan and a monoamine oxidase inhibitor may result in hypotension, fever, nausea, leg jerking, and coma.

6. The nurse understands that codeine-containing antitussives should be used cautiously in clients with which of the following conditions? Select all that apply.
   A) Pregnancy
   B) Convulsive disorders
   C) Prostatic hypertrophy
   D) Hyperlipidemia
   E) Type 2 diabetes
   Ans: A, B, C
   Feedback:
   Codeine-containing antitussives should be used cautiously during pregnancy and labor and in clients with COPD, acute asthma attacks, pre-existing respiratory disorders, acute abdominal conditions, head injury, increased intracranial pressure, convulsive disorders, hepatic or renal impairment, and prostatic hypertrophy.

7. Eucalyptus is an herbal product that can be used as a decongestant and expectorant. In which of the following client populations would the nurse identify a contraindication for its use? Select all that apply.
   A) Pregnant females
   B) Children younger than 2 years of age
   C) Lactating females
   D) Postmenopausal females
   E) Men
   Ans: A, B, C
   Feedback:
   The use of eucalyptus is contraindicated during pregnancy and lactation, as well as in people who are hypersensitive to eucalyptus and in children younger than 2 years of age.

8. A client has a nursing diagnosis of Ineffective Airway Clearance. Which of the following would the nurse include in the client's plan of care? Select all that apply.
   A) Encouraging increased fluid intake
   B) Assisting the client in taking deep, diaphragmatic breaths
   C) Discouraging client movement
   D) Instructing the client to avoid coughing
   E) Encouraging the client to change positions
   Ans: A, B, E
   Feedback:
   Clients should be encouraged to change positions frequently, breathe deeply, and increase fluid intake to aid in effectively clearing the airway of sputum. Coughing helps to move mucus.

9. After teaching a client about his upper respiratory drug therapy, the nurse determines that additional teaching is needed when the client identifies which of the following as a reason to notify his primary health care provider?
   A) Cough changes from nonproductive to productive.
   B) Sputum appears clear.
   C) Sputum increases.
   D) Shortness of breath occurs.
   Ans: B
   Feedback:
   The client should notify his primary health care provider if the type of cough changes, sputum changes color or increases, and shortness of breath occurs. Clear sputum is normal.

10. A nurse is assigned to care for a client with a nonproductive cough. The client has been prescribed codeine sulfate. The nurse understands that this drug is contraindicated in which client?
    A) Client with head injury
    B) Client with COPD
    C) Premature infant
    D) Clients with asthma
    Ans: C
    Feedback:
    Codeine sulfate is contraindicated in premature infants. Codeine sulfate should be used cautiously in clients with head injury, COPD, and asthma.

11. A nurse is assigned to care for a client with bronchial irritation. The client is prescribed diphenhydramine. Before administering the drug, which of the following would the nurse do?
    A) Document color and amount of any sputum present.
    B) Record the previous prescriptions.
    C) Take vital signs every 4 hours.
    D) Assess the client's cardiovascular status.
    Ans: A
    Feedback:
    Before drug administration, the nurse should document the color and amount of any sputum present. The nurse need not record the previous prescriptions; however, the nurse should determine if any drugs the client uses would potentially interact with diphenhydramine. The nurse needs to take the client's vital signs, but not every 4 hours. The nurse needs to assess the respiratory status of the client before administering mucolytics and expectorants, but not before administering diphenhydramine HCl. Assessing the client's cardiovascular status is not necessary.

12. A nurse is caring for a client with thick sputum who is having difficulty bringing up mucus. Which nursing diagnosis would the nurse most likely identify?
    A) Ineffective Airway Clearance
    B) Acute Pain
    C) Risk for Injury
    D) Impaired Oral Mucous Membranes
    Ans: A
    Feedback:
    Thick sputum interferes with moving air effectively in and out of the respiratory tract. Therefore, the most likely nursing diagnosis would be Ineffective Airway Clearance. There is no evidence of pain. Risk for Injury would be appropriate if the client was experiencing sedation or drowsiness from the prescribed medication. Impaired Oral Mucous Membranes would be appropriate if the client was experiencing dry mouth from the medication.

13. A client with a nonproductive cough has been prescribed dextromethorphan HBr LiquiCaps. What instructions should the nurse provide the client to promote an optimal response to therapy?
    A) Take the drug with a glass of milk.
    B) Swallow the whole tablet and do not chew it.
    C) Dissolve the tablet in water and take the drug.
    D) Take the drug on an empty stomach.
    Ans: B
    Feedback:
    The nurse should instruct the client to swallow the whole tablet and not to chew it to ensure that the drug is absorbed properly. The nurse need not instruct the client to take the drug with a glass of milk, dissolve the tablet in water and take the drug, or take the drug on an empty stomach.

14. The nurse understands that an expectorant is administered cautiously to a client with which condition?
    A) Renal impairment
    B) Persistent headache
    C) Persistent cough
    D) Seizure disorder
    Ans: C
    Feedback:
    The nurse should use the expectorant drugs with caution in clients with persistent cough. The nurse should use antitussives with caution in clients with persistent headache. The nurse needs to use opioid antitussives cautiously in clients with renal impairment and seizure disorders.

15. A client suffers from motion sickness. Which of the following would the nurse anticipate the primary health care provider to prescribe? Select all that apply.
    A) Promethazine (Phenergan)
    B) Diphenhydramine (Benadryl)
    C) Levocetirizine (Xyzal)
    D) Azelastine (Astelin)
    E) Pseudoephedrine (Sudafed)
    Ans: A, B
    Feedback:
    Both promethazine and diphenhydramine can be used in the treatment of motion sickness. None of the other drugs listed would be appropriate.

16. The nurse is preparing to administer a drug that acts by reducing the swelling in the nasal passages by vasoconstriction. Which of the following might the nurse be administering? Select all that apply.
    A) Loratadine
    B) Guaifenesin
    C) Dextromethorphan
    D) Phenylephrine
    E) Oxymetazoline
    Ans: D, E
    Feedback:
    Phenylephrine and oxymetazoline are decongestants that reduce swelling in the nasal passages by vasoconstriction. Loratadine is an antihistamine, guaifenesin is an expectorant, and dextromethorphan is a centrally acting antitussive.

17. Before administering an antihistamine to a client, which of the following would the nurse include in the preadministration assessment? Select all that apply.
    A) Asking about symptoms
    B) Checking visual acuity
    C) Asking about prescription medications
    D) Auscultating bowel sounds
    E) Auscultating heart sounds
    Ans: A, C
    Feedback:
    The preadministration assessment for clients receiving antihistamines depends on the reason for use but should at the least include asking about symptoms of the involved areas and asking about prescription medications the client is taking.

18. After administering a decongestant, which of the following would the nurse include in the ongoing assessment? Select all that apply.
    A) Heart sounds
    B) Blood pressure
    C) Level of congestion
    D) Therapeutic effect
    E) Pain assessment
    Ans: B, C, D
    Feedback:
    The ongoing assessment for a client taking a decongestant should include assessment of blood pressure and pulse and asking about level of congestion, therapeutic effect, and adverse reactions.

19. When teaching a client about using a decongestant in a nasal spray form, which instruction would the nurse include? Select all that apply.
    A) "Recline on a bed and hang your head over the edge."
    B) "Sniff hard for a few minutes after administration."
    C) "Make sure the tip of the container is touching the nasal mucosa."
    D) "Do not share the container with anyone except family members."
    E) "Know that nasal burning or stinging may occur."
    Ans: B, E
    Feedback:
    A client should be instructed to administer a nasal spray while sitting upright, not allow the tip of the container to touch the nasal mucosa, and to sniff hard for a few minutes after administration. The client may experience some burning or stinging after the administration of the nasal spray. The container should not be shared with anyone.

20. The nurse would be especially alert for the development of which of the following when administering an antihistamine to an older adult? Select all that apply.
    A) Hypotension
    B) Hypertension
    C) Dry mouth
    D) Insomnia
    E) Sedation
    Ans: A, C, E
    Feedback:
    Older adult clients are more likely to experience anticholinergic effects (dry mouth), dizziness, sedation, hypotension, and confusion while taking an antihistamine.

21. A nursing instructor is describing the advantages of using a second-generation antihistamine over a first-generation antihistamine. Which of the following would the instructor most likely include? Select all that apply.
    A) Less sedation
    B) Fewer anticholinergic effects
    C) Less nausea
    D) Can be used during pregnancy
    E) Can be used during lactation
    Ans: A, B
    Feedback:
    Second-generation antihistamines cause less sedation and fewer anticholinergic effects because they selectively bind to peripheral rather than central H_1 receptors. Some first-generation antihistamines can be used as antiemetics. Use of any antihistamine is contraindicated during pregnancy and lactation.

22. When assessing an older client who is receiving an antihistamine, the nurse integrates knowledge of which of the following as contributing to the client's higher risk of injury? Select all that apply.
    A) Hearing loss
    B) Steady gait
    C) Visual impairment
    D) Hypertension
    E) Diabetes
    Ans: A, C
    Feedback:
    Older adult clients are more likely to experience injury from dizziness because with age comes an increased risk for falls due to sensorimotor deficits (hearing loss, visual impairment) or unsteady gait.

23. Based on the nurse's understanding of decongestants, the nurse would expect to administer this drug cautiously to a client with which of the following? Select all that apply.
    A) Diabetes
    B) Glaucoma
    C) Hypotension
    D) Hypothyroidism
    E) Arthritis
    Ans: A, B
    Feedback:
    The nurse should administer decongestants cautiously to clients with diabetes, heart disease, hypertension, hyperthyroidism, benign prostatic hypertrophy, and glaucoma. These clients should contact their primary health care provider before taking over-the-counter decongestants.

24. After teaching a group of nursing students about antihistamines, the instructor determines that the teaching was successful when the students identify which of the following as less sedating? Select all that apply.
    A) Loratadine (Claritin)
    B) Fexofenadine (Allegra)
    C) Cetirizine (Zyrtec)
    D) Brompheniramine (Lodrane)
    E) Clemastine (Tavist)
    Ans: A, B, C
    Feedback:
    Loratadine, fexofenadine, and cetirizine are considered second-generation antihistamines that are less sedating than first-generation antihistamines (brompheniramine and clemastine).

25. A client taking metoprolol (Lopressor) 50 mg one tablet twice daily begins taking over-the-counter pseudoephedrine. The nurse would assess for which of the following? Select all that apply.
    A) Hyperglycemic episode
    B) Hypertensive episode
    C) Rebound congestion
    D) Hypoglycemic episode
    E) Bradycardic episode
    Ans: B, E
    Feedback:
    A client taking a beta-adrenergic blocker, such as metoprolol, and a decongestant, such as pseudoephedrine, may develop an initial hypertensive episode followed by a bradycardic episode.

26. A client is suffering from rebound congestion. Which of the following would the nurse expect to do to help the client experience relief from rebound congestion? Select all that apply.
    A) Suggest the client switch from a topical decongestant to an oral product.
    B) Recommend the client switch from an oral decongestant to a topical product.
    C) Tell the client to abruptly discontinue the decongestant product.
    D) Advise the client to gradually discontinue the decongestant product.
    E) Suggest a saline irrigation of the nasal passages in place of the decongestant.
    Ans: A, D, E
    Feedback:
    Rebound congestion can be treated by a switch from a topical to an oral decongestant, gradual discontinuation of the topical decongestant, or replacement of the topical decongestant with saline irrigation of the nasal passages.

27. A client complains of increased sedation after the initiation of chlorpheniramine to treat her allergies. Which of the following would the nurse suggest to the client to treat her allergy symptoms that would result in less sedation? Select all that apply.
    A) Diphenhydramine (Benadryl)
    B) Clemastine (Tavist)
    C) Loratadine (Claritin)
    D) Cetirizine (Zyrtec)
    E) Phenylephrine (Neo-Synephrine)
    Ans: C, D
    Feedback:
    Loratadine and cetirizine are second-generation antihistamines, which can be less sedating than first-generation antihistamines, like chlorpheniramine, diphenhydramine, and clemastine. Phenylephrine is a decongestant used to treat nasal congestion.

28. A client with vasomotor rhinitis has been prescribed an antihistamine. The client is eager to know whether the prescribed antihistamine may cause excessive sedation. Which antihistamine would the nurse identify as having very little sedative effect?
    A) Brompheniramine
    B) Clemastine
    C) Chlorpheniramine
    D) Azelastine
    Ans: D
    Feedback:
    The nurse should assure the client that azelastine has very little sedative effect; it is a second-generation antihistamine with little effect on central nervous system (CNS) depression. Brompheniramine, clemastine, and chlorpheniramine are first-generation antihistamines. Sedation is seen more often with first-generation antihistamines.

29. A client has been prescribed a decongestant drug for congestion associated with rhinitis. When teaching the client about this drug, which of the following would the nurse include as a possible adverse reaction?
    A) Decreased pulse rate
    B) Blurred vision
    C) Drowsiness
    D) Dryness of throat
    Ans: B
    Feedback:
    The nurse should inform the client that blurred vision is a possible adverse reaction of decongestant drugs. Additionally, an increased and not decreased pulse rate may also be seen. Drowsiness is not seen with decongestant usage. Dryness of the nasal mucosa and not the throat may be seen with decongestant drugs, which are used mostly as topical sprays and drops.

30. A client with allergic rhinitis is prescribed an antihistamine. The nurse instructs the client to suck on sugarless hard candy to address which of the following?
    A) Drowsiness and sedation
    B) Thickening of the bronchial secretions
    C) Altered sensation of taste
    D) Dryness of the oral mucosa and the throat
    Ans: D
    Feedback:
    The nurse should instruct the client to suck on a sugarless hard candy to prevent dryness of the oral mucosa and the throat, which is a side effect of antihistamine therapy. Sucking on candy does not relieve drowsiness, sedation, and thickening of the bronchial mucosa seen with antihistamine therapy. Altered sense of taste does not occur with most antihistamines.

31. A 21-year-old client complains of a mild stinging sensation on using a nasal spray decongestant. Which response by the nurse would be most appropriate?
    A) "You need to stop the medication immediately."
    B) "The dose is probably too strong and needs to be reduced."
    C) "This sensation is common and usually disappears with continued use."
    D) "We better contact your primary health care provider right away."
    Ans: C
    Feedback:
    The nurse needs to assure the client that the mild stinging sensation usually disappears with continued use. The drug needs to be stopped only if the stinging sensation is severe. The dose of the medication does not need to be altered. The primary health care provider does not need to be consulted immediately in the presence of a mild stinging sensation.

32. A client has been prescribed a nasal decongestant for nasal stuffiness due to a common cold. The client is also taking an antidepressant that is a monoamine oxidase inhibitor. The nurse would warn the client about which of the following?
    A) Hypotension
    B) Severe headache
    C) Sedation
    D) Bradycardia
    Ans: B
    Feedback:
    The nurse should warn the client of the possibility of severe headache due to an interaction between the two drugs. Such an interaction may also result in hypertensive crisis instead of hypotension. Sedation and bradycardia do not occur when an MAOI and decongestant are used together.

1. When describing the drugs used to treat lower respiratory system conditions, the nursing instructor discusses chronic obstructive pulmonary disease (COPD). Which condition would the instructor include when discussing this condition related to the use of these drugs? Select all that apply.
   A) Asthma
   B) Pulmonary embolism
   C) Pulmonary hypertension
   D) Chronic bronchitis
   E) Pneumonia
   Ans: A, D
   Feedback:
   COPD encompasses asthma, chronic bronchitis, chronic obstructive bronchitis, emphysema, or a combination of the conditions.

2. The nurse instructs a client with asthma to always carry a rescue inhaler or quick-relief medication with him at all times. Which of the following would the client most likely carry? Select all that apply.
   A) Salmeterol (Serevent)
   B) Metaproterenol (Alupent)
   C) Tiotropium (Spiriva)
   D) Albuterol (Proventil)
   E) Formoterol (Foradil)
   Ans: B, D
   Feedback:
   Short-acting beta agonists (SABAs) such as metaproterenol and albuterol are used as rescue treatment for asthma. Salmeterol and formoterol are long-acting beta agonists (LABAs). Tiotropium is a cholinergic blocking drug used to treat bronchospasm associated with COPD.

3. A client is receiving theophylline. The nurse checks the client's serum theophylline level and finds it to be less than therapeutic. The nurse reviews the client's medical record, noting that which of the following might be a reason for this? Select all that apply.
   A) Nicotine
   B) Allopurinol
   C) Verapamil
   D) Phenytoin
   E) Ketoconazole
   Ans: A, D, E
   Feedback:
   Nicotine, phenytoin (a hydantoin), and ketoconazole can decrease theophylline levels. Verapamil (a calcium channel blocker) and allopurinol can increase theophylline levels.

4. The nurse is reviewing the history of a client who is prescribed a long-acting beta-2 agonist. Which of the following would alert the nurse to the need to administer this drug cautiously to the client? Select all that apply.
   A) Hyperlipidemia
   B) Hypertension
   C) Glaucoma
   D) Hyperthyroidism
   E) Diabetes
   Ans: B, C, D, E
   Feedback:
   Long-acting beta-2 agonists should be used cautiously in clients with hypertension, cardiac dysfunction, hyperthyroidism, glaucoma, diabetes, prostatic hypertrophy, and history of seizures.

5. A client with exercise-induced bronchospasm calls the physician's office to obtain a refill for his breathing medication. The client would most likely be prescribed which of the following? Select all that apply.
   A) Beclomethasone (Qvar)
   B) Levalbuterol (Xopenex)
   C) Theophylline (Theo-Dur)
   D) Mometasone (Asmanex)
   E) Bitolterol (Tornalate)
   Ans: B, E
   Feedback:
   Beta-2 agonists, such as levalbuterol and bitolterol, are used to treat exercise-induced bronchospasm. Beclomethasone and mometasone are inhaled corticosteroids. Theophylline is a xanthine derivative.

6. A client is prescribed an inhaled corticosteroid. The nurse would instruct the client about which of the following as a possible adverse reaction? Select all that apply.
   A) Fungal infection
   B) Pharyngeal irritation
   C) Blurred vision
   D) Bradycardia
   E) Insomnia
   Ans: A, B
   Feedback:
   Adverse reactions of inhaled corticosteroids include oral, laryngeal, and pharyngeal irritation and fungal infection. Blurred vision, bradycardia, and insomnia are not associated with inhaled corticosteroids.

7. After teaching a group of nursing students about xanthine derivatives, the instructor determines that the teaching was successful when the students state which of the following? Select all that apply.
   A) Xanthine derivatives cause flushing.
   B) The action of xanthine derivatives leads to bradycardia.
   C) Xanthine derivatives cause a reduction in airway inflammation.
   D) Xanthine derivatives cause hypoglycemia.
   E) Xanthine derivatives stimulate the CNS to promote bronchodilation.
   Ans: A, E
   Feedback:
   Xanthine derivatives can cause flushing, tachycardia, and hyperglycemia. Xanthine derivatives elicit their effects by stimulating the CNS to promote bronchodilation.

8. A nurse is developing a teaching plan for a client who is to use a dry powder inhaler. Which of the following would the nurse include in the teaching plan? Select all that apply.
   A) Place device in water to clean.
   B) Swallow capsules provided.
   C) Hold inhaler 1 to 2 inches from mouth.
   D) Hold breath for 10 seconds.
   E) Inhale quickly.
   Ans: D, E
   Feedback:
   To properly use a dry powder inhaler, the client should do the following: prepare the medication for inhalation, place the mouthpiece close to the lips, inhale quickly, hold breath for 10 seconds, not swallow capsules provided, and not place the inhaler in water.

9. A client is demonstrating how to use a peak flow meter. The nurse determines that the client is successful when he does which of the following? Select all that apply.
   A) Inhales as forcibly as possible
   B) Stands upright to allow the best inhalation possible
   C) Makes sure indicator is at lowest level on scale
   D) Makes sure lips are sealed tightly around the mouthpiece
   E) Measures peak flow rate at different times each day
   Ans: B, C, D
   Feedback:
   When teaching a client to use a peak flow meter, instruct the client to make sure the indicator is at the lowest level, stand upright, make sure the lips form a tight seal around the mouthpiece, exhale as forcibly and as quickly as possible, and test peak flow at the same time each day.

10. Before administering a prescribed bronchodilator to a client experiencing acute breathing distress, which of the following would be appropriate for the nurse to assess? Select all that apply.
    A) Blood pressure
    B) Blood glucose
    C) Pulse
    D) Lung sounds
    E) Respiratory rate
    Ans: A, C, D, E
    Feedback:
    Prior to initiation of a bronchodilator during acute breathing distress, the nurse needs to assess vital signs, including blood pressure, pulse, and respiratory rate and lung sounds.

11. A client with chronic asthma comes to the clinic for a follow-up visit. A nurse should question the client about which of the following? Select all that apply.
    A) Allergies
    B) Frequency of attacks
    C) Severity of attacks
    D) Antiasthma drugs currently being taken
    E) Antiasthma drugs taken in the past
    Ans: A, B, C, D, E
    Feedback:
    In clients with chronic asthma, the nurse questions the client concerning allergies, frequency and severity of attacks, factors that cause or relieve attacks, and any antiasthma drugs used currently or taken previously.

12. A client who is experiencing an acute asthmatic attack receives prescribed therapy with a bronchodilator. As part of the plan of care, the nurse would continue to assess which of the following every 4 hours? Select all that apply.
    A) Intake
    B) Blood pressure
    C) Output
    D) Lung sounds
    E) Accessory muscle use
    Ans: A, C, D, E
    Feedback:
    The nurse should note the client's respiratory rate, lungs sounds, intake, and output and use of accessory muscles in breathing every 4 hours during an acute asthma attack.

13. During stable chronic phases of asthma, the nurse should advise the client to monitor which of the following? Select all that apply.
    A) Blood pressure
    B) Wheezing
    C) Respiratory rate
    D) Coughing
    E) Peak flow changes
    Ans: B, D, E
    Feedback:
    Clients with chronic stable asthma should monitor for symptoms such as wheezing, coughing, peak flow changes, and things that might be making the asthma worse.

14. Before leaving the hospital after an acute asthma attack, a client is given a prescription for fluticasone/salmeterol (Advair) 250/50 to inhale one puff twice a day. The nurse completing the client's discharge teaching should tell the client which of the following? Select all that apply.
    A) Take the medication as needed.
    B) Continue to carry a rescue inhaler.
    C) Check peak flow daily.
    D) Rinse mouth after each use.
    E) Shake meter well before using.
    Ans: B, C, D
    Feedback:
    The drug is a dry powder inhaler that contains an inhaled corticosteroid and a long-acting beta agonist. The medication should be taken every day as per the directions on the label to prevent future exacerbations. The client should continue to carry a rescue inhaler and check peak flow around the same time each day. Advair does not need to be shaken prior to use as it is a dry powder inhaler. The client should be advised to rinse his mouth out after each use to prevent oral thrush.

15. A group of nursing students are reviewing information about mast cell stabilizers. The students demonstrate understanding of the information when they identify which of the following as an example?
    A) Beclomethasone
    B) Cromolyn
    C) Albuterol
    D) Montelukast
    Ans: B
    Feedback:
    Cromolyn is an example of a mast cell stabilizer. Beclomethasone is an inhaled corticosteroid. Albuterol is a short-acting beta-2 agonist. Montelukast is an example of a leukotriene modifier.

16. A pediatric client is prescribed cromolyn. The nurse understands that this drug can be administered in which manner? Select all that apply.
    A) Via a nebulizer
    B) Orally
    C) Nasal spray
    D) Metered-dose inhaler
    E) Subcutaneous injection
    Ans: A, B, C, D
    Feedback:
    Cromolyn may be administered via a nebulizer, as an aerosol metered spray, as a nasal spray, or orally. It is not given subcutaneously.

17. A client is prescribed zileuton (Zyflo). The nurse instructs the client to contact the primary health care provider if which of the following occur? Select all that apply.
    A) Jaundice
    B) Pruritus
    C) Fatigue
    D) Dizziness
    E) Restlessness
    Ans: A, B, C
    Feedback:
    Zileuton may cause liver damage, which may present with the following symptoms: upper right quadrant pain, nausea, fatigue, lethargy, pruritus, and jaundice.

18. The nurse teaches a client receiving an inhaled corticosteroid about the possibility of developing oral thrush. Which of the following would the nurse include in the teaching plan as a way to reduce this risk? Select all that apply.
    A) Need to avoid eating after administration
    B) Performing strict oral hygiene
    C) Cleaning the inhaler per package instructions
    D) Using proper technique when administering dose
    E) Administering a dose only every other day
    Ans: B, C, D
    Feedback:
    To decrease the likelihood of developing oral thrush, a client should use strict oral hygiene, cleanse the inhaler as directed in the package instructions, and use proper technique when administering a dose. There is no need to avoid eating after administration, and using the drug only every other day would not be effective.

19. A nurse is developing a teaching plan about measures to reduce the risk of infection with *Candida albicans* from antiasthma therapy. The nurse includes this information because the client is prescribed which of the following? Select all that apply.
    A) Albuterol (Ventolin)
    B) Cromolyn (Gastrocrom)
    C) Fluticasone (Flovent)
    D) Tiotropium (Spiriva)
    E) Budesonide/formoterol (Symbicort)
    Ans: B, C, E
    Feedback:
    Mast cell aerosols such as cromolyn and inhaled corticosteroids (ICSs) such as fluticasone and budesonide/formoterol have been associated with the development of oral thrush. Therefore, the client needs instructions on how to reduce his risk. Albuterol, a short-acting beta-2 agonist, and tiotropium, a cholinergic blocker, are not associated with the development of thrush.

20. A nurse is caring for a 30-year-old client who is receiving albuterol for asthma. The client complains of feeling dizzy, especially when he stands up after sitting. The nurse suspects that a possible interaction with another drug could be causing the client's problem. Which of the following drugs should the nurse consider as a possible cause?
    A) Warfarin
    B) Uterine stimulants
    C) Methylxanthines
    D) Methyldopa
    Ans: D
    Feedback:
    The nurse should consider methyldopa as a cause for the client's complaint of dizziness on standing, suggesting hypotension. Methyldopa and albuterol interact, leading to hypotension. Albuterol does not interact with warfarin. Interaction between albuterol and uterine stimulants leads to severe hypotension, and not severe headache. There is an increased risk of cardiotoxicity when methylxanthines are given along with albuterol.

21. A client with asthma has been prescribed an antiasthmatic drug. Before administering the drug, the nurse assesses the respiratory rate of the client. The nurse notifies the primary health care provider based on which finding?
    A) 10 breaths/min
    B) 14 breaths/min
    C) 18 breaths/min
    D) 22 breaths/min
    Ans: A
    Feedback:
    The nurse should consider 10 breaths/min an abnormal respiratory rate and notify the primary health care provider. Respiratory rates below 12 breaths/min or above 24 breaths/min are considered abnormal. A respiratory rate between 12 breaths/min and 24 breaths/min is considered normal.

22. A client is prescribed albuterol for bronchospasm in chronic bronchial asthma. Which of the following nursing diagnoses would the nurse expect to see on the care plan as a result of the adverse reaction of albuterol?
    A) Anxiety
    B) Risk of Impaired Oral Mucous Membranes
    C) Ineffective Tissue Perfusion
    D) Risk of Injury
    Ans: A
    Feedback:
    The nurse would most likely identify a nursing diagnosis of Anxiety related to the adverse reaction of albuterol. A nursing diagnosis of Risk of Impaired Mucous Membranes may be seen with the use of corticosteroids, which increase the risk of oral candidiasis. There is no increased risk of injury or ineffective tissue perfusion with the use of albuterol therapy.

23. A client has been admitted to a health care facility with acute bronchospasm. The primary health care provider prescribes the drug epinephrine. The nurse anticipates administering this drug by which route?
    A) Intravenous
    B) Intramuscular
    C) Subcutaneous
    D) Intradermal
    Ans: C
    Feedback:
    The nurse should use the subcutaneous route to administer epinephrine for acute bronchospasm. Doses of epinephrine are measured in tenths of a milliliter. A tuberculin syringe is used for measuring and administering these drugs by the parenteral route. The other routes are not appropriate for this situation.

24. A 10-year-old child with asthma is prescribed high doses of an inhaled corticosteroid. The nurse would discuss which of the following with the child and parents as being affected?
    A) Blood pressure
    B) Skin turgor
    C) Urine output
    D) Rate of growth
    Ans: D
    Feedback:
    The nurse should monitor the rate of growth of the child. Children are at risk for a reduction in growth when oral corticosteroids or higher doses of the inhalant form are used. Blood pressure, skin turgor, and urine output are not altered with corticosteroid therapy.

25. A client receives a loading dose of theophylline to treat acute respiratory symptoms. When assessing the client, the nurse would immediately notify the primary health care provider for which of the following?
    A) Constipation
    B) Abdominal cramps
    C) Bradycardia
    D) Mental depression
    Ans: B
    Feedback:
    It is important for the nurse to closely monitor the client for signs of theophylline toxicity. The nurse should notify the primary health care provider immediately if any of the following signs of theophylline toxicity develop: anorexia, nausea, vomiting, diarrhea, confusion, abdominal cramping, headache, restlessness, insomnia, tachycardia, arrhythmias, or seizures. Constipation, bradycardia, and mental depression are not signs of theophylline toxicity.

26. A client who is receiving aminophylline complains of heartburn. Which of the following instructions should the nurse provide the client to help alleviate the condition?
    A) Eat small, frequent meals.
    B) Raise the head of the bed.
    C) Limit fluid intake with meals.
    D) Use strict oral hygiene.
    Ans: B
    Feedback:
    When a client receiving aminophylline complains of heartburn, the nurse should instruct the client to remain upright with the head end of the bed raised. Eating small, frequent meals and limiting fluid intake with meals help alleviate the symptoms of nausea, and not of heartburn. Using strict oral hygiene helps prevent infection with *Candida albicans* seen with corticosteroid therapy.

27. A nurse is teaching a client who is prescribed albuterol about the adverse reactions associated with the drug. Which of the following symptoms, if experienced, should the nurse instruct the client to report to the health care provider?
    A) Fall in blood pressure
    B) Increased nighttime urination
    C) Hearing impairment or deficit
    D) Headache and flushing
    Ans: D
    Feedback:
    The nurse should instruct the client to contact the health care provider if palpitations, tachycardia, chest pain, muscle tremors, dizziness, headache, flushing, or difficulty with urination or breathing occurs. Fall in blood pressure, increased nighttime urination, and hearing impairment are not adverse effects associated with a sympathomimetic bronchodilator.

28. A nurse is caring for a client who is receiving cromolyn orally. Which of the following instructions would the nurse include in the client's teaching plan?
    A) Do not take the drug at bedtime.
    B) Swallow the drug without chewing.
    C) Take the drug with food or milk.
    D) Take the drug at least 30 minutes before meals.
    Ans: D
    Feedback:
    When administered orally, cromolyn is given 30 minutes before meals and at bedtime. The oral form of the drug comes in an ampule. The ampule is opened and the contents are poured into a glass of water. The nurse stirs the mixture thoroughly. The client must drink all of the mixture. The drug may not be mixed with any other substance (e.g., fruit juice, milk, or foods).

29. A client is prescribed inhaled corticosteroid therapy along with bronchodilator therapy. Which of the following points should the nurse include in the teaching plan?
    A) "Stop corticosteroid therapy immediately if you notice any adverse effects."
    B) "Before each dose of corticosteroid, rinse the mouth thoroughly with water."
    C) "The corticosteroid drug provides rapid relief during an asthma attack."
    D) "Take the corticosteroid several minutes after the bronchodilator dose."
    Ans: D
    Feedback:
    The nurse should instruct the client to take the corticosteroid several minutes after the bronchodilator dose. This helps in enhancing the application of the steroid into the bronchial tract. Corticosteroid therapy should never be stopped abruptly. The mouth should be rinsed thoroughly with water after each dose of corticosteroid to prevent the occurrence of fungal infections. The steroid drug does not provide rapid relief during an asthma attack, as it does not dilate the bronchus.

30. A group of nursing students are reviewing information about leukotriene modifiers. The students demonstrate understanding of this class of drugs when they identify that these drugs are given by which route?
    A) Nebulization
    B) Metered-dose inhaler
    C) Nasal spray
    D) Orally
    Ans: D
    Feedback:
    Leukotriene modifiers are only administered orally.

31. The nurse is reviewing the medication record of a client with asthma and notes that the health care provider has prescribed a monoclonal antibody as part of the treatment plan. The nurse would anticipate administering which drug?
    A) Zafirlukast
    B) Zileuton
    C) Omalizumab
    D) Salmeterol
    Ans: C
    Feedback:
    Omalizumab (Xolair) is a monoclonal antibody used in the treatment of asthma. Leukotriene receptor antagonists include montelukast (Singulair) and zafirlukast (Accolate). Zileuton (Zyflo) is classified as a leukotriene formation inhibitor. Salmeterol (Serevent Diskus) is a long-term beta-2 agonist.

32. A nurse is providing care to a client receiving theophylline. The client has received two loading doses and the nurse is evaluating the client's theophylline levels. Which finding would the nurse interpret as a therapeutic drug level?
    A) 5 mcg/L
    B) 8 mcg/L
    C) 13 mcg/L
    D) 20 mcg/L
    Ans: C
    Feedback:
    Therapeutic theophylline levels range from 10 to 20 mcg/L. The possibility of toxicity increases with levels over 15 mcg/L, with toxicity indicated with levels over 20 mcg/L.

1. When describing the different classes of diuretics, the nursing instructor would include which of the following as sulfonamides, with nonbacteriostatic action, that inhibit the enzyme carbonic anhydrase? Select all that apply.
   A) Furosemide
   B) Acetazolamide
   C) Hydrochlorothiazide
   D) Methazolamide
   E) Torsemide
   Ans: B, D
   Feedback:
   Acetazolamide and methazolamide are carbonic anhydrase inhibitors. Furosemide and torsemide are loop diuretics. Hydrochlorothiazide is a thiazide diuretic.

2. A nurse is administering acetazolamide to a client. The nurse understands that this drug leads to excretion of which of the following? Select all that apply.
   A) Sodium
   B) Magnesium
   C) Potassium
   D) Bicarbonate
   E) Chloride
   Ans: A, C, D
   Feedback:
   Carbonic anhydrase inhibitors, like acetazolamide, result in the excretion of sodium, potassium, bicarbonate, and water.

3. A nurse is administering a diuretic that inhibits reabsorption of sodium and chloride ions in the distal and proximal tubules and in the loop of Henle. Which of the following might the nurse be administering? Select all that apply.
   A) Chlorothiazide
   B) Furosemide
   C) Bumetanide
   D) Mannitol
   E) Spironolactone
   Ans: B, C
   Feedback:
   Loop diuretics, like furosemide (Lasix) and bumetanide (Bumex), cause dieresis by inhibiting reabsorption of sodium and chloride ions in the distal and proximal tubules and in the loop of Henle. Thiazide and related diuretics such as chlorothiazide inhibit the reabsorption of sodium and chloride ions in the ascending portion of the loop of Henle and the early distal tubule of the nephron. Osmotic diuretics such as mannitol increase the density of the filtrate in the glomerulus. Potassium-sparing diuretics such as spironolactone work by blocking the reabsorption of sodium in the kidney tubules, thereby increasing sodium and water in the urine.

4. After teaching a group of nursing students about diuretics, the instructor determines that the teaching was successful when the students identify which of the following as causing diuresis by increasing the density of filtrate in the glomerulus? Select all that apply.
   A) Amiloride
   B) Torsemide
   C) Ethacrynic acid
   D) Mannitol
   E) Urea
   Ans: D, E
   Feedback:
   Osmotic diuretics, like mannitol and urea, cause diuresis by increasing the density of the filtrate in the glomerulus. Amiloride is a potassium-sparing diuretic that acts to block the reabsorption of sodium in the kidney tubules, thereby increasing sodium and water in the urine. Torsemide and ethacrynic acid are loop diuretics that inhibit reabsorption of sodium and chloride in the distal and proximal tubules of the kidney and in the loop of Henle.

5. A nurse is preparing to administer spironolactone to a client. When reviewing the client's medical record, the nurse would be alert for the development of hyperkalemia if the client was also receiving which of the following?
   A) Lisinopril (Prinivil)
   B) Metoprolol (Lopressor)
   C) Terazosin (Hytrin)
   D) Diltiazem (Cardizem)
   Ans: A
   Feedback:
   Spironolactone when given with ACE inhibitors (lisinopril) can lead to hyperkalemia. Hyperkalemia is not associated with the combination of spironolactone and metoprolol, terazosin, or diltiazem.

6. A nurse is reviewing the medical record of several clients who are prescribed amiloride. The nurse would identify a client with which condition as being at highest risk for developing hyperkalemia? Select all that apply.
   A) Diabetes
   B) Hypertension
   C) Renal disease
   D) Epilepsy
   E) Asthma
   Ans: A, C
   Feedback:
   Hyperkalemia is most likely to occur in clients with an inadequate fluid intake and urine output, those with diabetes or renal disease, the elderly, and those who are severely ill.

7. The nurse understands that the use of diuretics is contraindicated in clients with which of the following? Select all that apply.
   A) Hyponatremia
   B) Hypokalemia
   C) Hypertension
   D) Anuria
   E) Asthma
   Ans: A, B, D
   Feedback:
   Diuretics are contraindicated in clients with known hypersensitivity to the drugs, electrolyte imbalance (hyponatremia and hypokalemia), severe kidney or liver dysfunction, and anuria.

8. A nurse is providing care to a client who has an allergy to sulfamethoxazole/trimethoprim. The nurse understands that the client may have cross-sensitivity reactions with which of the following diuretics? Select all that apply.
   A) Chlorothiazide
   B) Furosemide
   C) Chlorthalidone
   D) Metolazone
   E) Spironolactone
   Ans: A, C, D
   Feedback:
   A cross-sensitivity reaction may occur with the thiazides (chlorothiazide, chlorthalidone, and metolazone) and sulfonamides (sulfamethoxazole).

9. A client is prescribed amiloride. The nurse would administer this drug cautiously if the client had a history of which of the following? Select all that apply.
   A) Gout
   B) Asthma
   C) Diabetes
   D) HIV
   E) Hepatic disease
   Ans: A, C, E
   Feedback:
   Potassium-sparing diuretics, like amiloride, should be used cautiously in clients with gout, diabetes, and hepatic disease.

10. A nurse may notice a decrease in diuretic effect when furosemide (Lasix) is given with which of the following drugs? Select all that apply.
   A) Phenytoin
   B) Naproxen
   C) Digoxin
   D) Lithium
   E) Ibuprofen
   Ans: A, B, E
   Feedback:
   A nurse may notice a decrease in diuretic effect when furosemide (Lasix) is given with the following drugs: hydantoins (phenytoin) and NSAIDs (naproxen and ibuprofen). There is an increased risk of lithium toxicity if furosemide is given with lithium. An increased risk of cardiac arrhythmias occurs when digoxin is given with furosemide.

11. The nurse is to administer bumetanide. The nurse reviews the client's medication history for possible interacting drugs. Which of the following, if found, would the nurse identify as having an increased risk for toxicity? Select all that apply.
   A) Lithium
   B) Phenytoin
   C) Gentamicin
   D) Warfarin
   E) Digoxin
   Ans: A, C, D, E
   Feedback:
   Loop diuretics, like bumetanide, can increase toxicity of the following medications: lithium (Eskalith), gentamicin, warfarin (Coumadin), and digoxin (Lanoxin). A decrease in diuretic effect occurs when bumetanide is given with phenytoin.

12. A nurse caring for a client with diabetes controlled with metformin recently began taking a drug for edema. The nurse notices that the client's blood glucose levels are increasing. Which of the following diuretics are likely to cause hyperglycemia? Select all that apply.
    A) Hydrochlorothiazide
    B) Furosemide
    C) Chlorthalidone
    D) Acetazolamide
    E) Metolazone
    Ans: A, C, E
    Feedback:
    Thiazide diuretics, like hydrochlorothiazide, chlorthalidone, and metolazone, can result in hyperglycemia in clients receiving antidiabetic drugs, like metformin.

13. Prior to the administration of furosemide (Lasix), a nurse would assess which of the following? Select all that apply.
    A) Weight
    B) Blood glucose
    C) Pulse
    D) Temperature
    E) Respiratory rate
    Ans: A, C, D, E
    Feedback:
    Before administering furosemide (Lasix), the nurse takes the vital signs (blood pressure, pulse, temperature, respiratory rate, and weight) There is no need to assess the client's blood glucose.

14. After administering metolazone to a client, the nurse monitors for signs of hypokalemia, including which of the following? Select all that apply.
    A) Diarrhea
    B) Anorexia
    C) Depression
    D) Hypoglycemia
    E) Drowsiness
    Ans: B, C, E
    Feedback:
    The following are signs of hypokalemia: anorexia, nausea, vomiting, depression, confusion, cardiac arrhythmias, impaired thought process, and drowsiness.

15. A nurse suspects that a client who is receiving acetazolamide is developing hyponatremia based on assessment of which of the following? Select all that apply.
    A) Bradycardia
    B) Anorexia
    C) Hypotension
    D) Hypoglycemia
    E) Decreased skin turgor
    Ans: C, E
    Feedback:
    The following are signs of hyponatremia: cold, clammy skin; decreased skin turgor; confusion; hypotension; irritability; and tachycardia.

16. A client is prescribed metolazone. As part of the client's teaching plan, the nurse instructs the client to increase his consumption of potassium-rich foods. The nurse determines that the teaching was successful when the client identifies which of the following as a good choice? Select all that apply.
    A) Bananas
    B) Shrimp
    C) Asparagus
    D) Salmon
    E) Peanuts
    Ans: A, C, D, E
    Feedback:
    The top 10 foods with the highest amount of potassium per serving include white beans, dark leafy greens, baked potatoes with skin on, dried apricots, acorn squash, plain low-fat yogurt, salmon, avocado, mushrooms, and bananas. Fruits high in potassium include apricots, prunes, dried currants/raisins, dates, figs, dried coconut, avocado, bananas, oranges, nectarines, and peaches. Vegetables high in potassium include sun-dried tomatoes, spinach, Swiss chard, mushrooms, sweet potato, kale, brussels sprouts, zucchini, green beans, and asparagus. Other sources include chocolate, molasses, nuts, and nut butters.

17. A nurse is assessing a client after administering a diuretic. Which of the following would lead the nurse to suspect that the client is experiencing a fluid and electrolyte imbalance? Select all that apply.
    A) Dry mouth
    B) Diaphoresis
    C) Muscle cramps
    D) Hypertension
    E) Tachycardia
    Ans: A, C, E
    Feedback:
    Warning signs of a fluid and electrolyte imbalance include dry mouth, thirst, lethargy, weakness, drowsiness, restlessness, muscle pain or cramps, confusion, GI disturbances, hypotension, oliguria, tachycardia, and seizures.

18. A nurse is caring for a client with increased intracranial pressure caused by cerebral edema. The physician has prescribed mannitol. After administering the drug, the nurse should do which of the following?
    A) Monitor blood pressure every 4 hours.
    B) Check response of pupils to light.
    C) Monitor client for joint pain.
    D) Monitor serum uric acid concentrations.
    Ans: B
    Feedback:
    When caring for a client who has been given mannitol for intracranial pressure, the nurse should perform neurologic assessments such as response of the pupils to light, level of consciousness, or response to a painful stimulus at the time intervals ordered by the primary health care provider. The nurse monitors the client for joint pain and other discomforts when the client is administered thiazide diuretics for renal impairment. When caring for clients taking thiazide diuretics, the nurse also monitors the serum uric acid concentrations because these drugs may precipitate an acute attack of gout. The nurse needs to monitor the client's blood pressure every 30 to 60 minutes when caring for a client receiving the osmotic diuretic mannitol or urea for the treatment of increased intracranial pressure caused by cerebral edema.

19. A nurse is caring for a client with edema. The physician has prescribed diuretic therapy for the client. Which of the following would be most appropriate for the nurse to do?
    A) Ask the client to decrease fluid intake.
    B) Gradually increase the drug dosage.
    C) Administer the drug early in the day.
    D) Encourage the client to exercise.
    Ans: C
    Feedback:
    The nurse should administer the drug early in the day to prevent any nighttime sleep disturbance caused by increased urination when caring for a client receiving diuretic therapy for acute renal failure. The nurse need not ask the client to decrease fluid intake, gradually increase the drug dosage, or encourage the client to exercise as these are not appropriate interventions and will not help in reducing the discomfort caused by increased urination.

20. A physician has prescribed furosemide to a client with pulmonary edema. The client informs the nurse that he is also taking phenytoin as treatment for seizures. The nurse would assess the client closely for which of the following?
    A) Increased risk of bleeding
    B) Decreased diuretic effectiveness
    C) Increased blood glucose levels
    D) Increased seizure episodes
    Ans: B
    Feedback:
    The nurse should monitor for decreased diuretic effectiveness in the client as the effect of the interaction between furosemide and hydantoins. When the client is administered loop diuretics with anticoagulants or thrombolytics, there is an increased risk of bleeding. Increased blood glucose may occur when thiazide diuretics are given with antidiabetic drugs. Decreased effectiveness of hydantoins, such as manifested by increased seizure activity, is not known to occur as a result of the effect of the interaction between furosemide and hydantoins, and so the nurse need not monitor for the same in the client.

21. A physician prescribes diuretic therapy to a client with nephrotic syndrome. The nurse suspects that the client is hyponatremic based on assessment of which of the following?
    A) Paresthesias
    B) Tremors
    C) Visual hallucination
    D) Tachycardia
    Ans: D
    Feedback:
    The nurse should monitor for tachycardia, cold and clammy skin, confusion, and hypotension in the client experiencing hyponatremia. Hyponatremia is excessive loss of sodium and is a common fluid and electrolyte imbalance associated with diuretic therapy. Tremors, visual hallucinations, and paresthesias are the symptoms of hypomagnesemia and not hyponatremia.

22. A physician has prescribed bumetanide for a client with high blood pressure who also has renal insufficiency. Which of the following instructions should the nurse include in the teaching plan for this client?
    A) Avoid salt substitutes containing potassium.
    B) Avoid over-the-counter drugs for cold symptoms.
    C) Always take the drug before meals.
    D) Omit the drug dose when feeling dizzy.
    Ans: B
    Feedback:
    The nurse should instruct the hypertensive client to avoid medications that increase blood pressure, such as OTC drugs for appetite suppression and cold symptoms. The nurse should instruct clients taking potassium-sparing diuretics, not loop diuretics such as bumetanide, to refrain from using salt substitutes containing potassium. The nurse need not instruct the client to take the drug before meals since doing so will not decrease the client's blood pressure. The nurse should instruct the client to observe caution while driving or performing hazardous tasks when dizziness or weakness occurs. In such cases, the nurse instructs the client to rise slowly from a sitting or lying position and avoid standing in one place for an extended time.

23. A nurse is caring for a client with increased intraocular pressure who is receiving urea. After administering the drug, the nurse would assess the client for which of the following?
    A) Syncope
    B) Cramping
    C) Photosensitivity
    D) Blurred vision
    Ans: A
    Feedback:
    The nurse should observe the client for syncope after administering urea. Other adverse reactions associated with the administration of urea include headache, nausea, vomiting, and fluid and electrolyte imbalance. Cramping is an adverse reaction of the drug spironolactone. The nurse should observe the client for photosensitivity after administering triamterene. Blurred vision is an adverse reaction of mannitol.

24. A nurse is preparing to administer spironolactone to a client. The nurse would contact the primary health care provider about the need to change the order if the client has a history of which of the following?
    A) Hyperkalemia
    B) Liver disease
    C) Gout
    D) Diabetes
    Ans: A
    Feedback:
    The nurse should know that potassium-sparing diuretics are contraindicated in clients with hyperkalemia and are not recommended for children. Potassium-sparing diuretics should be used cautiously in clients with liver disease, diabetes, or gout, but these conditions do not contraindicate the use of potassium diuretics.

25. A nurse is caring for a client with edema due to congestive heart failure (CHF). The primary health care provider has prescribed indapamide. The client is also receiving digoxin. Which intervention would be most appropriate for the nurse to implement?
    A) Encourage oral fluids at frequent intervals during waking hours.
    B) Encourage the client to eat or drink between meals and in the evening.
    C) Frequently monitor the client's pulse rate and rhythm.
    D) Closely monitor the client for signs of hyperkalemia.
    Ans: C
    Feedback:
    Clients receiving a diuretic, particularly a loop or thiazide diuretic such as indapamide, and a digitalis glycoside concurrently require frequent monitoring of the pulse rate and rhythm because of the possibility of cardiac arrhythmias. Any significant changes in the pulse rate and rhythm are immediately reported to the primary health care provider. The nurse should encourage oral fluids at frequent intervals during waking hours when caring for older clients to prevent a fluid volume deficit. In such cases the nurse should also encourage elderly clients to eat or drink between meals and in the evening. The nurse must closely observe clients receiving a potassium-sparing diuretic for signs of hyperkalemia, a serious and potentially fatal electrolyte imbalance.

26. A nurse administers a thiazide diuretic to a client with renal compromise as prescribed by the primary health care provider. Which action by the nurse would be most appropriate if the client's blood urea nitrogen level increases?
    A) Give prescribed magnesium supplements.
    B) Withhold the next dose of the drug.
    C) Administer the drug in a diluted form.
    D) Increase the fluid intake for the client.
    Ans: B
    Feedback:
    The nurse should withhold the drug or discontinue its use if the blood urea nitrogen (BUN) rises in the client with renal compromise who is receiving a thiazide diuretic. Magnesium supplements or add-ons may be provided to clients taking loop diuretics as they are prone to magnesium deficiency. The nurse should encourage fluid intake to prevent a fluid volume deficit in elderly clients who are particularly prone to fluid volume deficit and electrolyte imbalances when taking a diuretic. The nurse need not administer the drug in a diluted form since doing so will not have an effect on the blood urea nitrogen level.

27. A primary health care provider has prescribed a loop diuretic for a client with hypertension. The client also has diabetes mellitus. The nurse would assess the client for which of the following after administering the drug?
    A) Sudden pain in the joints
    B) Increased blood glucose levels
    C) Occurrence of gout attacks
    D) Sudden increase in weight
    Ans: B
    Feedback:
    The nurse should monitor for increased blood glucose levels in the diabetic client receiving a loop diuretic. The blood glucose levels may be elevated or urine may test positive for glucose. Thiazide diuretic agents may cause gout attacks and sudden joint pain. The nurse need not monitor for a sudden increase in weight as the administration of loop diuretics to a diabetic client will not cause this.

28. A client is prescribed a diuretic that is to be taken twice a day. When instructing the client about the schedule for administration, the nurse would suggest that the client take the drug at which times?
    A) In the early morning and at bedtime
    B) After lunch and dinner
    C) At breakfast and midafternoon
    D) Midmorning and before dinner
    Ans: C
    Feedback:
    Twice-a-day dosing should be administered early in the morning (e.g., 7 a.m.) and early afternoon (e.g., 2 p.m.) to prevent the drug from interfering with the client's sleep.

29. A client who is receiving diuretic therapy comes to the clinic for a follow-up visit. The client states that his mouth is often dry and that he is “urinating like there is no tomorrow.” Assessment reveals dry mucous membranes and decreased skin turgor. Which nursing diagnosis would the nurse most likely identify?
    A) Risk for Injury
    B) Risk for Deficient Fluid Volume
    C) Impaired Urinary Elimination
    D) Deficient Knowledge
    Ans: B
    Feedback:
    Based on the client's report and assessment findings, a nursing diagnosis of Risk for Deficient Fluid Volume would be most appropriate. Risk for Injury would be appropriate if the client was complaining of dizziness on changing positions or changes in heart rate and rhythm. Although the client is experiencing frequency, that is the intended effect of the drug. Although possible, there is no evidence provided to support a nursing diagnosis of Deficient Knowledge.

30. A nurse is reviewing the laboratory test results of a client who is receiving diuretic therapy. The nurse determines that the client is at risk for electrolyte imbalance based on which results? Select all that apply.
    A) Potassium 4.5 mEq/L
    B) Sodium 139 mEq/L
    C) Magnesium 2.0 mEq/L
    D) Sodium 124 mEq/L
    E) Potassium 2.9 mEq/L
    Ans: D, E
    Feedback:
    Sodium levels below 132 mEq/L, such as 124 mEq/L, or above 145 mEq/L would indicate an imbalance. Potassium imbalances would occur with levels below 3.0 mEq/L, such as 2.9 mEq/L, or above 5 mEq/L. A magnesium level of 2.0 mEq/L is within the normal range of 1.5 to 2.5 mEq/L.

31. A client is receiving mannitol as treatment to promote diuresis in acute renal failure. The nurse would expect to administer the drug by which route?
    A) Intramuscularly
    B) Subcutaneously
    C) Intravenously
    D) Orally
    Ans: C
    Feedback:
    Mannitol is administered intravenously. It is not given intramuscularly, subcutaneously, or orally.

1. A client is receiving atorvastatin. The nurse would be alert to client complaints of which of the following? Select all that apply.
   A) Headache
   B) Sedation
   C) Insomnia
   D) Diarrhea
   E) Constipation
   Ans: A, C, E
   Feedback:
   Atorvastatin is an HMG-CoA reductase inhibitor (statin). Adverse reactions of statins include headache, dizziness, insomnia, flatulence, abdominal pain, cramping, constipation, and nausea.

2. A client is receiving pravastatin. The nurse understands that which of the following should be avoided with this client to prevent the risk of myopathy? Select all that apply.
   A) Quinapril (Accupril)
   B) Niacin (Niaspan)
   C) Clarithromycin (Biaxin)
   D) Albuterol (Proventil
   E) Verapamil (Calan)
   Ans: B, C, E
   Feedback:
   Niacin, clarithromycin, and verapamil when coadministered to a client taking a statin, like pravastatin, can result in increased myopathy.

3. A nurse is explaining how statin drugs help lower cholesterol, LDL, and triglycerides. Which of the following would the nurse include in the explanation? Select all that apply.
   A) Decreased absorption of cholesterol from the GI tract
   B) Promotion of cholesterol breakdown
   C) Formation of a substance that is excreted in the feces
   D) Decreased breakdown of fat to cholesterol
   E) Inhibition of cholesterol production
   Ans: A, B
   Feedback:
   Statins inhibit the manufacture of cholesterol or promote the breakdown of cholesterol. The bile acid resins bind to bile acids to form an insoluble substance that cannot be absorbed by the intestine, so it is excreted in the feces.

4. The nurse discusses the benefit of adding a statin drug to a client's medication regimen based on the understanding that this group of drugs can reduce the risk of death from which of the following? Select all that apply.
   A) Stroke
   B) Transient ischemic attack
   C) Kidney disease
   D) Hepatic disease
   E) Cancer
   Ans: A, B
   Feedback:
   The use of statins in clients with hyperlipidemia with or without clinically evident coronary heart disease can reduce the risk of death from stroke and transient ischemic attacks.

5. A nurse is reviewing the medical record of a client who is prescribed statin therapy. The nurse understands that this class of drugs is contraindicated in clients with which of the following conditions? Select all that apply.
   A) Kidney disease
   B) Pregnancy
   C) Serious hepatic disease
   D) Carcinoma of the breast
   E) Lactation
   Ans: B, C, E
   Feedback:
   Statin drugs are contraindicated in individuals with known hypersensitivity to the drugs or serious liver disease and during pregnancy (category X) and lactation.

6. The nurse is reviewing a client's medical record for predisposing factors for myopathy requiring that the client be started on low doses of statins and titrated as tolerated or until cholesterol goals are met. Which of the following would the nurse identify as one of these factors? Select all that apply.
   A) Asian descent
   B) Severe renal insufficiency
   C) Use of antihistamines
   D) Use of cyclosporine
   E) Cigarette smoking
   Ans: A, B, D
   Feedback:
   Predisposing factors for myopathy with statin therapy include Asian descent, severe renal insufficiency, and use of cyclosporine.

7. After teaching a group of nursing students about bile acids, the instructor determines that the teaching was successful when the students identify which of the following as true about bile? Select all that apply.
   A) Bile is manufactured by the gallbladder.
   B) Bile is stored in the liver.
   C) Bile emulsifies fat and lipids.
   D) Bile is secreted by the liver.
   E) Bile is classified as a hormone.
   Ans: C, D
   Feedback:
   Bile is manufactured and secreted by the liver and stored in the gallbladder; it emulsifies fat and lipids, and these products pass through the intestine.

8. A client is starting cholestyramine therapy for the treatment of hyperlipidemia. When teaching the client about possible adverse reactions, which of the following would the nurse include? Select all that apply.
   A) Diarrhea
   B) Malabsorption of vitamin K
   C) Aggravation of hemorrhoids
   D) Flatulence
   E) Myopathy
   Ans: B, C, D
   Feedback:
   Adverse reactions reported with the use of bile acid resins, such as cholestyramine, include constipation (that can become severe), aggravation of hemorrhoids, abdominal cramps, flatulence, nausea, increased bleeding related to vitamin K malabsorption, and vitamin A and D deficiencies.

9. Which of the following should be included by the nurse during client teaching to improve client outcomes for a client receiving antihyperlipidemic drugs? Select all that apply.
   A) Measures to minimize gastrointestinal upset
   B) Consultation with a dietitian for assistance with diet teaching
   C) Emphasis on the fact that drug therapy alone will significantly lower blood cholesterol levels
   D) Focus on the importance of taking drug exactly as prescribed
   E) Instruction in possible adverse reactions and signs and symptoms to report to primary health care provider

   Ans: A, B, D, E

   Feedback:

   Client teaching includes measures to minimize gastrointestinal upset, consultation with a dietician to assist with diet planning and teaching, focus on the need to take the drug exactly as prescribed, and information about possible adverse reactions including those that need to be reported to the primary health care provider. The nurse should emphasize that drug therapy alone will **NOT** significantly lower blood cholesterol levels.

10. A client is currently taking propranolol (Inderal) for hypertension, glipizide (Glucotrol) for diabetes, and acetaminophen (Tylenol) for osteoarthritis. If cholestyramine was given to this client, which of the following would likely result? Select all that apply.
   A) The client would experience hypoglycemia from increased absorption of glipizide.
   B) The client would experience decreased analgesia from decreased absorption of acetaminophen.
   C) The client would experience an increase in blood pressure due to decreased absorption of propranolol.
   D) The client would experience hypotension from increased absorption of propranolol.
   E) The client would experience hyperglycemia from decreased absorption of glipizide.

   Ans: C, E

   Feedback:

   The use of bile acid resins, like cholestyramine, decreases the absorption of some medications including glipizide and propranolol. This decreased absorption could result in hyperglycemia and an increase in blood pressure for this particular client.

11. A nurse is preparing to administer gemfibrozil to a client. The nurse understands that this drug lowers cholesterol via which of the following mechanisms? Select all that apply.
    A) Increases excretion of cholesterol
    B) Reduces very-low-density lipoproteins (VLDLs)
    C) Increases breakdown of VLDLs
    D) Reduces production of triglycerides
    E) Inhibits cholesterol formation
    Ans: A, D
    Feedback:
    Gemfibrozil increases the excretions of cholesterol and reduces the production of triglycerides. The drug does not reduce VLDLs, increase VLDL breakdown, or inhibit cholesterol formation.

12. A nurse is obtaining a lipoprotein profile for a client diagnosed with hyperlipidemia. Which of the following measurements would be obtained? Select all that apply.
    A) Total cholesterol
    B) Triglycerides
    C) LDL
    D) ALT
    E) AST
    Ans: A, B, C
    Feedback:
    A lipoprotein profile is a laboratory test that reports total cholesterol, LDL, HDL, and triglycerides. AST and ALT are values that would be reported from liver function tests.

13. Prior to administering an antihyperlipidemic drug to a client, which of the following would the nurse assess? Select all that apply.
    A) Dietary history
    B) Vital signs
    C) Blood glucose
    D) Weight
    E) Input and output
    Ans: A, B, D
    Feedback:
    Before administering an antihyperlipidemic drug, the nurse would assess a lipid profile, liver function tests, dietary history, vital signs, and weight and inspect for xanthomas.

14. After administering an antihyperlipidemic drug, the nurse continues to assess which of the following? Select all that apply.
    A) Blood glucose
    B) Vital signs
    C) Assessment of bowel function
    D) Input and output
    E) Stool sample
    Ans: B, C
    Feedback:
    Clients on antihyperlipidemic medications should have vital signs checked and bowel function assessed because an adverse reaction to these drugs is constipation. Constipation may become serious if not treated early in the medication regimen.

15. A client is experiencing constipation due to an antihyperlipidemic drug. The client asks the nurse how to manage this problem. Which suggestion would be most appropriate? Select all that apply.
    A) Stop taking the antihyperlipidemic medication.
    B) Increase your fluid intake.
    C) Eat foods rich in dietary fiber.
    D) Be sure to exercise every day.
    E) Use a stool softener.
    Ans: B, C, D, E
    Feedback:
    Constipation resulting from an antihyperlipidemic drug can be treated by increasing fluid intake, consuming food rich in dietary fiber, exercising daily, and using a stool softener or laxative if needed.

16. A client is prescribed nicotinic acid. When teaching the client about this drug, which of the following would the nurse include as a normal skin reaction that may occur? Select all that apply.
    A) Flushing
    B) Sensations of warmth
    C) Tingling
    D) Rash
    E) Pustule formation
    Ans: A, B, C
    Feedback:
    Generalized skin flushing, a sensation of warmth, and severe itching and tingling can occur with the administration of nicotinic acid, especially at higher doses.

17. Which of the following would the nurse include in the client teaching about HMG-CoA reductase inhibitors (statins)? Select all that apply.
    A) Photosensitivity can occur.
    B) The drug should be continued even if the client feels better.
    C) Muscle pain and weakness are normal.
    D) Juices other than grapefruit juice are okay to use.
    E) Statins should be administered in the evening.
    Ans: A, B, D, E
    Feedback:
    When teaching about statins, the nurse should include information about the possibility of photosensitivity, the need to continue the drug even if feeling better, juices other than grapefruit juice as appropriate, and administration in the evening. Muscle pain and weakness should be reported to the client's physician as soon as they occur.

18. A client is receiving warfarin therapy as part of the treatment plan for atrial fibrillation. The client is also to begin therapy with cholestyramine. When assessing the client, the nurse would be alert for which of the following? Select all that apply.
    A) Bruising
    B) Blood in the stool
    C) Subtherapeutic INR
    D) Supratherapeutic INR
    E) Calf pain and warmth
    Ans: C, E
    Feedback:
    Coadministration of warfarin and cholestyramine can result in a decreased anticoagulant effect, leading to subtherapeutic INR and increased chance of clotting (signs and symptoms of DVT or PE).

19. The nurse is preparing a client for discharge. The client is prescribed antihyperlipidemic drug therapy. The nurse would include which of the following in the discharge teaching? Select all that apply.
    A) Reason for taking the prescribed drug
    B) Drug name
    C) Correct dose
    D) Frequency of administration
    E) Dosage form
    Ans: A, B, C, D, E
    Feedback:
    The nurse should review the reasons for the drug and prescribed therapy, including drug name, form and method of preparation, correct dose, and frequency of administration, as part of a client's discharge counseling.

20. A client with hyperlipidemia has been prescribed niacin by a physician. Which of the following adverse reactions should the nurse monitor for in the client?
    A) Tingling
    B) Constipation
    C) Diarrhea
    D) Cholelithiasis
    Ans: A
    Feedback:
    The nurse should monitor for tingling in the client as an adverse reaction to the drug niacin. Constipation, diarrhea, and cholelithiasis are adverse reactions to the drug fenofibrate.

21. A nurse is caring for a client receiving gemfibrozil. Which of the following would the nurse include in the teaching plan for this client?
    A) Take the drug along with meals.
    B) Observe caution while driving.
    C) Take a single dose once daily in the evening.
    D) Be alert for mild to severe facial flushing.
    Ans: B
    Feedback:
    When preparing a teaching plan for the client receiving the fibric acid derivative gemfibrozil, the nurse should instruct the client to observe caution while driving. Rosuvastatin calcium is taken as a single dose once daily in the evening. The nurse instructs a client prescribed nicotinic acid to take it along with meals; it may also cause mild to severe facial flushing.

22. A client with hyperlipidemia is prescribed ezetimibe. Which of the following assessments should the nurse perform during treatment?
    A) Taking a dietary history of the client
    B) Inspecting skin and eyelids for evidence of xanthomas
    C) Obtaining reports of fasting blood sugar levels
    D) Frequently monitoring blood cholesterol
    Ans: D
    Feedback:
    The nurse should frequently monitor blood cholesterol as part of the ongoing assessment for a client receiving ezetimibe. Taking a dietary history of the client and inspecting the skin and eyelids for evidence of xanthomas are the preadministration assessments that a nurse should perform for a client receiving ezetimibe. The nurse obtains the reports of fasting blood sugar for a client with diabetes.

23. A nurse in a health care facility is caring for a client receiving colesevelam. The nurse would anticipate administering this drug cautiously to a client with which condition?
    A) Diabetes
    B) Peptic ulcer disease
    C) Liver disease
    D) Unstable angina
    Ans: C
    Feedback:
    Colesevelam is administered with caution in clients with liver disease. Fibric acid derivatives are administered with caution in clients with peptic ulcer disease and diabetes. Niacin is used with caution in clients with unstable angina.

24. A client is receiving pravastatin to reduce the risk of coronary heart disease due to hyperlipidemia. The client is also receiving amiodarone for an arrhythmia. The nurse understands that the client is at risk for which of the following based on these two drugs?
    A) Increased anticoagulant effect
    B) Increased hypoglycemic effect
    C) Increased risk of myopathy
    D) Decreased effects of pravastatin
    Ans: C
    Feedback:
    When the HMG-CoA reductase inhibitor pravastatin is administered with amiodarone, the nurse should monitor the client for increased risk of myopathy as an effect of the interaction between the two drugs. Increased anticoagulant effect is observed in clients receiving warfarin along with pravastatin. Increased hypoglycemic effects are observed in clients receiving sulfonylureas with fibric acid derivatives. The interaction of pravastatin with amiodarone does not decrease the effect of pravastatin.

25. A client with very high serum triglyceride levels is prescribed the fibric acid derivative clofibrate. The nurse understands that this drug would be contraindicated if the client has which condition?
    A) Endocrine disorder
    B) Primary biliary cirrhosis
    C) Arterial bleeding
    D) Respiratory depression
    Ans: B
    Feedback:
    The fibric acid derivative clofibrate is contraindicated in clients with primary biliary cirrhosis. The use of clofibrate is not contraindicated in clients with an endocrine disorder. The HMG-CoA reductase inhibitors are used with caution in clients with a history of endocrine disorders. Niacin is contraindicated in clients with arterial bleeding. The fibric acid derivative clofibrate is not contraindicated in clients with respiratory depression.

26. A nurse is caring for a client taking a cholestyramine drug. What instructions should the nurse give to this client to prevent constipation?
    A) "Eat foods high in dietary fiber."
    B) "Follow a complete liquid diet."
    C) "Be sure to stay on complete bed rest."
    D) "Take the water-soluble form of vitamin A."
    Ans: A
    Feedback:
    The nurse should instruct the client taking a cholestyramine drug to eat foods high in dietary fiber to prevent constipation. The nurse need not instruct the client to have a complete liquid diet or complete bed rest; instead, the nurse should instruct the client to exercise to prevent constipation. Clients are asked to take a water-soluble form of vitamin A if they are experiencing impaired digestion of fats and absorption of the fat-soluble vitamins due to long-term therapy of bile acid sequestrants.

27. A nurse is caring for a client who has been prescribed colestipol granules. Which of the following would the nurse do when administering the drug to the client?
    A) Mix the granules in 2 to 6 fluid ounces of water.
    B) Take care not to crush the granules.
    C) Give the granules once or twice daily with meals.
    D) Mix the drug in 90 mL of liquid.
    Ans: D
    Feedback:
    The nurse should mix the drug in 90 mL of liquid, soups, cereals, carbonated drinks, or pulpy fruits when administering the colestipol granules to the client. Cholestyramine powder is mixed in 2 to 6 fluid ounces of water. Colestipol tablets are not crushed. Colesevelam tablets are taken once or twice daily with meals.

28. A client with hypercholesterolemia is prescribed lovastatin. When instructing the client how to take the drug, which of the following would the nurse include?
    A) Taking the drug with his evening meal
    B) Combining the drug with the artificial sweetener aspartame
    C) Mixing the drug with highly fluid soups or pulpy fruits
    D) Taking the drug with grapefruit juice
    Ans: A
    Feedback:
    For the self-administration of lovastatin, the nurse should suggest the client take the drug with his evening meal. Cholestyramine powder is mixed with highly fluid soups or pulpy fruits. Cholestyramine is available combined with the artificial sweetener aspartame. The client should not drink grapefruit juice when taking lovastatin.

29. When reviewing a client's history, the nurse notes that the client uses garlic to promote cardiovascular health. The nurse understands that which of the following is a benefit of its use? Select all that apply.
    A) Improved LDL-to-HDL ratio
    B) Lower serum triglyceride levels
    C) Lower blood pressure
    D) Prevention of atherosclerosis
    E) Reduced risk for blood clots
    Ans: B, C, D
    Feedback:
    The benefits of garlic include lowering serum cholesterol and triglyceride levels, improving the ratio of HDL to LDL cholesterol, lowering blood pressure, and helping to prevent the development of atherosclerosis.

30. A nurse is reviewing a client's laboratory test results after being on statin therapy for several months. Which of the following would the nurse interpret as indicating effectiveness of the drug? Select all that apply.
    A) Total cholesterol 220 mg/dL
    B) LDL cholesterol 80 mg/dL
    C) HDL cholesterol 30 mg/dL
    D) LDL cholesterol 165 mg/dL
    E) HDL cholesterol 60 mg/dL
    Ans: B, E
    Feedback:
    Effectiveness of therapy would be indicated by values that are low or optimal. This would include a total cholesterol below 200 mg/dL, LDL less than 100 mg/dL, and HDL greater than 40 mg/dL.

31. A client who is prescribed niacin comes to the clinic complaining of significant skin flushing and itching. The client states, “It's really uncomfortable, so much so that I almost stopped taking the drug.” The nurse informs the primary health care provider. Which of the following would the nurse anticipate that the primary health care provider may recommend?
    A) Prednisone
    B) Aspirin
    C) Ibuprofen
    D) Hydrocortisone
    Ans: B
    Feedback:
    Aspirin may be recommended before taking niacin preparations to reduce adverse reactions when niacin causes skin reactions that are severe or cause extreme discomfort.

32. A client is prescribed a bile acid resin and has been taking this therapy long term. The primary health care provider has prescribed vitamins A and D in water-soluble form. Which nursing diagnosis would be most likely?
    A) Risk for Impaired Skin Integrity
    B) Constipation
    C) Risk for Injury
    D) Risk for Imbalanced Nutrition: Less Than Body Requirements
    Ans: D
    Feedback:
    Bile acid resins may interfere with the digestion of fats and prevent the absorption of the fat-soluble vitamins (vitamins A, D, E, and K) and folic acid. Therefore, the nursing diagnosis of Risk for Imbalanced Nutrition: Less Than Body Requirements would be most appropriate. Adverse reactions associated with nicotinic acid such as flushing would suggest a risk for impaired skin integrity. Constipation would be associated with statin therapy. Risk for Injury may be appropriate for clients taking fibrates or statins.

33. A nurse is conducting a community presentation on heart disease, cholesterol, and risk factors. The nurse determines that the class has been successful when the class identifies which of the following as true?
    A) Low-fat diet raises LDL cholesterol levels.
    B) Being overweight causes HDL levels to go up.
    C) Physical activity raises HDL cholesterol levels.
    D) Excess body weight causes LDL cholesterol to go down.
    Ans: C
    Feedback:
    Saturated fat and cholesterol in the food raises total and LDL cholesterol levels. Being overweight can make LDL cholesterol levels go up and HDL levels go down. Increased physical activity helps to lower LDL cholesterol and raise HDL cholesterol levels.

1. When teaching a client newly diagnosed with hypertension, which instructions would the nurse incorporate into the teaching plan? Select all that apply.
   A) Lose weight.
   B) Stop smoking.
   C) Reduce stress.
   D) Decrease exercise.
   E) Increase sodium intake.
   Ans: A, B, C
   Feedback:
   Nonpharmacologic management of hypertension should include weight loss, stress reduction, regular aerobic exercise, smoking cessation, moderation of alcohol, and decreased sodium intake.

2. When developing a presentation for a local community group on hypertension, the nurse integrates information about the importance of blood pressure control. Which of the following would the nurse include? Select all that apply.
   A) Hypertension increases the buildup of atherosclerotic plaque.
   B) Hypertension increases risk of stroke.
   C) Hypertension increases risk of colorectal carcinoma.
   D) Hypertension increases risk of liver disease.
   E) Hypertension increases the workload of the heart.
   Ans: A, B, E
   Feedback:
   Hypertension is serious, because it causes the heart to work too hard and contributes to atherosclerosis. It also increases the risk of heart disease, heart failure (HF), kidney disease, blindness, and stroke. Hypertension is not associated with colorectal carcinoma or liver disease.

3. A client with hypertension is to receive a calcium channel blocker. The nurse understands that this class of drug leads to which of the following? Select all that apply.
   A) Relaxation of blood vessels
   B) Increased oxygen supply to the heart
   C) Reduced workload on the heart
   D) Decreased blood pressure
   E) Increased workload on the kidneys
   Ans: A, B, C, D
   Feedback:
   The use of calcium channel blockers results in relaxation of blood vessels, increased oxygen supply to the heart, reduced workload on the heart, and decreased blood pressure.

4. While reviewing a client's lab work, the nurse notices the client's potassium is elevated. The nurse checks the client's medication record. Which of the following, if found, would the nurse identify as contributing to the client's elevated potassium level? Select all that apply.
   A) Atenolol
   B) Aliskiren
   C) Clonidine
   D) Metoprolol
   E) Eplerenone
   Ans: B, E
   Feedback:
   Direct renin inhibitors such as aliskiren and the drug eplerenone can cause hyperkalemia. Atenolol and metoprolol are beta blockers. Clonidine is a centrally acting adrenergic drug.

5. A nurse is caring for a client experiencing a hypertensive emergency. The nurse understands that if blood pressure is not lowered immediately, damage to which of the following can occur? Select all that apply.
   A) Heart
   B) Kidneys
   C) Gallbladder
   D) Pancreas
   E) Eyes
   Ans: A, B, E
   Feedback:
   A hypertensive emergency, if not recognized and treated quickly, can result in damage to target organs including the heart, kidneys, and eyes.

6. Angioedema is a potentially life-threatening medical condition that is associated with some classes of antihypertensive medications. The nurse suspects that a client is experiencing angioedema based on which assessment finding? Select all that apply.
   A) Heart rate above 100 beats per minute
   B) Fever greater than 100°F
   C) Swelling of the face
   D) Swelling of the throat
   E) Blood pressure above 170/100 mm Hg
   Ans: C, D
   Feedback:
   Angioedema presents with swelling of the face, lips, throat, or extremities.

7. Before administering an antihypertensive, the nurse should complete which of the following assessments? Select all that apply.
   A) Pulse rate on both arms
   B) Pulse rate on one arm
   C) Blood pressure in the sitting position
   D) Blood pressure on both arms
   E) Blood pressure on one arm
   Ans: A, C, D
   Feedback:
   Preadministration assessment for antihypertensives should include blood pressure and pulse rate on both arms with the client in standing, sitting, and lying positions.

8. The nurse is providing care to a client being treated for a hypertensive emergency. Which of the following would be appropriate for the nurse to do?
   A) Take a blood pressure every 30 minutes.
   B) Alternate the arms for assessing the blood pressure and pulse.
   C) Continuously monitor the client's status.
   D) Measure the pulse rate every hour.
   Ans: C
   Feedback:
   When the patient has severe hypertension, does not have the expected response to drug therapy, or is critically ill, continuous monitoring is performed. The blood pressure should be taken in the same arm and same position each time.

9. A client with hypertension comes to the clinic for a follow-up visit. Which of the following would be appropriate for the nurse to do when assisting the client in managing his hypertension? Select all that apply.
   A) Find local resources in the community for taking blood pressure.
   B) Teach client how to properly record weight and blood pressure.
   C) Schedule regular monitoring of weight and blood pressure.
   D) Schedule an appointment to see a cardiologist.
   E) Schedule an appointment to see a nephrologist.
   Ans: A, B, C
   Feedback:
   In the ambulatory care setting, the nurse helps plan a schedule of regular monitoring of weight and blood pressure, finds local resources for taking blood pressure in the community, and teaches the client how to record weight and blood pressure readings.

10. The nurse should notify the primary health care provider when which of the following occur while a client is receiving an antihypertensive? Select all that apply.
    A) Weight gain of 2 lb or more per day
    B) Headache
    C) Edema
    D) Insomnia
    E) Sedation
    Ans: A, C
    Feedback:
    The nurse should notify the primary health care provider if a client has a weight gain of 2 lb or more per day or edema of the hands, fingers, feet, legs, or sacral area.

11. When teaching a client about the prescribed clonidine transdermal medication, which of the following would the nurse most likely include? Select all that apply.
    A) A new patch is applied daily.
    B) If the patch loosens, a new patch should be applied.
    C) The use of the adhesive overlay is not necessary.
    D) A different body area should be selected for each application.
    E) The patch should be applied to a hairless area.
    Ans: D, E
    Feedback:
    The patch is applied to a hairless area of intact skin on the upper arm or torso; the patch is kept in place for 7 days. The adhesive overlay is applied directly over the system to ensure the patch remains in place for the required time. A different body area is selected for each application. If the patch loosens before 7 days, the edges can be reinforced with nonallergenic tape. The date the patch was placed and the date the patch is to be removed can be written on the surface of the patch with a fiber-tipped pen.

12. The nurse should advise the client to do which of the following to reduce the risk of falls due to orthostatic hypotension from antihypertensive drugs? Select all that apply.
    A) Sit on the bed for 1 or 2 minutes when rising from a lying position.
    B) Rise quickly from a chair when moving to a standing position.
    C) Take the antihypertensive less frequently if hypotension occurs.
    D) Have someone assist the client if dizziness or weakness occurs.
    E) Increase salt intake to counteract the hypotension.
    Ans: A, D
    Feedback:
    The nurse explains that when rising from a lying position, the client should sit on the edge of the bed for 1 or 2 minutes; the client should rise slowly from a chair and then stand for 1 to 2 minutes; and when symptoms of orthostatic hypotension occur, someone assisting the client in getting out of bed or a chair can decrease the risk of falls due to orthostatic hypotension.

13. A client is prescribed an antihypertensive drug. Which of the following would the nurse include in the teaching plan to promote the best outcome for the client? Select all that apply.
    A) "Never discontinue use of the antihypertensive drug except on the advice of the physician."
    B) "Avoid the use of nonprescription drugs unless approved by the physician."
    C) "Avoid alcohol unless its use has been approved by the physician"
    D) "Know that unexplained weakness or fatigue is a normal adverse reaction."
    E) "Notify the physician if the diastolic pressure suddenly increases to 130 mm Hg or higher."
    Ans: A, B, C, E
    Feedback:
    The client should be told to never discontinue the drug unless advised to do so, avoid nonprescription drugs unless approved, avoid alcohol unless it's approved, and notify the physician if the diastolic pressure suddenly increases to 130 mm Hg or higher. The client also should contact the physician if unexplained weakness or fatigue occurs.

14. A client is prescribed atenolol. After administering the drug, the nurse would be alert for which of the following? Select all that apply.
    A) Cough
    B) Hyperkalemia
    C) Bradycardia
    D) Dizziness
    E) Constipation
    Ans: C, D
    Feedback:
    Common adverse reactions seen with atenolol, a beta-adrenergic blocker, include bradycardia, dizziness, fatigue, weakness, hypotension, nausea, vomiting, diarrhea, and nervousness. Cough is associated with ACE inhibitors. Hyperkalemia is associated with eplerenone and aliskiren. Constipation is not a common adverse reaction with atenolol.

15. After teaching a group of nursing students about hypertension, the instructor determines that the teaching was successful when the students identify which of the following as a risk factor for development of hypertension? Select all that apply.
    A) Advancing age
    B) Family history
    C) Caucasian race
    D) Cigarette smoking
    E) Chronic alcohol consumption
    Ans: A, B, D, E
    Feedback:
    Risk factors for hypertension include advancing age, family history, cigarette smoking, and chronic alcohol consumption. African American race is also a risk factor.

16. The use of angiotensin-converting enzyme inhibitors (ACEIs) and angiotensin II receptor blockers (ARBs) are contraindicated in clients with which of the following medical conditions? Select all that apply.
    A) Bilateral stenosis
    B) Angioedema
    C) Pregnancy
    D) Diabetes
    E) Hyperlipidemia
    Ans: A, B, C
    Feedback:
    The use of ACEIs and ARBs is contraindicated if the client has impaired renal function, heart failure, salt or volume depletion, bilateral stenosis, angioedema, or is pregnant.

17. A client who is prescribed losartan for hypertension has stopped taking the drug immediately after experiencing adverse reactions. The nurse would be alert for which of the following due to abrupt discontinuation?
    A) Breathing difficulty
    B) Rebound hypertension
    C) Orthostatic hypotension
    D) Anginal attacks
    Ans: B
    Feedback:
    Rebound hypertension will occur in clients when antihypertensives are abruptly discontinued. In rebound hypertension, there is a sudden rise in blood pressure when the antihypertensives are withheld. Orthostatic hypotension, anginal attacks, and breathing difficulty are the adverse reactions associated with antihypertensive drug usage and may not occur on stopping the drug.

18. A nurse is educating a client with hypertension who is prescribed losartan about the drug's action. Which of the following would the nurse incorporate into the teaching about this drug?
    A) Blocking aldosterone receptors
    B) Preventing conversion of angiotensin I
    C) Blocking angiotensin II receptors
    D) Preventing renin secretion
    Ans: C
    Feedback:
    Losartan is an angiotensin II receptor antagonist, acting to block the angiotensin II receptors. By blocking the angiotensin II receptor, the renin-angiotensin system is stopped and consequently blood pressure is reduced. Drugs such as captopril prevent the conversion of angiotensin I. Losartan does not prevent renin secretion. Losartan does not block aldosterone receptors.

19. During a routine check-up of a 45-year-old client with renal disease, the nurse observes an increase in the client's blood pressure. The nurse identifies this as most likely which of the following?
    A) Essential hypertension
    B) Secondary hypertension
    C) Rebound hypertension
    D) Hypertensive emergency
    Ans: B
    Feedback:
    Secondary hypertension results as a consequence of renal impairment. In secondary hypertension there is usually a known cause for the development of hypertension. Renal disease is one of the causes of secondary hypertension. When there is no known cause of hypertension, it is called essential hypertension. Rebound hypertension occurs when a client abruptly stops taking antihypertensive medication. Hypertensive emergency is a high blood pressure state, which has to be lowered immediately.

20. When educating a group of nursing students on the mechanism of action of angiotensin-converting enzyme inhibitor (ACEI) drugs, the instructor identifies which of the following as the action brought about by aldosterone?
    A) Inhibits renin secretion
    B) Causes sodium and water retention
    C) Causes excess potassium retention
    D) Promotes angiotensin I conversion
    Ans: B
    Feedback:
    Aldosterone causes retention of sodium and water. This in turn causes a rise in blood pressure. ACEIs act by inhibiting the conversion of angiotensin I to angiotensin II. Aldosterone does not inhibit the release of renin and is not involved in the retention of potassium. Angiotensin-converting enzymes, and not aldosterone, are involved in the conversion of angiotensin I to angiotensin II.

21. A client with hypertension has a fungal infection and has been prescribed fluconazole for the fungal infection and losartan for hypertension. The nurse would be alert for which of the following?
    A) Increased risk of adverse effects of losartan
    B) Increased risk of hypersensitivity reaction
    C) Decreased hypotensive effect of losartan
    D) Increased risk of hypoglycemia
    Ans: A
    Feedback:
    Increased risk of antihypertensive effects and adverse reactions are associated with the concomitant use of fluconazole and losartan. Decreased hypotensive effect of losartan is seen with use of indomethacin and does not occur with the concomitant use of these drugs. Increased risk of hypoglycemia and increased risk of hypersensitivity do not occur with the concomitant use of these drugs.

22. A client is receiving a diuretic for the treatment of hypertension. Which of the following conditions should the nurse monitor for in clients taking diuretics?
    A) Hyperkalemia
    B) Hyponatremia
    C) Hypomagnesemia
    D) Hypocalcemia
    Ans: B
    Feedback:
    The nurse should assess for hyponatremia in clients receiving diuretics. Diuretic usage causes electrolyte disturbances such as hyponatremia and hypokalemia. The nurse should inform the primary health care provider if signs and symptoms of electrolyte imbalance occur. Hyperkalemia, hypomagnesemia, and hypocalcemia do not occur in clients taking diuretics.

23. A client is prescribed clonidine as a transdermal patch. After instructing the client about this drug, the nurse determines that the teaching was successful when the client states that the patch should remain in place for how long?
    A) 24 hours
    B) 3 days
    C) 7 days
    D) 2 weeks
    Ans: C
    Feedback:
    The nurse should ensure that the transdermal patch is intact for a period of 1 week. A clonidine transdermal patch should be applied to a hairless area over the torso for 1 week. If the patch loosens before 7 days, it has to be reinforced. The nurse has to mark the date of placement and the date of removal of the patch on the surface of the patch.

24. A client, aged 60 years, is receiving nitroprusside for hypertensive emergency. The nurse would be alert for the development of which of the following?
    A) Significant hypotension
    B) Rebound hypertension
    C) Blindness
    D) Stroke
    Ans: A
    Feedback:
    An older adult client is at risk for significant hypotension when receiving nitroprusside. To prevent this, the dosage should be reduced during the initial period of therapy. Rebound hypertension, stroke, and blindness will not occur during nitroprusside therapy.

25. A nurse is instructing a client about his prescribed antihypertensive therapy with captopril. Which of the following instructions would the nurse include in the teaching plan? Select all that apply.
    A) Taking the drug with meals to decrease GI upset
    B) Informing the client about the possibility of a cough
    C) Crushing the capsule before taking it
    D) Taking measures to reduce injury from hypotension
    E) Reporting any swelling of the face, throat, or extremities
    Ans: B, D
    Feedback:
    The client needs to know that some clients experience a dry cough that does not subside until drug therapy is discontinued and this reaction may need to be tolerated. In addition, these drugs may cause a significant drop in blood pressure after the first dose, so the client needs to take measures to reduce the risk of injury from the drug's effects. The ACE inhibitors, captopril and moexipril, should be taken 1 hour before or 2 hours after meals to enhance absorption. The drugs are sustained-release capsules that should not be crushed, opened, or chewed. ACEIs do not cause angioedema.

26. An older adult client is prescribed a diuretic and an antihypertensive drug as treatment for his hypertension. The client tells the nurse that he has been perspiring a lot lately and has had some diarrhea. Which nursing diagnosis would the nurse most likely identify as a priority?
    A) Risk for Deficient Fluid Volume
    B) Ineffective Sexuality Patterns
    C) Activity Intolerance
    D) Acute Pain
    Ans: A
    Feedback:
    Risk for Deficient Fluid Volume would be the most likely priority because the client is receiving a diuretic and an antihypertensive drug. The risk increases if the client is older or confused. Ineffective Sexuality Patterns would be appropriate if the client were to experience sexual dysfunction related to drug therapy. Activity Intolerance would be appropriate if the client complained of feeling tired and weak. Acute Pain would be related to the development of a headache that may occur with angiotensin II receptor blockers or antiadrenergics.

27. A nurse is reviewing the medical records of several clients who have come to the clinic for a visit. The nurse determines that a client with which blood pressure readings would be identified as prehypertensive?
    A) 112/72 mm Hg
    B) 128/86 mm Hg
    C) 144/92 mm Hg
    D) 164/102 mm Hg
    Ans: B
    Feedback:
    Prehypertension is classified as a systolic blood pressure ranging between 120 and 139 mm Hg or a diastolic pressure ranging between 80 and 89 mm Hg. A systolic pressure below 120 mm Hg and a diastolic pressure below 80 mm Hg is considered normal. Stage 1 hypertension would be characterized by a systolic pressure between 140 and 159 mm Hg or a diastolic pressure between 90 and 99 mm Hg. Stage 2 hypertension would be characterized by a systolic pressure of 160 mm Hg or greater or a diastolic pressure of 100 mm Hg or greater.

28. When providing care to a client with hypertension who is receiving antihypertensive therapy, which assessment would be the highest priority?
    A) Pain rating
    B) Blood pressure monitoring
    C) Weight measurement
    D) Complaints of adverse reactions
    Ans: B
    Feedback:
    Although assessing for pain, measuring weight, and assessing for complaints of adverse reactions are important, monitoring the client's blood pressure would have the highest priority because the drug therapy regimen may need to be adjusted or changed if the client's response is inadequate.

29. A client has a nursing diagnosis of Activity Intolerance related to fatigue and weakness. Which of the following would be appropriate for the nurse to include in the client's plan of care?
    A) Encouraging ambulation as tolerated
    B) Maintaining bed rest as much as possible
    C) Mandating the use of assistive devices
    D) Encouraging activities early in the morning when fatigue is less
    E) Promoting rest periods throughout the day as necessary
    Ans: A, E
    Feedback:
    The client is encouraged to walk and ambulate as he or she can tolerate. Assistive devices may be used if needed, but these should not be mandated for use. The client can gradually increase tolerance by increasing the daily amount of activity. Planning rest periods according to the individual's tolerance is appropriate. Rest can take many forms, such as sitting in a chair, napping, watching television, or sitting with legs elevated.

30. After teaching a group of nursing students about antihypertensive drugs, the instructor determines a need for additional teaching when the students identify which of the following as an angiotensin-converting enzyme inhibitor?
    A) Pindolol
    B) Benazepril
    C) Quinapril
    D) Enalapril
    Ans: A
    Feedback:
    Pindolol is a beta-adrenergic blocker. Benazepril, quinapril, and enalapril are ACEIs.

1. The nurse instructs a client suffering from frequent anginal attacks to keep a record of each attack. Which of the following would the nurse instruct the client to record? Select all that apply.
   A) Blood pressure
   B) Date of attack
   C) Time of attack
   D) Drug used to relieve the acute pain
   E) Dose of drug used to relieve the acute pain
   Ans: B, C, D, E
   Feedback:
   Clients should keep a record of the frequency of acute anginal attacks including date of attack, time of attack, and drug and dose used to relieve the acute pain. The client should bring this record to each physician visit.

2. When discussing the use of antianginal drugs for the treatment of cardiac disease, a nurse would expect to include which of the following? Select all that apply.
   A) Relief of pain of acute anginal attacks
   B) Reduction in serum triglyceride levels
   C) Prevention of anginal attacks
   D) Elevation of high-density lipoproteins (HDLs)
   E) Treatment of chronic stable angina pectoris
   Ans: A, C, E
   Feedback:
   Antianginal drugs are used to relieve the pain of acute anginal attacks, prevent anginal attacks, and treat chronic stable angina pectoris. Antianginals have no effect on HDLs or triglycerides.

3. A nurse reviews a client's medication history for drugs that might interact with the client's prescribed nitrate therapy. Which of the following if administered with nitrates would the nurse identify as causing severe hypotension and possible cardiovascular collapse? Select all that apply.
   A) Alcohol
   B) Beta-2 agonists
   C) HMG-CoA reductase inhibitors
   D) Angiotensin-converting enzyme inhibitors
   E) Phosphodiesterase inhibitors
   Ans: A, E
   Feedback:
   Alcohol and phosphodiesterase inhibitors when administered with nitrates can cause severe hypotension and possible cardiovascular collapse.

4. Which of the following does the nurse need to include as part of the physical assessment of a client with anginal pain? Select all that apply.
   A) Blood pressure
   B) Apical pulse
   C) Oxygen saturation
   D) Radial pulse
   E) Respiratory rate
   Ans: A, B, D, E
   Feedback:
   The nurse's physical assessment of a client with angina should include blood pressure, respiratory rate, and apical and radial pulses. The physical assessment may also include weight, inspection of the extremities for edema, and auscultation of the lungs, depending on the type of heart failure.

5. When a nurse is obtaining a history from a client regarding anginal pain, which of the following should be included? Select all that apply.
   A) Duration of the pain
   B) Events that relieve anginal pain
   C) Events that trigger anginal pain
   D) Description of the pain
   E) Whether the pain radiates
   Ans: B, C, D, E
   Feedback:
   A client history regarding anginal pain should include a description of the pain, whether the pain radiates and to where it radiates, what events appear to trigger the pain, and what events appear to relieve the pain.

6. A nurse is teaching a client who is prescribed nitrate therapy about adverse reactions. When discussing headaches associated with nitrates, which of the following would the nurse include? Select all that apply.
   A) Headaches should decrease with continued therapy.
   B) Headaches may be relieved with the use of aspirin or acetaminophen.
   C) Headaches should be avoided by altering the dosage schedule.
   D) Headaches are a serious adverse reaction and should be reported immediately.
   E) Headaches may be a marker of the drug's effectiveness.
   Ans: A, B, E
   Feedback:
   Headaches are a common adverse reaction of nitrates but should decrease with continued therapy. Headaches should be reported if they become severe or persist. Headaches may be a marker of the nitrate's effectiveness, and clients should not alter the dosing schedule to avoid headaches. Headaches may be treated with acetaminophen or aspirin.

7. A nurse instructs a client who is taking oral nitrates to store the drug in which manner? Select all that apply.
   A) In its original container
   B) With the container lid tightly sealed
   C) With other medications in the container
   D) In a plastic pill box so doses are not missed
   E) Away from light exposure
   Ans: A, B, E
   Feedback:
   The proper storage of oral nitroglycerin includes keeping tablets and capsules in their original container, never mixing oral nitroglycerin with other drugs in a container, never storing oral nitroglycerin in a plastic container, keeping the drug away from light, and always replacing the container tightly and as soon as the drug is removed.

8. After teaching a client about how to use translingual nitroglycerin spray, the nurse determines that the teaching was successful when the client states which of the following? Select all that apply.
   A) "I need to shake the canister before use."
   B) "I will place one to two metered doses under my tongue at the start of an attack."
   C) "I'm not to use this form to prevent an attack."
   D) "I should not exceed three metered doses in 15 minutes."
   E) "I can spray the drug onto or under the tongue."
   Ans: B, D, E
   Feedback:
   Nitroglycerin translingual spray can be used prophylactically 5 to 10 minutes prior to engaging in activities that precipitate an anginal attack. The client should not shake the canister before use. At the onset of an anginal attack, the client should spray one or two metered doses onto or under the tongue and not exceed three metered doses within 15 minutes. The client should clean the canister as directed on the package.

9. Prior to administering an antianginal drug, the nurse should assess which of the following? Select all that apply.
   A) Pain
   B) Physical appearance
   C) Lung sounds
   D) Heart sounds
   E) Vital signs
   Ans: A, B, C, E
   Feedback:
   Before administering an antianginal agent, the nurse would assess the client's pain, history of medication allergies and disease processes, physical appearance, and lungs for adventitious sounds and obtain a baseline electrocardiogram and vital signs.

10. In which of the following situations would a nurse withhold the antianginal medication and contact the physician? Select all that apply.
    A) Heart rate above 50 bpm
    B) Heart rate below 50 bpm
    C) Systolic blood pressure below 90 mm Hg
    D) Diastolic blood pressure below 90 mm Hg
    E) Respiratory rate below 20 breaths per minute
    Ans: B, C
    Feedback:
    A nurse would withhold the antianginal medication and contact the physician if a client's heart rate was below 50 bpm or systolic blood pressure drops below 90 mm Hg.

11. The nurse assesses for which of the following in a client receiving a calcium channel blocker? Select all that apply.
    A) Crackles
    B) Bradycardia
    C) Wheezing
    D) Dyspnea
    E) Peripheral edema
    Ans: A, D, E
    Feedback:
    A client receiving a calcium channel blocker should be monitored for signs of heart failure (dyspnea, weight gain, peripheral edema, abnormal lung sounds such as crackles or rales, and jugular vein distention). The physician should be notified immediately if any of these signs develop.

12. A nurse is preparing to administer nitroglycerin intravenously. Which of the following would be important for the nurse to keep in mind? Select all that apply.
    A) Using glass bottles
    B) Using non–polyvinyl chloride (PVC) infusion sets
    C) Administering the drug as an IV bolus
    D) Diluting the drug with normal saline
    E) Using a gravity flow rate of infusion
    Ans: A, B, D
    Feedback:
    When administering IV nitroglycerin, the nurse should dilute it with normal saline or 5% dextrose in water, administer the drug by continuous infusion using an infusion pump for accuracy, and use glass IV bottles and non-PVC infusion sets. The dose is regulated based on client response.

13. A client is prescribed verapamil as treatment for his angina. Which of the following would the nurse include in the teaching plan for this client? Select all that apply.
    A) Caplets may be opened and sprinkled on food.
    B) Drug should be administered without regard to meals.
    C) Tablet coverings can be expelled in the stool.
    D) Caplets should be swallowed whole.
    E) Drug should be administered with a meal.
    Ans: A, C, E
    Feedback:
    Verapamil frequently causes GI upset and should be administered with a meal. Caplets may be opened and sprinkled on food or mixed in liquids for clients who have difficulty swallowing. Sometimes the tablet coverings are expelled in the stool.

14. A client has a nursing diagnosis of Acute Pain related to angina. When teaching a client about antianginal drugs, the nurse would explain which of the following about pain relief? Select all that apply.
    A) Pain will only occur during prolonged exercise.
    B) Pain may be less intense.
    C) Pain may not be completely relieved.
    D) Pain may be less frequent.
    E) Pain will worsen with continued use.
    Ans: B, C, D
    Feedback:
    Although some clients experience complete angina pain relief, it may not be completely relieved in all clients. In some clients pain may be less intense or less frequent or may only occur during prolonged exercise.

15. After reviewing information about antianginal drugs, a student demonstrates understanding by identifying which of the following as indicated for the prevention of angina pectoris? Select all that apply.
    A) Diltiazem
    B) Isosorbide mononitrate
    C) Topical nitroglycerin
    D) Oral nitroglycerin
    E) Amlodipine
    Ans: B, C, D
    Feedback:
    All nitrates are indicated for the prevention of angina pectoris. Diltiazem and amlodipine are used to treat chronic stable angina.

16. A client is prescribed verapamil. The nurse would alert the client to the possibility of which of the following as most common? Select all that apply.
    A) Constipation
    B) Tachycardia
    C) Tachypnea
    D) Hypotension
    E) Headache
    Ans: A, E
    Feedback:
    The most common adverse reactions associated with verapamil are constipation and headache. Hypotension is associated with nitrate therapy. Tachycardia and tachypnea are not associated with verapamil.

17. When applying nitroglycerin ointment, which of the following would be appropriate? Select all that apply.
    A) Wear plastic disposable gloves.
    B) Apply entire tube of ointment to client's skin.
    C) Use the same application site each time ointment is applied.
    D) Cleanse the area of skin before application.
    E) Use the upper arms and legs for application.
    Ans: A, D, E
    Feedback:
    The nurse should wear plastic gloves while administering ointment and use application paper to measure and apply ointment to the client's chest, abdomen, or upper arms and legs. The application site should be rotated and cleansed with each application.

18. When caring for a client with angina, the nurse instructs the client to place the nitroglycerin tablet between the cheek and the gums. Which form of nitroglycerin is the nurse administering?
    A) Sublingual
    B) Transdermal
    C) Buccal
    D) Translingual
    Ans: C
    Feedback:
    The nurse is referring to the buccal route of administration. When administering buccal nitroglycerin, the nurse should instruct the client to place the tablet between the cheek and gums or the lips and gums above the incisors. The nurse should instruct the client to allow the tablet to dissolve and not to chew the tablet. Nitrates can also be given by the sublingual, transdermal, and translingual routes mentioned. When administering nitroglycerin sublingually, it should be placed under the tongue. In the transdermal route, the patch is applied directly onto the front or back of the chest. In the translingual route, the spray is directed under or onto the tongue.

19. A client is being discharged after being treated with nitroglycerin for an acute anginal attack. Which of the following instructions should the nurse provide the client regarding the administration of nitroglycerin ointment?
    A) Apply a thick layer of the ointment.
    B) Rub the ointment onto the skin.
    C) Use an applicator for applying the ointment.
    D) Apply on the same site during every application.
    Ans: C
    Feedback:
    The nurse should instruct the client to use an applicator for applying the nitroglycerin ointment. The ointment should not come in contact with the skin of the person applying it, as it gets easily absorbed. The nurse should instruct the client to apply a thin layer of the ointment on the skin using an applicator. The nurse must instruct the client not to rub the ointment while applying as it delivers large amounts of the drug into the system. The nurse should not apply the ointment on the same site during every application. The application site should be rotated to prevent inflammation of the area.

20. A client is being discharged after being treated with nitroglycerin for angina. Which of the following instructions should the nurse include in the teaching plan for the client?
    A) Store the nitroglycerin capsules in a plastic container.
    B) Place the nitroglycerin capsules along with other tablets.
    C) Recap the container tightly after taking out the capsules.
    D) Do not store nitroglycerin in a dark container.
    Ans: C
    Feedback:
    The nurse should instruct the client to recap the container tightly after taking out the nitroglycerin capsule. This is to ensure that the potency of nitroglycerin is not lost on exposure to air. Nitroglycerin should be stored in a dark container and protected from direct light exposure. The nurse should instruct the client to never store nitroglycerin under bright sunlight or in a plastic container. Nitroglycerin deteriorates when stored in plastic containers and on exposure to air and light. The nurse should instruct the client not to store nitroglycerin along with other drugs, as it loses its potency.

21. A client arrives at the urgent care center complaining of chest pain and is diagnosed with angina pectoris. Which of the following would the nurse expect to be prescribed?
    A) Nicardipine
    B) Hydralazine
    C) Minoxidil
    D) Nimodipine
    Ans: A
    Feedback:
    Nicardipine is the drug used in the treatment of angina. Nicardipine is a calcium channel blocker used as an antianginal drug. Hydralazine and minoxidil are vasodilators primarily used to treat hypertension. Nimodipine is a calcium channel blocker used to treat subarachnoid hemorrhage.

22. A nurse is caring for a client with angina who is receiving diltiazem. In which of the following conditions should the nurse withhold the drug and notify the health care provider?
    A) Client's systolic pressure is 110 mm Hg.
    B) Client exhibits significant weight loss.
    C) Client experiences lightheadedness.
    D) Client's pulse rate is 45 beats per minute.
    Ans: D
    Feedback:
    The nurse should withhold the drug and notify the health care provider when the client's pulse rate is 45 beats per minute. When calcium channel blockers are administered, there may be a fall in the pulse rate. When the pulse rate falls below 50 beats per minute, the nurse should notify the health care provider. When the systolic pressure falls below 90 mm Hg, the nurse should notify the primary health care provider. Weight gain, and not weight loss, occurs with the use of calcium channel blockers. The nurse should report weight gain. Lightheadedness is a common central nervous system adverse reaction occurring after taking the drug, and the nurse should instruct the client to lie down until the symptoms pass.

23. A client receiving amlodipine for angina is complaining of dizziness. Which of the following interventions should the nurse implement to help alleviate the condition?
    A) Apply a cold cloth over the forehead.
    B) Instruct the client to lie down.
    C) Instruct the client to drink more water.
    D) Reduce the dosage of amlodipine.
    Ans: B
    Feedback:
    Dizziness is a common central nervous system adverse effect seen with calcium channel blocker use. The nurse should instruct the client to lie down until the dizziness passes. Applying a cold cloth over the forehead will not relieve the dizziness. The dosage should not be reduced or altered unless instructed by the health care provider. Increasing the fluid consumption will also not help in alleviating dizziness.

24. A nurse is caring for a client who is prescribed transdermal nitroglycerin for angina. The nurse instructs the client to apply the patch for how long?
    A) 4 to 6 hours
    B) 6 to 8 hours
    C) 10 to 12 hours
    D) 12 to 14 hours
    Ans: C
    Feedback:
    The transdermal nitroglycerin patch should be applied every day for 10 to 12 hours. If the patch is applied for a shorter time, the therapeutic dosage may not be delivered. Applying the patch for a longer time will result in the development of tolerance to the antianginal effects. Applying the patch in the morning and leaving it on for 10 to 12 hours, followed by a patch-free period of 10 to 12 hours, delays the development of tolerance.

25. After teaching a group of nursing students about antianginal drugs, the instructor determines that the teaching was successful when the students identify which of the following as a calcium channel blocker?
    A) Minoxidil
    B) Hydralazine
    C) Isosorbide
    D) Nifedipine
    Ans: D
    Feedback:
    Nifedipine is a calcium channel blocker used to treat angina. Minoxidil and hydralazine are peripheral vasodilators. Isosorbide is a nitrate.

26. A client is prescribed nitrate therapy as treatment for angina. On a follow-up visit to the clinic, the client tells the nurse that he gets dizzy and weak when he takes the medication. The nurse would identify which nursing diagnosis as most likely?
    A) Risk for Injury
    B) Risk for Infection
    C) Deficient Fluid Volume
    D) Acute Pain
    Ans: A
    Feedback:
    The client is at risk for injury because of his complaints of dizziness and weakness. There is no indication that the client is experiencing an infection or has a fluid volume deficit. Complaints of pain would lead to a nursing diagnosis of Acute Pain.

27. A client is receiving treatment for angina with a vasodilator. The nurse instructs the client to notify his primary health care provider about which of the following? Select all that apply.
    A) Weight loss of 2 lb in a week
    B) Swelling of the extremities
    C) Episodes of dyspnea
    D) Heart rate increased by about 10 bpm
    E) Fainting
    Ans: B, C, E
    Feedback:
    The primary health care provider should be notified if the client experiences a heart rate of 20 bpm or more above the normal rate; rapid weight gain of 5 lb or more; unusual swelling of the extremities, face, or abdomen; dyspnea; angina; severe indigestion; or fainting.

28. When instructing the client on how to use the prescribed nitroglycerin ointment, the nurse would tell the client to use which of the following to determine the amount?
    A) A teaspoon
    B) Length of a finger
    C) Paper applicator
    D) The size of the previous dose
    Ans: C
    Feedback:
    The topical ointment is supplied with a paper applicator to determine the amount of drug to be used. No other method is appropriate.

1. When describing anticoagulants to a client, which of the following would the nurse expect to include? Select all that apply.
   A) Anticoagulants prevent formation of a thrombus.
   B) Anticoagulants prevent extension of a thrombus.
   C) Anticoagulants dissolve existing thrombi.
   D) Anticoagulants thin the blood.
   E) Anticoagulants can reverse the damage caused by a thrombus.
   Ans: A, B
   Feedback:
   Anticoagulants can prevent the formation and extension of a thrombus but have no direct effect on an existing thrombus and do not reverse any of the damage from that thrombus. Although clients often refer to anticoagulants as blood thinners, they do not actually thin the blood.

2. After teaching a group of nursing students about heparins, the instructor determines that the teaching was successful when the students identify which of the following as an example of a low-molecular-weight heparin (LMWH)? Select all that apply.
   A) Dalteparin
   B) Streptokinase
   C) Enoxaparin
   D) Warfarin
   E) Tinzaparin
   Ans: A, C, E
   Feedback:
   Dalteparin, enoxaparin, and tinzaparin are all examples of LMWHs. Streptokinase is a thrombolytic; warfarin is an oral anticoagulant.

3. Protamine is used to treat overdose of which of the following medications? Select all that apply.
   A) Clopidogrel (Plavix)
   B) Heparin
   C) Enoxaparin (Lovenox)
   D) Alteplase (Activase)
   E) Warfarin (Coumadin)
   Ans: B, C
   Feedback:
   Protamine is used to treat overdose of heparin and low-molecular-weight heparins (LMWHs).

4. A client is being discharged from the hospital with a prescription for clopidogrel. The nurse would instruct the client about which of the following as a possible adverse reaction? Select all that apply.
   A) Skin rash
   B) Bleeding
   C) Heart palpitations
   D) Nausea
   E) Constipation
   Ans: A, B, C, E
   Feedback:
   The most common adverse reactions associated with clopidogrel are skin rash, dizziness, bleeding, palpitations, and constipation.

5. When reviewing the medical records of several clients, the nurse understands that the use of anticoagulants is contraindicated in clients with which of the following medical conditions? Select all that apply.
   A) Leukemia
   B) Hypotension
   C) Atrial fibrillation
   D) GI ulcers
   E) Tuberculosis
   Ans: A, D, E
   Feedback:
   Anticoagulants are contraindicated in clients with known sensitivity to the drug, active bleeding, hemorrhagic disease, tuberculosis, leukemia, uncontrolled hypertension, GI ulcers, recent eye or CNS surgery, aneurysms, and severe renal and hepatic disease and during pregnancy and lactation.

6. Which assessment would the nurse obtain before administering an anticoagulant to a client with DVT? Select all that apply.
   A) Test for a positive Homans' sign.
   B) Examine extremity for skin temperature.
   C) Assess pain.
   D) Assess blood pressure.
   E) Check for pedal pulse.
   Ans: A, B, C, E
   Feedback:
   Preadministration assessment for a client with a DVT should include checking for a pedal pulse, examining the extremity for color and skin temperature, assessing for pain, and checking for a positive Homans' sign.

7. When teaching a class about parenterally administered heparin, which of the following would the nurse include? Select all that apply.
   A) Onset of action is almost immediate.
   B) Maximum effect occurs within 10 minutes.
   C) It is preferably given intramuscularly.
   D) Clotting time returns to normal within 4 hours.
   E) It causes fewer adverse reactions than the oral form.
   Ans: A, B, D
   Feedback:
   Parenteral heparin results in an almost immediate onset of action with a maximum effect within 10 minutes, but clotting returns to normal within 4 hours unless subsequent doses are given. It is preferably given subcutaneously or intravenously.

8. A client is receiving a heparin infusion. The nurse should check the needle site for the heparin infusion for signs of which of the following? Select all that apply.
   A) Inflammation
   B) Pain
   C) Tenderness
   D) Clot formation
   E) Itching
   Ans: A, B, C
   Feedback:
   The nurse inspects the needle site for signs of inflammation, pain, and tenderness along the pathway of the vein. If these occur the infusion is discontinued and restarted in another vein.

9. When teaching a client how to inject heparin subcutaneously, which of the following would the nurse include? Select all that apply.
   A) Holding the needle at a 45-degree angle
   B) Pinching a fold of skin
   C) Aspirating before injecting the drug
   D) Applying firm pressure after injection
   E) Changing sites for each dose
   Ans: B, D, E
   Feedback:
   When administering a subcutaneous dose of heparin, the nurse picks a site that has not been use previously, pinches a fold of skin, holds the needle at a 90-degree angle, does not aspirate before injecting, and then applies firm pressure to the area after injection.

10. Which of the following may be ordered periodically during therapy with anticoagulants? Select all that apply.
    A) Urinalysis
    B) Platelet count
    C) Blood count
    D) Stool analysis
    E) Ultrasound
    Ans: B, C, D
    Feedback:
    A complete blood count, platelet count, and stool analysis for occult blood may be ordered periodically throughout anticoagulant therapy.

11. A client is prescribed an anticoagulant. In which of the following situations would the nurse hold the drug and notify the physician? Select all that apply.
    A) PT exceeds 1.5 times the control value.
    B) PT is less than 1.5 times the control value.
    C) There is evidence of bleeding.
    D) INR is less than 3.0.
    E) INR is greater than 3.0.
    Ans: A, C, E
    Feedback:
    The nurse should withhold the drug and contact the physician if any of the following occur: the PT exceeds 1.5 times the control value, there is evidence of bleeding, or the INR is greater than 3.0.

12. A client is being discharged on warfarin therapy. Which of the following would the nurse include in the teaching plan for the client? Select all that apply.
    A) Be consistent with your intake of foods containing vitamin K.
    B) Do not change brands of warfarin without consulting the physician.
    C) Take the drug at the same time every evening.
    D) Do not take or stop taking other medications except on the advice of the physician.
    E) Inform the dentist of therapy with warfarin prior to any treatment or procedure.
    Ans: A, B, C, D, E
    Feedback:
    Instructions would include being consistent with intake of foods containing vitamin K, not changing brands of the drug, taking the drug at the same time each evening, not taking or stopping other medications, and informing the dentist about the use of warfarin.

13. A client is receiving streptokinase. The nurse understands that which of the following would occur? Select all that apply.
    A) Breakdown of existing thrombi
    B) Reopening of occluded blood vessels
    C) Prevention of tissue necrosis
    D) Decreased risk of internal bleeding
    E) Prevention of formation of a thrombus
    Ans: A, B, C
    Feedback:
    Streptokinase is a thrombolytic drug. Thrombolytic drugs break down existing thrombi, reopen blood vessels after occlusion, and prevent tissue necrosis.

14. The nurse instructs a client receiving warfarin about the importance of consistent intake of dietary vitamin K to decrease fluctuations in PT/INR. The nurse determines that the client understands the instructions when he identifies which foods as containing vitamin K? Select all that apply.
    A) Broccoli
    B) Cauliflower
    C) Fish
    D) Yogurt
    E) Chicken
    Ans: A, B, C, D
    Feedback:
    Foods high in vitamin K include leafy green vegetables, beans, broccoli, cabbage, cauliflower, cheese, fish, and yogurt.

15. A female client is prescribed warfarin. The client also uses oral contraceptives. The nurse would assess the client closely for which of the following? Select all that apply.
    A) Bruising
    B) Blood in the stool
    C) Subtherapeutic INR
    D) Supratherapeutic INR
    E) Calf pain and warmth
    Ans: C, E
    Feedback:
    Coadministration of warfarin and oral contraceptives can result in a decreased anticoagulant effect, leading to subtherapeutic INR and increased chance of clotting (signs and symptoms of DVT or PE).

16. A nurse is conducting a seminar on thrombosis. What information would the nurse include about the cause of arterial thrombosis?
    A) Decreased blood flow
    B) Injury to the vessel wall
    C) Arrhythmias
    D) Altered blood coagulation
    Ans: C
    Feedback:
    The nurse should mention that arterial thrombosis is caused by atherosclerosis and arrhythmias. Decreased blood flow, injury to the vessel wall, and altered blood flow are causes of venous thrombosis.

17. A client with thrombotic stroke is administered ticlopidine. The nurse would assess the client for which of the following?
    A) Dyspepsia
    B) Dyspnea
    C) Hematoma
    D) Bradycardia
    Ans: A
    Feedback:
    The nurse should monitor for dyspepsia in the client who has been administered ticlopidine. Hematoma is an adverse reaction to heparin. Dyspnea is an adverse reaction to protamine sulfate and treprostinil. Bradycardia is an adverse reaction to protamine sulfate.

18. A client with intermittent claudication is prescribed cilostazol by the primary health care provider. The nurse would expect to administer this drug cautiously if the client's history reveals which of the following?
    A) Intermittent claudication
    B) Pulmonary emboli
    C) Myocardial infarction
    D) Pancytopenia
    Ans: D
    Feedback:
    The nurse should administer cilostazol with caution to clients with pancytopenia. Anticoagulants are used for the prevention and treatment of pulmonary emboli, the adjuvant treatment of myocardial infarction, and the treatment of intermittent claudication.

19. A client is prescribed warfarin. The client also takes a diuretic for the treatment of cardiac problems. The nurse would anticipate which of the following?
    A) Decreased effectiveness of the anticoagulant
    B) Increased effectiveness of the diuretic
    C) Increased absorption of the anticoagulant
    D) Increased absorption of the diuretic
    Ans: A
    Feedback:
    The nurse should monitor for decreased effectiveness of warfarin as an effect of the interaction between the anticoagulant and the diuretic. The nurse need not monitor for the increased effectiveness of the diuretic, the increased absorption of the anticoagulant, or the increased absorption of the diuretic in the client.

20. A client is receiving heparin by continuous IV infusion. Which of the following would be most appropriate for the nurse to do?
    A) Perform a complete blood count.
    B) Perform baseline PT/INR.
    C) Perform APTT test 4 to 6 hours after injection.
    D) Perform blood coagulation tests every 4 hours.
    Ans: D
    Feedback:
    The nurse should perform blood coagulation tests every 4 hours for the client receiving heparin by continuous IV infusion. A blood count test or the baseline PT/INR test is not the right intervention for this client. When administering heparin by the subcutaneous route, an APTT test is performed 4 to 6 hours after the injection.

21. A nurse is caring for a client receiving the anticoagulant drug warfarin. Which assessment would be most appropriate before administering the drug?
    A) Observe for signs of thrombus formation.
    B) Assess prothrombin time (PT) and INR.
    C) Assess for signs of bleeding.
    D) Monitor for hypersensitivity reaction.
    Ans: B
    Feedback:
    The nurse should assess the prothrombin time (PT) and INR before administering the anticoagulant drug warfarin to the client. Observing for signs of thrombus formation, assessing for signs of bleeding, and monitoring for hypersensitivity reaction are the ongoing assessments performed in clients who are administered warfarin.

22. A female client is receiving an anticoagulant to prevent the formation and extension of blood clots. What instruction should the nurse include in the teaching plan for the client?
    A) Avoid caffeinated drinks.
    B) Take the drug on an empty stomach.
    C) Use a reliable contraceptive.
    D) Take the drug with a glass of milk.
    Ans: C
    Feedback:
    The nurse should instruct the female client to use a reliable contraceptive to prevent pregnancy. The nurse need not instruct the client to avoid caffeinated drinks, take the drug on an empty stomach, or take the drug with a glass of milk.

23. A client in a health care facility is receiving the thrombolytic drug reteplase. Which nursing diagnosis would be most likely?
    A) Anxiety
    B) Constipation
    C) Disturbed Sensory Perception
    D) Ineffective Tissue Perfusion
    Ans: A
    Feedback:
    The nursing diagnoses for a client receiving the thrombolytic drug reteplase should include Anxiety. Constipation, disturbed sensory perception, and ineffective tissue perfusion would be unlikely for the client receiving reteplase.

24. A nurse is caring for a client prescribed warfarin. The nurse would instruct the client that which of the following foods are high in vitamin K?
    A) Dairy products
    B) Root vegetables
    C) Green leafy vegetables
    D) Fruits and cereals
    Ans: C
    Feedback:
    The nurse should inform the client that green leafy vegetables are high in vitamin K. Increased amounts of vitamin K could decrease the PT/INR and increase the risk of clot formation. Dairy products, root vegetables, fruits, and cereals are generally low in vitamin K. A diet that is very low in vitamin K may prolong the PT/INR and increase the risk of hemorrhage. The key to vitamin K management for clients receiving warfarin is maintaining a consistent daily intake of vitamin K. To avoid large fluctuations in vitamin K intake, clients receiving warfarin should be aware of the vitamin K content of food.

25. A nurse is conducting an in-service presentation about hemostasis. The nurse determines that the teaching was successful when the class identifies a thrombus as which of the following?
    A) Damage to a blood vessel
    B) Formation of a blood clot
    C) Cessation of bleeding
    D) Coagulation cascade
    Ans: B
    Feedback:
    A thrombus refers to the formation of a blood clot, sometimes from damage, in a vessel that impedes blood flow. Cessation of bleeding refers to hemostasis. The coagulation cascade is the series of events that occur in the formation of a blood clot to stop bleeding.

26. A nurse is reviewing a journal article about antiplatelet agents. Which of the following would the nurse expect to be discussed? Select all that apply.
    A) Heparin
    B) Warfarin
    C) Abciximab
    D) Anagrelide
    E) Dipyridamole
    Ans: C, D, E
    Feedback:
    Abciximab, anagrelide, and dipyridamole are antiplatelet agents. Heparin and warfarin are anticoagulants.

27. A client taking warfarin asks the nurse about using herbal remedies. Which of the following would the nurse instruct the client to avoid? Select all that apply.
    A) Chamomile
    B) St. John's wort
    C) Ginkgo biloba
    D) Ginger
    E) Ginseng
    Ans: A, B, C, D, E
    Feedback:
    Warfarin, a drug with a narrow therapeutic index, has the potential to interact with many herbal remedies. For example, warfarin should not be combined with any of the following substances, because they may have additive or synergistic activity and increase the risk for bleeding: celery, chamomile, clove, dong quai, feverfew, garlic, ginger, ginkgo biloba, ginseng, green tea, onion, passionflower, red clover, St. John's wort, and turmeric.

28. A client is experiencing an overdosage of heparin. The nurse would expect to administer which of the following?
    A) Vitamin K_1
    B) Protamine
    C) Ticlopidine
    D) Tenecteplase
    Ans: B
    Feedback:
    Heparin overdosage is treated with protamine. Vitamin K_1 is used to treat overdoses of warfarin. Ticlopidine, an antiplatelet drug, and tenecteplase, a thrombolytic, would have no effect on counteracting the effects of warfarin.

1. A nurse is preparing to administer a prescribed cardiotonic to a client. The nurse understands that the drug is being administered to achieve which of the following? Select all that apply.
   A) Improved myocardial contractility
   B) Increased myocardial efficiency
   C) Increased blood pressure
   D) Increased peripheral edema
   E) Improved profusion to all body tissues
   Ans: A, B, E
   Feedback:
   Cardiotonics are drugs used to increase the efficiency and improve the contraction of the heart muscle, which leads to improved blood flow to all tissues of the body.

2. A nursing instructor is conducting a class on heart failure and the events that occur. The instructor describes which of the following as a result of increases in neurohormonal activity that occur with heart failure? Select all that apply.
   A) Decreased secretion of catecholamines
   B) Remodeling of the cardiac muscle cells
   C) Hypertrophy of the heart
   D) Increased need for oxygen
   E) Cardiac necrosis
   Ans: B, C, D, E
   Feedback:
   Increased catecholamines lead to increases in neurohormonal activity that cause remodeling of the cardiac muscle cells, leading to hypertrophy of the heart, increased need for oxygen, and cardiac necrosis, which worsen the heart failure.

3. A client is prescribed a cardiotonic drug. The nurse would expect to administer which of the following in conjunction with this drug as part of the treatment for heart failure? Select all that apply.
   A) Loop diuretics
   B) Angiotensin-converting enzyme inhibitors (ACEIs)
   C) Thiazide diuretics
   D) Calcium channel blockers
   E) Beta blockers
   Ans: A, B, E
   Feedback:
   Cardiotonic drugs are used in clients with persistent symptoms, with recurrent hospitalization, or as indicated in conjunction with ACEIs, loop diuretics, and beta blockers in clients with heart failure.

4. After receiving a loading dose of milrinone (Primacor), the nurse would assess the client for which of the following as most likely? Select all that apply.
   A) Hypertension
   B) Angina
   C) Hyperkalemia
   D) Headache
   E) Insomnia
   Ans: B, D
   Feedback:
   The adverse reactions most likely to occur after the administration of milrinone (Primacor) to a client are ventricular arrhythmias, hypotension, angina, chest pain, headache, and hypokalemia.

5. The nurse is assessing a client diagnosed with left ventricular dysfunction. Which of the following would the nurse most likely assess? Select all that apply.
   A) Dyspnea
   B) Moist cough
   C) Restlessness
   D) Peripheral edema
   E) Neck vein distention
   Ans: A, B, C
   Feedback:
   The symptoms of left ventricular dysfunction include dyspnea; moist cough; production of frothy, pink sputum; orthopnea; restlessness; and anxiety. Right-sided failure (right ventricular dysfunction) can be seen with fluid backup in the body such as distended neck veins, peripheral edema, and hepatic engorgement.

6. When reviewing the medical record of a client who is prescribed a cardiotonic, which condition would lead the nurse to contact the primary health care provider because the drug is contraindicated for use? Select all that apply.
   A) Digitalis toxicity
   B) Hypertension
   C) Cardiac tamponade
   D) Hypotension
   E) Ventricular tachycardia
   Ans: A, C, E
   Feedback:
   The cardiotonics are contraindicated in the presence of digitalis toxicity and in clients with known drug hypersensitivity, ventricular tachycardia, cardiac tamponade, restrictive cardiomyopathy, or AV block.

7. A nurse would administer the prescribed digoxin (Lanoxin) cautiously for a client with which electrolyte imbalances? Select all that apply.
   A) Hypokalemia
   B) Hypermagnesemia
   C) Hypocalcemia
   D) Hyperkalemia
   E) Hypomagnesemia
   Ans: A, C, E
   Feedback:
   The cardiotonic drugs are given cautiously to clients with electrolyte imbalances (especially hypokalemia, hypocalcemia, and hypomagnesemia).

8. Before administering a cardiotonic drug to a client, which of the following would be most important for the nurse to assess? Select all that apply.
   A) Apical-radial pulse rate
   B) Respiratory rate
   C) Urinalysis
   D) Weight measurement
   E) Blood pressure
   Ans: A, B, D, E
   Feedback:
   Preadministration physical assessment should include assessment of the apical-radial pulse rate, respiratory rate, weight, and blood pressure to establish a baseline for comparison. Assessing the client's urine is not required.

9. Before administering a cardiotonic drug, the nurse would expect which of the following laboratory tests to be completed? Select all that apply.
   A) Liver function tests
   B) Renal function tests
   C) Complete blood count
   D) Electrolyte levels
   E) Blood glucose
   Ans: A, B, C, D
   Feedback:
   Liver function tests, renal function tests, complete blood count with the addition of serum electrolytes, and an electrocardiogram complete the lab workup prior to initiating therapy with a cardiotonic drug. It is not necessary to obtain serum blood glucose, but it might appear with other lab work that has been gathered.

10. A client is receiving maintenance therapy with digoxin. The nurse understands that which form would be used? Select all that apply.
    A) Capsule
    B) Injection
    C) Ointment
    D) Patch
    E) Tablet
    Ans: A, E
    Feedback:
    Capsules and tablets are used for maintenance therapy, injections are used for rapid digitalization, and digoxin patches and ointment do not exist.

11. After teaching a group of nursing students about digoxin, the instructor determines that the teaching was successful when the students identify which of the following as true regarding the monitoring of plasma digoxin levels? Select all that apply.
    A) Levels should be drawn immediately after the dose.
    B) Levels should be drawn immediately before the next dose.
    C) Levels should be drawn 6 to 8 hours after the last dose.
    D) Levels of greater than 2 ng/mL are considered toxic.
    E) Levels are considered therapeutic between 0.5 and 1.5 ng/mL.
    Ans: B, C, D
    Feedback:
    Digoxin blood plasma level measurements should be drawn immediately before the next dose or 6 to 8 hours after the last dose regardless of route. Therapeutic digoxin levels are between 0.8 and 2 ng/mL. Plasma digoxin levels greater than 2 ng/mL are considered toxic and are reported to the physician.

12. A nurse is preparing to administer a cardiotonic drug via IM injection based on the understanding of which of the following about this route? Select all that apply.
    A) Appropriate when IV access is not available
    B) Site massage necessary after injection
    C) Not the recommended parenteral route
    D) Amount given no more than 2 mL
    E) Injection deep into the muscle
    Ans: A, B, D, E
    Feedback:
    IM injection is not recommended for cardiotonic drugs yet, but they may be given as an IM injection when needed urgently and no IV access is available. When administering a cardiotonic drug IM, the nurse should give the injection deep in the muscle and follow with massage to the site. No more than 2 mL should be injected IM.

13. Which of the following is true with regard to oral administration of cardiotonic drugs? Select all that apply.
    A) Capsule doses are less absorbed.
    B) Alternating between oral dosage forms is avoided.
    C) Tablets can be crushed and mixed with food or fluids.
    D) Oral dosage forms can be administered without regard to meals.
    E) The recommended dosage of the capsules is 80% more than that of tablets.
    Ans: B, C, D
    Feedback:
    Oral preparations can be given without regard to meals. Tablets can be crushed and mixed with food or fluids if the patient has difficulty swallowing. Do not alternate between the dosage forms (i.e., tablets and capsules); these dosages are not the same. Owing to better absorption, the recommended dosage of the capsules is 80% of the dosage for tablets and elixir.

14. To help control the nausea and anorexia that may occur as an adverse reaction during digoxin therapy, the nurse should recommend which of the following? Select all that apply.
    A) Eating frequent smaller meals
    B) Restricting fluids at mealtime
    C) Maintaining good oral hygiene
    D) Eating more protein
    E) Avoiding fluid intake 1 hour before and after meals
    Ans: A, B, C, E
    Feedback:
    If the nausea or anorexia is not a result of toxicity but an adverse reaction to the drug, use nursing measures to help control the reactions. Offer frequent small meals rather than three large meals. Restricting fluids at meals and avoiding fluids 1 hour before and after meals help to control nausea. Helping the patient to maintain good oral hygiene by brushing teeth or rinsing the mouth after ingesting food will also help with nausea.

15. The nurse should educate the client to avoid which of the following nonprescription medications without permission from the physician, as they can interfere with the action of cardiotonic drugs? Select all that apply.
    A) Antacids
    B) Antidiarrheals
    C) Topical arthritis treatments
    D) Artificial tear products
    E) Allergy products
    Ans: A, B, E
    Feedback:
    The nurse should teach the client to avoid antacids and nonprescription cough, cold, allergy, antidiarrheal, and diet drugs unless their use has been approved by the physician, as some of these drugs interfere with the action of cardiotonic drugs or cause other potentially serious problems.

16. A nurse checks the serum digoxin level of a client and finds it to be increased. Which of the following would the nurse identify as possibly associated with this increase?
    A) Colestipol (Colestid)
    B) Verapamil (Calan)
    C) Clarithromycin (Biaxin)
    D) Calcium carbonate (Maalox)
    E) Spironolactone (Aldactone)
    Ans: B, C, E
    Feedback:
    Increased serum digoxin levels can occur with verapamil, clarithromycin, and spironolactone. Antacids, such as calcium carbonate, and colestipol cause a decrease in serum digoxin levels.

17. A client has been admitted to a health care center with complaints of dyspnea. The nurse suspects left-sided heart failure based on assessment of which of the following?
    A) Nocturia
    B) Pitting edema
    C) Weight gain
    D) Orthopnea
    Ans: D
    Feedback:
    The nurse should assess for orthopnea in clients with left-sided heart failure. Orthopnea is a condition where the client experiences difficulty in breathing on lying down. The other features of left ventricular failure include a hacking cough or wheezing, restlessness, and anxiety. Nocturia, pitting edema, and weight gain are associated with right-sided heart failure.

18. A nurse is monitoring a client who is prescribed milrinone for heart failure. The nurse determines that the client is experiencing an adverse reaction based on assessment of which of the following?
    A) Edema
    B) Hypotension
    C) Bradycardia
    D) Cyanosis
    Ans: B
    Feedback:
    When caring for clients taking milrinone, the development of hypotension indicates an adverse reaction. Edema and cyanosis need to be assessed by the nurse as part of the preadministration assessment. Edema, bradycardia, and cyanosis are not adverse reactions associated with milrinone.

19. When caring for a client who has been digitalized for his heart failure, the nurse observes that the client is experiencing bradycardia. Which of the following would the nurse expect the primary health care provider to prescribe for the client's bradycardia?
    A) Atropine
    B) Cholestyramine
    C) Furosemide
    D) Milrinone
    Ans: A
    Feedback:
    Atropine should be administered to clients who develop bradycardia. Bradycardia may be seen in digitalis toxicity. Milrinone is a miscellaneous inotropic used in heart failure. Furosemide is a loop diuretic that can be used as part of the drug therapy regimen for heart failure. Cholestyramine is used to lower blood cholesterol levels. Milrinone, furosemide, and cholestyramine are not used in the treatment of bradycardia.

20. A nurse caring for a client with atrial fibrillation who is started on digoxin therapy is required to monitor plasma drug levels. The nurse would report which level to the primary health care provider?
    A) 1.6 ng/mL
    B) 1.8 ng/mL
    C) 2.0 ng/mL
    D) 2.2 ng/mL
    Ans: D
    Feedback:
    A plasma digoxin level of more than 2 ng/mL would require the nurse to report to the primary health care provider; therefore, plasma digitalis levels of 2.2 ng/mL indicate digoxin toxicity. The therapeutic levels range from 0.5 to 2 ng/mL.

21. A client is prescribed a cardiotonic medication. Which of the following preadministration assessments should the nurse perform on this client?
    A) Inspect joints for swelling.
    B) Check for jugular vein distention.
    C) Inspect skin for rash.
    D) Obtain blood glucose levels.
    Ans: B
    Feedback:
    The nurse should check for jugular vein distention as part of the preadministration assessment for the client prescribed a cardiotonic. The nurse need not inspect joints for swelling, inspect skin for rash, or obtain blood glucose levels as these interventions will not provide necessary information with regard to administration of a cardiotonic.

22. A nurse is required to care for a child, age 4 years, who is being digitalized. Which of the following changes in the pulse rate indicates that the nurse should withhold the drug?
    A) Pulse rate less than 70 beats per minute
    B) Pulse rate less than 80 beats per minute
    C) Pulse rate less than 90 beats per minute
    D) Pulse rate more than 100 beats per minute
    Ans: A
    Feedback:
    In a child, a pulse rate less than 70 beats per minute indicates toxicity. The nurse should withhold the drug when the pulse rate is less than 70 beats per minute and notify the health care provider. A pulse rate less than 60 or more than 100 beats per minute indicates toxicity in adults. A pulse rate less than 90 beats per minute indicates toxicity in infants.

23. A client with heart failure has been digitalized. The client requires long-term digoxin therapy. Which of the following instructions should the nurse provide the client on discharge?
    A) Take the drug with high-fiber meals.
    B) Report to the center if the pulse is less than 70 bpm.
    C) Take antacids promptly to avoid gastric problems.
    D) Take the drug regularly without skipping a dose.
    Ans: D
    Feedback:
    The nurse should instruct the client to take the drug regularly without skipping a dose. The client should consult the provider before discontinuing the drug. Taking the drug with high-fiber meals will decrease the absorption of the drug. The client should be advised to report to the center if the pulse is less than 60 bpm. Antacids should not be taken as they alter the plasma digoxin levels.

24. When educating a group of nursing students on the signs of heart failure, the nurse mentions that the ejection fraction is altered in heart failure. The students demonstrate understanding of the information when they identify which ejection fraction as suggesting heart failure?
    A) 38%
    B) 48%
    C) 58%
    D) 68%
    Ans: A
    Feedback:
    The ejection fraction is the amount of blood that is ejected from the ventricles per beat in relation to the amount of blood available to eject. An ejection fraction of less than 40% indicates heart failure. Normally the ejection fraction should be greater than 60%.

25. The nurse is caring for a client receiving a cardiotonic drug. The client has edema. Which assessment would be most important?
    A) Auscultation of bowel sounds
    B) Measurement of intake and output
    C) Observation of respiratory rate
    D) Observation of pulse rate
    Ans: B
    Feedback:
    Measurement of intake and output would be most important for the client with edema who is receiving a cardiotonic drug. Auscultation of bowel sounds, observation of respiratory rate, and observation of pulse rate are interventions not related to edema in the client.

26. A client is prescribed digoxin IV as a loading dose. The nurse would expect to administer the drug over which time frame?
    A) 30 seconds
    B) 2 minutes
    C) 5 minutes
    D) 30 minutes
    Ans: C
    Feedback:
    When a cardiotonic drug is given IV, it is administered slowly (over at least 5 minutes), and the administration site is assessed for redness or infiltration.

27. A client comes to the clinic for a visit. The client has been taking digoxin for several months. While interviewing the client, the nurse suspects the client is experiencing digoxin toxicity based on which of the following? Select all that apply.
    A) Anorexia
    B) Weakness
    C) Inability to relax
    D) Photosensitivity
    E) Disorientation
    Ans: A, B, E
    Feedback:
    Signs of digitalis toxicity include anorexia, weakness, lethargy, blurred vision, and disorientation. An inability to relax and photosensitivity are not associated with digitalis toxicity.

28. A client receives his prescribed daily digoxin at 9 a.m. today. The nurse would expect to obtain a serum drug level at which time?
    A) 12 noon today
    B) 4 p.m. today
    C) 9 p.m. tonight
    D) 12 midnight
    Ans: B
    Feedback:
    Blood for plasma level measurements should be drawn immediately before the next dose or 6 to 8 hours after the last dose regardless of route. For this client, that would be between 3 p.m. and 5 p.m. today or immediately before his dose tomorrow.

29. A client comes to the clinic complaining of weakness and drowsiness. He states, "I just get so tired sometimes that I can't do what I want to do." The client is receiving digoxin as part of the treatment for heart failure. Which nursing diagnosis would the nurse most likely identify?
    A) Risk for Injury
    B) Activity Intolerance
    C) Decreased Cardiac Output
    D) Imbalanced Nutrition: Less Than Body Requirements
    Ans: B
    Feedback:
    Based on the client's statement and complaints, the nurse would most likely identify a nursing diagnosis of Activity Intolerance. Risk for Injury might be appropriate if the client complained of dizziness or if his complaints affected his ambulation. There is no evidence to support a nursing diagnosis of Decreased Cardiac Output or Imbalanced Nutrition.

30. After teaching a client about his prescribed cardiotonic drug therapy, the nurse determines that additional teaching is needed when the client states which of the following?
    A) "I will take the drug at the same time each day."
    B) "I can crush the tablet and mix it with food."
    C) "I should call if my pulse rate is below 80 beats per minute."
    D) "I need to notify my doctor if I have blurred vision."
    Ans: C
    Feedback:
    The client should call the primary health care provider if his pulse rate is below 60 beats per minute or above 100 beats per minute. The client should take the drug at the same time each day, crush the tablet and mix with food, and notify the primary health care provider if blurred vision occurs.

1. When describing arrhythmias to a group of nursing students, the instructor explains that arrhythmias may be triggered by which of the following? Select all that apply.
   A) Emotional stress
   B) Heart disease
   C) Electrolyte imbalance
   D) Diabetes
   E) Hypoxia
   Ans: A, B, C, E
   Feedback:
   Arrhythmias may occur as a result of heart disease, a disorder that affects cardiovascular function, emotional stress, hypoxia, and electrolyte imbalances.

2. A nurse is reading a journal article about propranolol. Which of the following would the nurse expect to find discussed? Select all that apply.
   A) Is a class III antiarrhythmic
   B) Acts by blocking beta-adrenergic receptors of the heart and kidney
   C) Reduces the release of renin
   D) Increases excitability of the heart
   E) Has membrane-stabilizing effects
   Ans: B, C, E
   Feedback:
   Propranolol (Inderal) is a class II antiarrhythmic that acts by blocking beta-adrenergic receptors of the heart and kidney, reducing the influence of the sympathetic nervous system on these areas, decreasing the excitability of the heart and the release of renin. Propranolol also has membrane-stabilizing effects.

3. When explaining how verapamil (Calan) produces its effects on the cardiovascular system, which of the following would the nurse integrate into the explanation? Select all that apply.
   A) Reduction in the release of renin
   B) Dilation of coronary arteries
   C) Dilation of peripheral arteries
   D) Slowed conduction through the SA and AV nodes
   E) Membrane-stabilizing effects
   Ans: B, C, D
   Feedback:
   Verapamil (Calan) is a calcium channel blocker. These drugs inhibit the movement of calcium through channels across the myocardial cell membranes and vascular smooth muscle. Cardiac and vascular smooth muscle depends on the movement of calcium ions into the muscle cells through specific ion channels. When this movement is inhibited, the coronary and peripheral arteries dilate, thereby decreasing the force of cardiac contraction. This drug also reduces heart rate by slowing conduction through the SA and AV nodes.

4. A nurse would administer disopyramide cautiously to a client with which condition? Select all that apply.
   A) Myasthenia gravis
   B) Diabetes
   C) Glaucoma
   D) Urinary retention
   E) Hypothyroidism
   Ans: A, C, D
   Feedback:
   Disopyramide is used cautiously in clients with myasthenia gravis, urinary retention, or glaucoma and in men with prostate enlargement.

5. Before administering any antiarrhythmic, the nurse would assess which of the following? Select all that apply.
   A) Skin color
   B) Blood glucose
   C) Input and output
   D) Orientation
   E) Level of consciousness
   Ans: A, D, E
   Feedback:
   The preadministration assessment of the client's general condition should include observations such as skin color, orientation, level of consciousness, and the client's general status.

6. After administering an antiarrhythmic drug, the nurse would report which of the following electrocardiogram (ECG) changes to the physician? Select all that apply.
   A) Tachycardia
   B) Prolongation of PR interval
   C) Prolongation of QT interval
   D) Widening of the QRS complex
   E) Bradycardia
   Ans: A, B, C, D, E
   Feedback:
   The nurse reports to the physician any abnormalities or significant interval changes of the ECG, including tachycardia, prolongation of the PR interval or QT interval, widening of the QRS complex, or bradycardia.

7. Which of the following is important for the nurse to remember when administering quinidine (Quinaglute) orally? Select all that apply.
   A) Quinidine can be administered with food to decrease GI upset.
   B) Quinidine can cause auditory adverse reactions.
   C) Quinidine can be crushed or chewed.
   D) Normal quinidine levels are between 7 and 10 mcg/mL.
   E) Quinidine levels must be monitored during therapy.
   Ans: A, B, E
   Feedback:
   Quinidine can be administered with food to decrease GI upset and can cause ringing in the ears and hearing loss. Levels should be monitored during therapy to reduce the risk of quinidine toxicity. Quinidine should not be crushed or chewed, and normal quinidine levels are less than 6 mcg/mL.

8. The nurse should monitor a client receiving lidocaine (Xylocaine) IV closely for which of the following? Select all that apply.
   A) Heartburn
   B) Apprehension
   C) Hypotension
   D) Auditory changes
   E) Bradycardia
   Ans: B, C, E
   Feedback:
   The nurse must observe the client closely for signs of apprehension, hypotension, and bradycardia. Auditory changes are seen with quinidine, not lidocaine. Heartburn is associated with mexiletine.

9. Which of the following should be included in the nurse's ongoing assessment of a client receiving flecainide (Tambocor)? Select all that apply.
   A) Response to therapy
   B) Signs of heart failure
   C) Development of new cardiac arrhythmias
   D) Worsening of arrhythmia being treated
   E) Monitoring of serum flecainide levels
   Ans: A, B, C, D, E
   Feedback:
   The nurse should closely monitor the client for a response to drug therapy, signs of heart failure, the development of new arrhythmias, worsening of the arrhythmia being treated, and serum flecainide levels.

10. When discussing class IB antiarrhythmics, which of the following would the nurse identify as an effect? Select all that apply.
    A) Shortening of the action potential duration
    B) Depression of cardiac conduction
    C) Prolongation of the action potential
    D) Slowing of repolarization
    E) Increase in cardiac conduction
    Ans: A, B
    Feedback:
    Class IB antiarrhythmics shorten the action potential and selectively depress cardiac conduction.

11. A nurse assesses the results of a client's complete blood count, observing for agranulocytosis for a client receiving which antiarrhythmic? Select all that apply.
    A) Verapamil (Calan)
    B) Lidocaine (Xylocaine)
    C) Sotalol (Betapace)
    D) Quinidine (Quinaglute)
    E) Mexiletine (Mexitil)
    Ans: A, D, E
    Feedback:
    Agranulocytosis has been reported with the use of verapamil, quinidine, and mexiletine.

12. After teaching a group of nursing students about antiarrhythmics, the instructor determines that the teaching was successful when the students identify which of the following as a class IA antiarrhythmic? Select all that apply.
    A) Quinidine (Quinaglute)
    B) Lidocaine (Xylocaine)
    C) Propafenone (Rythmol)
    D) Disopyramide (Norpace)
    E) Flecainide (Tambocor)
    Ans: A, D
    Feedback:
    Class IA antiarrhythmics include disopyramide and quinidine. Lidocaine is a class IB drug. Propafenone and flecainide are class IC drugs.

13. Administration with which of the following would increase serum concentrations of disopyramide? Select all that apply.
    A) Amiodarone
    B) Quinidine
    C) Rifampin
    D) Cimetidine
    E) Erythromycin
    Ans: B, E
    Feedback:
    Increased serum disopyramide levels occur when quinidine or erythromycin is given with disopyramide. Amiodarone and cimetidine increase serum flecainide levels. Rifampin decreases serum disopyramide levels.

14. When evaluating a client who is receiving antiarrhythmic therapy, which of the following would the nurse interpret as an expected outcome? Select all that apply.
    A) No evidence of injury is seen.
    B) No evidence of infection is seen.
    C) Client is free of nausea.
    D) Client urinates adequately.
    E) Oral mucous membranes are intact and moist.
    Ans: A, B, C, D, E
    Feedback:
    Absence of injury, infection, and nausea; adequate renal function; and intact, moist oral mucous membranes are expected outcomes for antiarrhythmic therapy.

15. A client with cardiac arrhythmia is prescribed verapamil. The nurse would instruct the client about which of the following as a possible adverse reaction?
    A) Diarrhea
    B) Hyperactivity
    C) Peripheral edema
    D) Hypertension
    Ans: C
    Feedback:
    The nurse should inform the client that peripheral edema could be an adverse reaction to verapamil therapy. Diarrhea, hyperactivity, and hypertension are not adverse reactions associated with verapamil therapy. Other adverse reactions associated with verapamil are constipation, mental depression, and hypotension.

16. A client with cardiac arrhythmia is prescribed ibutilide IV. The client weighs 63 kg. The nurse would expect to administer the drug over which time frame?
    A) 1 minute
    B) 5 minutes
    C) 10 minutes
    D) 30 minutes
    Ans: C
    Feedback:
    Ibutilide is administered IV over 10 minutes.

17. Quinidine is prescribed to a client with cardiac arrhythmia. When documenting the client's drug history, the nurse inquires about the concomitant use of any other drug. Which of the following drugs when given concomitantly may cause an increase in serum quinidine levels?
    A) Cimetidine
    B) Rifampin
    C) Hydantoins
    D) Nifedipine
    Ans: A
    Feedback:
    Cimetidine, when given concurrently with quinidine, may cause an increase in serum quinidine levels. Hydantoins and nifedipine cause a decrease in serum quinidine levels. Rifampin does not interact with quinidine.

18. A nurse is caring for a client who is prescribed mexiletine for the treatment of a cardiac arrhythmia. Which adverse reaction would lead the nurse to identify a nursing diagnosis of Risk for Infection?
    A) Lightheadedness
    B) Dry mouth
    C) Agranulocytosis
    D) Nausea
    Ans: C
    Feedback:
    A nursing diagnosis of Risk for Infection related to the adverse reaction of the drug may be made in the case of agranulocytosis. Lightheadedness would lead to a nursing diagnosis of Risk for Injury related to the adverse effect of the drug. Dry mouth leads to a nursing diagnosis of Impaired Oral Mucous Membranes related to the adverse effect of the drug. Nausea does not indicate the implementation of the nursing diagnosis of Risk for Infection.

19. A client has been prescribed an antiarrhythmic. Which of the following points should the nurse include in the client teaching plan?
    A) Decrease the dose if adverse effects occur.
    B) Chew the tablets well before swallowing.
    C) Take frequent sips of water or chew gum.
    D) Take the drug only on an empty stomach.
    Ans: C
    Feedback:
    The nurse should instruct the client to take frequent sips of water or chew gum to avoid dryness of the mouth. The nurse should instruct the client not to stop the medication or change the dose and schedule without consulting the health care provider. The tablets should not be chewed or crushed. They should be swallowed whole. Taking the drug on an empty stomach may cause gastric upset. The drug should be taken with food.

20. A client on antiarrhythmic drug therapy complains of nausea, vomiting, abdominal pain, diarrhea, and a ringing sensation in the ears. Which of the following drugs should the nurse consider as the possible cause?
    A) Lidocaine
    B) Quinidine
    C) Flecainide
    D) Procainamide
    Ans: B
    Feedback:
    The nurse should consider the drug quinidine as the cause for these adverse reactions. Quinidine toxicity is called cinchonism. Some of its symptoms include ringing in the ears (tinnitus), hearing loss, headache, nausea, vomiting, abdominal pain, dizziness, vertigo, and lightheadedness. Lidocaine, flecainide, and procainamide do not cause tinnitus or hearing loss.

21. A client admitted to a health care facility with cardiac arrhythmia is prescribed propranolol. Which of the following would the nurse closely monitor as part of the ongoing assessment during the therapy?
    A) Pulse rate
    B) Tendon reflexes
    C) Hydration
    D) Visual acuity
    Ans: A
    Feedback:
    During antiarrhythmic drug therapy, the nurse should closely monitor the client's pulse rate. A change in the pulse rate and rhythm will help the nurse assess a response to drug therapy, the development of signs of heart failure, the development of a new cardiac arrhythmia, or worsening of the arrhythmia being treated. It is not necessary to monitor the tendon reflexes, hydration, or visual acuity when administering an antiarrhythmic drug to the client.

22. A nurse is caring for a client receiving an oral antiarrhythmic drug. Which apical pulse rate would lead the nurse to withhold the drug and notify the health care provider immediately?
    A) 58 beats/min
    B) 68 beats/min
    C) 78 beats/min
    D) 88 beats/min
    Ans: A
    Feedback:
    The nurse should withhold the drug and report to the primary health care provider whenever the client's pulse rate falls below 60 beats/min or rises to more than 120 beats/min. Pulse rates of 68 beats/min, 78 beats/min, and 88 beats/min fall within the normal range.

23. A client is admitted to the cardiology unit of a health care facility for ventricular arrhythmia. In which of the following conditions can an antiarrhythmic drug be safely administered?
    A) Aortic stenosis
    B) Premature ventricular contraction
    C) Third-degree heart block
    D) Severe heart failure
    Ans: B
    Feedback:
    The nurse can safely administer an antiarrhythmic drug if the client has premature ventricular contractions. Aortic stenosis, third-degree heart block, and severe congestive heart failure are contraindications for the use of antiarrhythmic drugs.

24. When educating a group of nursing students on the mechanism of action of various antiarrhythmic drugs, the nurse identifies which of the following drugs as inhibiting the beta-adrenergic receptors of the heart and kidney?
    A) Propafenone
    B) Amiodarone
    C) Disopyramide
    D) Acebutolol
    Ans: D
    Feedback:
    The nurse should inform the nursing students that acebutolol acts by inhibiting the beta-adrenergic receptors of the heart and kidney. Propafenone and amiodarone appear to act directly on the cardiac cell membrane, and *not* on the beta-adrenergic receptors of the heart and kidney. Disopyramide acts by decreasing the depolarization of the myocardial fibers, and not the beta-adrenergic receptors of the heart and kidney.

25. A nurse is preparing to administer an antiarrhythmic and identifies the drug as a class III potassium channel blocker. Which drug would the nurse be most likely to administer?
    A) Amiodarone
    B) Flecainide
    C) Mexiletine
    D) Propafenone
    Ans: A
    Feedback:
    Amiodarone is a class III potassium channel blocker. Flecainide, mexiletine, and propafenone are class I sodium channel blockers.

26. A client is diagnosed with an arrhythmia that involves irregular and rapid atrial contraction and an irregular and inefficient ventricular contraction. The nurse interprets this arrhythmia as which of the following?
    A) Atrial flutter
    B) Atrial fibrillation
    C) Ventricular tachycardia
    D) Ventricular fibrillation
    Ans: B
    Feedback:
    Atrial fibrillation is characterized by irregular and rapid atrial contraction, resulting in a quivering of the atria and causing an irregular and inefficient ventricular contraction. Atrial flutter is the rapid contraction of the atria at a rate too rapid for the ventricle to pump efficiently. Ventricular tachycardia is a rapid heartbeat with a rate greater than 100 bpm. Ventricular fibrillation is rapid, disorganized contractions of the ventricles, resulting in the inability of the heart to pump any blood to the body.

27. A nurse is reviewing a journal article about class IA antiarrhythmics. The article describes a drug that decreases depolarization and prolongs the refractory period. The nurse is most likely reading an article about which drug?
    A) Quinidine
    B) Lidocaine
    C) Disopyramide
    D) Flecainide
    Ans: C
    Feedback:
    Disopyramide (Norpace) decreases depolarization of myocardial fibers, prolongs the refractory period, and increases the action potential duration of cardiac cells. Lidocaine (Xylocaine) decreases diastolic depolarization, decreases automaticity of ventricular cells, and raises the threshold of the ventricular myocardium. Quinidine depresses myocardial excitability or the ability of the myocardium to respond to an electrical stimulus. Flecainide (Tambocor) depresses fast sodium channels, decreases the height and rate of rise of action potentials, and slows conduction of all areas of the heart.

28. A client receiving antiarrhythmic therapy develops a new arrhythmia due to the administration of the drug. The nurse documents this as which of the following?
    A) Cinchonism
    B) Refractory period
    C) Proarrhythmic effect
    D) Action potential
    Ans: C
    Feedback:
    The development of a new arrhythmia due to drug administration is referred to as a proarrhythmic effect. Cinchonism refers to quinidine toxicity. Refractory period refers to the quiet period between the transmission of nerve impulses along a nerve fiber. Action potential refers to the electrical impulse that passes from cell to cell in the myocardium of the heart and stimulates the fibers to shorten, causing heart muscles to contract.

29. The nurse identifies a nursing diagnosis of Nausea secondary to the effects of antiarrhythmic therapy. Which of the following would the nurse include in the client's plan of care? Select all that apply.
    A) Administering the drug with food
    B) Having the client lie flat for 2 hours after eating
    C) Scanning the client's bladder for distention
    D) Offering small, frequent meals
    E) Encouraging gradual position changes

    Ans: A, D

    Feedback:

    To combat nausea, the nurse would administer the drug with food and offer the client small, frequent meals. The nurse would encourage the client to keep his head at least 4 inches higher than his feet when resting or reclining. Scanning for bladder distention would be appropriate if the client experienced urinary retention. Encouraging gradual position changes would be appropriate for the client at risk for injury from dizziness or lightheadedness.

1. Which of the following antacids may have a laxative effect and should be used cautiously in clients who have chronic diarrhea? Select all that apply.
   A) Calcium carbonate (Mylanta)
   B) Magnesium hydroxide (Milk of Magnesia)
   C) Magnesium oxide (Mag-Ox)
   D) Aluminum hydroxide (ALternaGEL)
   E) Sodium bicarbonate (Bell/ans)
   Ans: B, C, E
   Feedback:
   The magnesium- and sodium-containing antacids may have a laxative effect and may produce diarrhea. Aluminum- and calcium-containing antacids tend to produce constipation.

2. Which of the following antacids may produce constipation and should be used cautiously in clients who have chronic constipation? Select all that apply.
   A) Calcium carbonate (Mylanta)
   B) Magnesium hydroxide (Milk of Magnesia)
   C) Magnesium oxide (Mag-Ox)
   D) Aluminum hydroxide (ALternaGEL)
   E) Sodium bicarbonate (Bell/ans)
   Ans: A, D
   Feedback:
   The aluminum- and calcium-containing antacids may produce constipation. Magnesium- and sodium-containing antacids tend to have a laxative effect.

3. A nurse educating a client on the antacid aluminum hydroxide (ALternaGEL) should warn the client about which of the following adverse reactions? Select all that apply.
   A) Alopecia
   B) Anorexia
   C) Diarrhea
   D) Tremors
   E) Bone pain
   Ans: B, D, E
   Feedback:
   Adverse reactions of aluminum hydroxide (ALternaGEL) include constipation, intestinal impaction, anorexia, weakness, tremors, and bone pain.

4. A nurse educating a client on the antacid magnesium oxide (Mag-Ox) should warn the client of which of the following adverse reactions? Select all that apply.
   A) Tremors
   B) Anorexia
   C) Diarrhea
   D) Dehydration
   E) Hypotension
   Ans: C, D, E
   Feedback:
   Adverse reactions of magnesium oxide (Mag-Ox) include severe diarrhea, dehydration, and hypermagnesemia (nausea, vomiting, hypotension, and decreased respirations).

5. A nurse educating a client on the antacid calcium carbonate (Mylanta) should warn the client of which of the following adverse reactions? Select all that apply.
   A) Rebound hyperacidity
   B) Anorexia
   C) Headache
   D) Dehydration
   E) Confusion
   Ans: A, C, E
   Feedback:
   Adverse reactions of calcium carbonate (Mylanta) include rebound hyperacidity, metabolic alkalosis, hypercalcemia, vomiting, confusion, headache, renal calculi, and neurologic impairment.

6. At a yearly physical examination, a client asks the nurse if it would be okay to take ginger to aid with digestion. Before telling the client it is okay to take ginger, which medical conditions should the nurse make sure the client does not have? Select all that apply.
   A) Hypertension
   B) Kidney stones
   C) Vitamin B_{12} deficiency
   D) Gallstones
   E) Liver disease
   Ans: A, D
   Feedback:
   Ginger should be used cautiously in clients with hypertension or gallstones and during pregnancy and lactation.

7. After teaching a group of nursing students about upper gastrointestinal system drugs, the instructor determines that the teaching was successful when the students identify which of the following as a gastrointestinal stimulant?
   A) Ranitidine (Zantac)
   B) Misoprostol (Cytotec)
   C) Omeprazole (Prilosec)
   D) Metoclopramide (Reglan)
   Ans: D
   Feedback:
   Metoclopramide (Reglan) is classified as a gastrointestinal stimulant. Ranitidine is a histamine-2 receptor antagonist. Omeprazole is a proton pump inhibitor. Misoprostol is a miscellaneous acid reducer.

8. A nurse should recognize that administering antacids to clients taking which of the following medications can result in decreased drug absorption and decreased drug effects? Select all that apply.
   A) Simvastatin (Zocor)
   B) Isoniazid (Nydrazid)
   C) Digoxin (Lanoxin)
   D) Phenytoin (Dilantin)
   E) Enalapril (Vasotec)
   Ans: B, C, D
   Feedback:
   Antacids decrease the absorption of digoxin, isoniazid, phenytoin, and chlorpromazine, leading to decreased effect of those drugs.

9. A client is diagnosed with an infection with *H. pylori*. Which of the following drugs are commonly used in combination with certain antibiotics in the treatment of this infection? Select all that apply.
   A) Metoclopramide (Reglan)
   B) Omeprazole (Prilosec)
   C) Ondansetron (Zofran)
   D) Lansoprazole (Prevacid)
   E) Promethazine (Phenergan)
   Ans: B, D
   Feedback:
   The proton pump inhibitors, like omeprazole (Prilosec) and lansoprazole (Prevacid), are commonly used in combination with certain antibiotics in the treatment of *H. pylori*.

10. The nurse should administer which of the following medications cautiously to clients with vitamin B_{12} deficiency as the prolonged use of these drugs decreases the body's ability to absorb vitamin B_{12}? Select all that apply.
    A) Metoclopramide (Reglan)
    B) Rabeprazole (AcipHex)
    C) Sucralfate (Carafate)
    D) Pantoprazole (Protonix)
    E) Promethazine (Phenergan)
    Ans: B, D
    Feedback:
    The nurse should administer proton pump inhibitors, like rabeprazole (AcipHex) and pantoprazole (Protonix), cautiously to clients with vitamin B_{12} deficiency as the prolonged use of these drugs decreases the body's ability to absorb vitamin B_{12}.

11. A nurse should monitor a client taking which of the following drugs for increased adverse effects and toxicity if omeprazole (Prilosec) therapy is initiated? Select all that apply.
    A) Phenobarbital (Luminal)
    B) Digoxin (Lanoxin)
    C) Diazepam (Valium)
    D) Warfarin (Coumadin)
    E) Ketoconazole (Nizoral)
    Ans: B, C, D
    Feedback:
    The initiation of proton pump inhibitors, like omeprazole (Prilosec), can result in increased adverse reactions and toxicities of warfarin (Coumadin), benzodiazepines (diazepam), digoxin (Lanoxin), phenytoin (Dilantin), and clarithromycin (Biaxin).

12. When describing the action of which drug would the nurse explain that it works to reduce gastric motility and decrease the amount of acid secreted by the stomach via blockade of cholinergic receptors? Select all that apply.
    A) Omeprazole (Prilosec)
    B) Ranitidine (Zantac)
    C) Propantheline (Pro-Banthine)
    D) Sucralfate (Carafate)
    E) Glycopyrrolate (Robinul)
    Ans: C, E
    Feedback:
    Propantheline (Pro-Banthine) and glycopyrrolate (Robinul) are anticholinergic drugs used to reduce gastric motility and decrease the amount of acid secreted by the stomach via blockade of cholinergic receptors.

13. A nurse is conducting a class for a community group. As part of the class, the nurse is explaining the use of syrup of ipecac. The nurse would emphasize that this drug is contraindicated in which of the following cases? Select all that apply.
    A) The client is comatose or has altered mental status.
    B) The client has erosive esophagitis.
    C) The client is having seizures.
    D) The substance is a caustic or corrosive agent.
    E) The substance is a low-viscosity petroleum distillate.
    Ans: A, C, D, E
    Feedback:
    The use of syrup of ipecac is contraindicated in the following cases: the client is comatose or has altered mental status, the client is having seizures, the substance is a caustic or corrosive agent, the substance is a low-viscosity petroleum distillate, or the substance is capable of also altered mental status or convulsions.

14. Before administering a prescribed emetic, which of the following would the nurse need to assess? Select all that apply.
    A) What chemicals or substances were ingested?
    B) What are the client's current medications?
    C) What time was the substance ingested?
    D) What is the client's blood pressure?
    E) What symptoms were noted before seeking treatment?
    Ans: A, C, E
    Feedback:
    Before an emetic is given, it is extremely important to know the chemicals or substances that have been ingested, the time they were ingested, and what symptoms were noted before seeking medical treatment.

15. A nurse follows a specific protocol when administering which of the following medications to prevent nausea induced by doxorubicin (Adriamycin) administration? Select all that apply.
    A) Lansoprazole (Prevacid)
    B) Ondansetron (Zofran)
    C) Metoclopramide (Reglan)
    D) Promethazine (Phenergan)
    E) Granisetron (Kytril)
    Ans: B, E
    Feedback:
    5-HT3 receptor antagonists, like ondansetron (Zofran) and granisetron (Kytril), are used in the prevention of chemotherapy-induced nausea and vomiting.

16. A client is administered trimethobenzamide hydrochloride (Tigan) to control nausea and vomiting. The nurse would assess the client for which of the following?
    A) Acid rebound
    B) Neurotoxicity
    C) Blurred vision
    D) Bone softening
    Ans: C
    Feedback:
    The nurse should monitor the client for blurred vision as an adverse reaction to the trimethobenzamide hydrochloride (Tigan). The nurse need not monitor the client for acid rebound, neurotoxicity, and bone softening as they are not adverse reactions to trimethobenzamide hydrochloride (Tigan). Acid rebound is an adverse reaction to calcium carbonate. Neurotoxicity and bone softening are adverse reactions to aluminum carbonate gel.

17. A nurse is caring for a client who has been prescribed aluminum carbonate gel (Basaljel) for the relief of an acute peptic ulcer. Which of the following interventions should the nurse perform to promote an optimal response to therapy?
    A) Administer the drug hourly for the first 2 weeks.
    B) Administer the drug early in the morning before breakfast.
    C) Administer the drug with 40 mL of apple juice.
    D) Administer the first dose by IV route and then orally.
    Ans: A
    Feedback:
    The nurse should administer the drug hourly for the first 2 weeks when treating an acute peptic ulcer. The nurse instructs the client to administer the drug 1 to 2 hours after meals and at bedtime after the first 2 weeks. The nurse need not suggest to the client to administer the drug early in the morning before breakfast nor to administer it with apple juice. The drug is not given intravenously.

18. A 30-year-old nonpregnant client is prescribed misoprostol. Which of the following should the nurse instruct the client as part of the teaching plan?
    A) Swallow the tablet 1 hour before eating.
    B) Administer the drug 1 hour before travel.
    C) Do not chew, open, or crush the tablet.
    D) Use a reliable contraceptive method.
    Ans: D
    Feedback:
    The nurse should instruct the client to use a reliable contraceptive method to avoid pregnancy during the course of treatment as it can cause spontaneous abortion. The nurse should instruct the client taking proton pump inhibitors not to chew, open, or crush the tablet and to swallow the tablet whole at least 1 hour before eating. The nurse needs to inform the client taking a drug for motion sickness to administer it about 1 hour before travel.

19. A nurse is caring for a client brought to the health care facility for a drug overdose. In which of the following cases can the client be administered an emetic?
    A) Client's mental status is intact.
    B) Client has an existing condition of severe hypertension.
    C) Client has a medical history of convulsions.
    D) Client has an existing condition of hemorrhagic diathesis.
    Ans: A
    Feedback:
    The client can be administered an emetic only if the client does not have an altered mental status or is not comatose. A client who is comatose has an increased risk of aspiration of stomach contents. Clients with an existing condition of severe hypertension, a medical history of convulsions, or an existing condition of hemorrhagic diathesis should not be given an emetic as these conditions may be exacerbated by vomiting.

20. A nurse is caring for an elderly client who has received cimetidine. Which of the following interventions should the nurse perform?
    A) Monitor the client for complaints of pain or sour taste.
    B) Monitor the client for concentrated urine and restlessness.
    C) Closely monitor the client for confusion and dizziness.
    D) Report symptoms of tardive dyskinesia to the primary health care provider.
    Ans: C
    Feedback:
    The nurse should closely monitor the elderly client who has been administered cimetidine for confusion and dizziness. When the client is receiving an antiemetic, the nurse monitors the client frequently for continued complaints of pain, sour taste, spitting blood, or coffee-ground-colored emesis. When antacids are given to the client, the nurse should observe the client for concentrated urine and restlessness. When the client is administered prolonged doses of metoclopramide, the nurse reports any sign of tardive dyskinesia or extrapyramidal symptoms to the primary health care provider.

21. A client is receiving an antiemetic. The nurse identifies a nursing diagnosis of Imbalanced Nutrition: Less Than Body Requirements. Which of the following would the nurse include in the client's plan of care? Select all that apply.
    A) Remove items with strong smells and odors.
    B) Use mouthwash or frequent oral rinses.
    C) Make the environment as pleasant as possible.
    D) Explain that the drug may change the color of the stool.
    E) Follow the medication with a small amount of water.
    Ans: A, B, C
    Feedback:
    When caring for a client receiving an antiemetic with a nursing diagnosis of Imbalanced Nutrition: Less Than Body Requirements, the nurse makes the environment as pleasant as possible to enhance the client's appetite and removes items with strong smells and odors. The nurse gives the client mouthwash or frequent oral rinses to remove the disagreeable taste that accompanies vomiting. Stool color is unaffected. Liquid antacids could be followed with a small amount of water.

22. A client is taking ginger medicinally for motion sickness. The nurse would urge the client to use caution if the client has which medical condition?
    A) Gallstones
    B) Blood dyscrasia
    C) Parkinson's disease
    D) Severe liver disease
    Ans: A
    Feedback:
    Ginger should be used with caution in clients with hypertension or gallstones and during pregnancy or lactation. Antiemetic prochlorperazine is contraindicated in clients with blood dyscrasia, Parkinson's disease, and severe liver disease.

23. A nurse is caring for a client who is prescribed omeprazole for a duodenal ulcer. The client is also taking benzodiazepines for the management of a seizure disorder. The nurse would assess the client for which of the following?
    A) Decreased absorption of the proton pump inhibitor
    B) Risk for toxic level of benzodiazepines
    C) Increased risk of respiratory depression
    D) Increased risk of bleeding
    Ans: B
    Feedback:
    When the proton pump inhibitor is administered with benzodiazepines, there will be a risk for a toxic level of benzodiazepines. When the client is administered sucralfate with the proton pump inhibitor, there will be a decrease in absorption of the proton pump inhibitor. When the client is administered an antacid with opioid analgesics, there will be an increased risk of respiratory depression. There will be an increased risk of bleeding when the client is taking oral anticoagulants with the proton pump inhibitor.

24. A nurse in a health care facility is caring for a client who is receiving an antiemetic to control vomiting related to chemotherapy. Which of the following nursing diagnoses should the care plan for this client include?
    A) Risk for Imbalanced Fluid Volume
    B) Disturbed Sensory Perception
    C) Impaired Physical Mobility
    D) Ineffective Tissue Perfusion
    Ans: A
    Feedback:
    The care plan should include Risk for Imbalanced Fluid Volume for the client receiving an antiemetic due to the possible fluid losses associated with vomiting as well as the possible decrease in fluid intake. Disturbed sensory perception, impaired physical mobility, and ineffective tissue perfusion are not applicable.

25. A client with a nasogastric tube is prescribed therapy to prevent ulcer development. Which of the following would be the best option for the drug?
    A) Tablet that can be crushed
    B) Liquid formulation
    C) Intravenous administration
    D) Intramuscular injection
    Ans: B
    Feedback:
    The nurse should request the liquid form when administration is in a tube to decrease the chance of a clogged NG tube. Although it is appropriate to crush the tablet and mix it with apple juice, there is still a risk for clogging. Intravenous or intramuscular administration would be inappropriate. The IV route is typically preferred if the patient has an existing IV line, because these drugs are irritating, and IM injections need to be given deep into the muscular tissue to minimize harm.

26. A group of nursing students are reviewing information about upper gastrointestinal system drugs. The students demonstrate understanding of the material when they identify which of the following as a proton pump inhibitor?
    A) Nizatidine
    B) Omeprazole
    C) Esomeprazole
    D) Sucralfate
    E) Misoprostol
    Ans: B, C
    Feedback:
    Omeprazole and esomeprazole are examples of proton pump inhibitors. Nizatidine is a histamine-2 receptor antagonist. Sucralfate and misoprostol are examples of miscellaneous acid reducers.

27. A nurse is teaching a client who is prescribed metoclopramide about signs and symptoms to report to the primary health care provider. The nurse determines that the teaching was successful when the client states which of the following? Select all that apply.
    A) Difficulty swallowing
    B) Uncontrolled tongue movements
    C) Muscle laxity
    D) Shuffling gait
    E) Diarrhea
    Ans: A, B, D
    Feedback:
    When taking metoclopramide, the client should immediately report any of the following signs: difficulty speaking or swallowing; mask-like face; shuffling gait; rigidity; tremors; uncontrolled movements of the mouth, face, or extremities; and uncontrolled chewing or unusual movements of the tongue. Diarrhea does not require the client to notify the health care provider.

28. A client is prescribed ranitidine. A review of the client's medication history reveals that she also takes warfarin for treatment of deep vein thrombosis. The nurse would monitor the client for which of the following?
    A) Decreased white blood cell count
    B) Increased risk of respiratory depression
    C) Increased risk for bleeding
    D) Decreased seizure threshold
    Ans: C
    Feedback:
    Histamine-2 receptor antagonists when given with warfarin place the client at an increased risk for bleeding. A decreased white blood cell count occurs when histamine-2 receptor antagonists are given with carmustine. An increased risk of respiratory depression occurs when histamine-2 receptor antagonists are given with opioid analgesics. This class of drugs does not interact with any antiseizure medications.

1. When describing the drugs used as treatment for clients with ulcerative colitis to a group of nursing students, the instructor discusses aspirin-like compounds with anti-inflammatory properties. Which of the following would the instructor most likely include? Select all that apply.
   A) Mesalamine (Asacol)
   B) Bisacodyl (Dulcolax)
   C) Magnesium oxide (Mag-Ox)
   D) Polyethylene glycol (MiraLAX)
   E) Olsalazine (Dipentum)
   Ans: A, E
   Feedback:
   Aminosalicylates, like mesalamine (Asacol) and olsalazine (Dipentum), are aspirin-like compounds with anti-inflammatory properties used in the treatment of clients with ulcerative colitis.

2. A nurse is preparing to administer sulfasalazine (Azulfidine) to a client with inflammatory bowel disease. The nurse checks the client's medical record for a history of hypersensitivities, understanding that the drug should not be administered to a client with hypersensitivity to which of the following drugs? Select all that apply.
   A) Enalapril (Vasotec)
   B) Doxycycline (Vibramycin)
   C) Azithromycin (Zithromax)
   D) Sulfamethoxazole/trimethoprim (Bactrim)
   Ans: D
   Feedback:
   Sulfasalazine (Azulfidine) is an aminosalicylate. The use of aminosalicylates is contraindicated in clients with hypersensitivity to sulfonamides and sulfites, which includes sulfamethoxazole/trimethoprim (Bactrim).

3. A nurse educating a client on balsalazide (Colazal) should advise the client about possible adverse reactions not involving the gastrointestinal tract. Which of the following would the nurse include in the teaching plan? Select all that apply.
   A) Alopecia
   B) Headache
   C) Fever
   D) Tremors
   E) Bone pain
   Ans: B, C
   Feedback:
   Balsalazide (Colazal) is an aminosalicylate. Nongastrointestinal adverse effects of aminosalicylates include headache, dizziness, fever, and weakness.

4. Which of the following drugs used to manage lower gastrointestinal disorders increase the risk of bleeding when administered to clients taking warfarin (Coumadin)? Select all that apply.
   A) Mesalamine (Asacol)
   B) Bisacodyl (Dulcolax)
   C) Psyllium (Metamucil)
   D) Polyethylene glycol (MiraLAX)
   E) Olsalazine (Dipentum)
   Ans: A, E
   Feedback:
   Aminosalicylates, like mesalamine (Asacol) and olsalazine (Dipentum), can increase the risk of bleeding in clients taking warfarin (Coumadin).

5. A client is using chamomile tea as a remedy to treat gastrointestinal upset. When discussing the use of this herb, the nurse would alert the client that contact dermatitis is a possibility if the client has a hypersensitivity to which of the following plants? Select all that apply.
   A) Ragweed
   B) Fox glove
   C) Asters
   D) Lavender
   E) Chrysanthemums
   Ans: A, C, E
   Feedback:
   Although chamomile is generally safe and nontoxic, the tea is prepared from the pollen-filled flower heads and has resulted in symptoms ranging from contact dermatitis to severe anaphylactic reactions in individuals hypersensitive to ragweed, asters, and chrysanthemums.

6. A nursing student is preparing a presentation on antidiarrheal drugs. Which of the following drugs would the student include as being chemically related to opioid drugs and used to treat diarrhea by decreasing intestinal peristalsis? Select all that apply.
   A) Bisacodyl (Dulcolax)
   B) Difenoxin (Motofen)
   C) Alosetron (Lotronex)
   D) Diphenoxylate (Lomotil)
   E) Bismuth (Pepto-Bismol)
   Ans: B, D
   Feedback:
   Difenoxin (Motofen) and diphenoxylate (Lomotil) are chemically related to opioid drugs and treat diarrhea by decreasing intestinal peristalsis.

7. A client is prescribed diphenoxylate. The nurse informs the client that he may experience which of the following effects? Select all that apply.
   A) Euphoric effects
   B) Analgesic effects
   C) Anti-inflammatory effects
   D) Sedative effects
   E) Slowed GI effects
   Ans: A, D, E
   Feedback:
   Because diphenoxylate (Lomotil) is opioid related, it may have sedative, slowed GI, and euphoric effects but no analgesic or anti-inflammatory activity.

8. Antidiarrheals are contraindicated in clients whose diarrhea is associated with which of the following organisms that can harm the intestinal mucosa? Select all that apply.
   A) *Staphylococcus*
   B) *Shigella*
   C) *Salmonella*
   D) *Streptococcus*
   E) *Escherichia coli*
   Ans: B, C, E
   Feedback:
   Antidiarrheals are contraindicated in clients whose diarrhea is associated with *Shigella, Salmonella,* and *Escherichia coli,* which can harm the intestinal mucosa.

9. A client is prescribed an antidiarrheal drug. The nurse reviews the client's medical record for possible contraindications for use. Which of the following would alert the nurse to a possible contraindication? Select all that apply.
   A) Pseudomembranous colitis
   B) Type 1 diabetes
   C) Abdominal pain of unknown origin
   D) Liver disease
   E) Obstructive jaundice
   Ans: A, C, E
   Feedback:
   Clients with pseudomembranous colitis, abdominal pain of unknown origin, and obstructive jaundice should not take antidiarrheals.

10. After administering diphenoxylate to a client, the nurse would assess the client closely for increased CNS depression if the client was also receiving which medication? Select all that apply.
    A) Fexofenadine (Allegra)
    B) Glyburide (DiaBeta)
    C) Sucralfate (Carafate)
    D) Zolpidem (Ambien)
    E) Temazepam (Restoril)
    Ans: A, D, E
    Feedback:
    The nurse should monitor a client closely for increased CNS depression when diphenoxylate (Lomotil) is given to a client taking antihistamines (fexofenadine), opioids, sedatives (zolpidem), and hypnotics (temazepam).

11. A client's history reveals that the client is experiencing intestinal gas. Which of the following would the nurse expect the primary health care provider to prescribe? Select all that apply.
    A) Charcoal (Flatulex)
    B) Omeprazole (Prilosec)
    C) Ranitidine (Zantac)
    D) Odansetron (Zofran)
    E) Simethicone (Mylicon)
    Ans: A, E
    Feedback:
    Charcoal (Flatulex) and simethicone (Mylicon) are antiflatulents used to help relieve gas in the intestinal tract of a client. Omeprazole and ranitidine are used to treat hyperacidity disorders. Odansetron is used to treat nausea and vomiting.

12. The nurse is preparing to administer a laxative that adds bulk and water to the contents of the intestines, thereby stimulating intestinal peristalsis. Which of the following would the nurse be likely to administer? Select all that apply.
    A) Docusate (Colace)
    B) Methylcellulose (Citrucel)
    C) Polycarbophil (FiberCon)
    D) Bisacodyl (Docusate)
    E) Lactulose (Chronulac)
    Ans: B, C
    Feedback:
    Bulk-producing laxatives, like methylcellulose (Citrucel) and polycarbophil (FiberCon), produce their laxative effect by adding bulk and water to the contents of the intestines, thereby stimulating intestinal peristalsis. Docusate is a stool softener. Bisacodyl is a stimulant laxative. Lactulose is a hyperosmotic agent.

13. After teaching a group of nursing students about laxatives, the instructor determines that the teaching was successful when the students identify which drug as producing the laxative effect by promoting water retention in the fecal mass and softening the stool? Select all that apply.
    A) Docusate sodium (Colace)
    B) Methylcellulose (Citrucel)
    C) Bisacodyl (Dulcolax)
    D) Lactulose (Chronulac)
    Ans: A
    Feedback:
    Stool softeners, like docusate sodium (Colace) and docusate calcium (Surfak), produce their laxative effect by promoting water retention in the fecal mass and softening the stool. Methylcellulose is a bulk-producing laxative. Bisacodyl is a stimulant laxative. Lactulose is a hyperosmolar laxative.

14. The nurse is reviewing a client's history and finds that the client uses a laxative that produces its effects by dehydrating local tissues, which causes irritation and increased peristalsis, with consequent evacuation of the fecal mass. Which of the following would this be? Select all that apply.
    A) Docusate sodium (Colace)
    B) Methylcellulose (Citrucel)
    C) Glycerin (Fleet Babylax)
    D) Bisacodyl (Dulcolax)
    E) Lactulose (Chronulac)
    Ans: C, E
    Feedback:
    Hyperosmotic agents, like glycerin (Fleet Babylax) and lactulose (Chronulac), produce their laxative effect by dehydrating local tissues, which causes irritation and increased peristalsis, with consequent evacuation of the fecal mass. Docusate is a stool softener. Methylcellulose is a bulk-forming laxative. Bisacodyl is an irritant laxative.

15. Which of the following produce their laxative effect by direct action on the intestine to increase peristalsis? Select all that apply.
    A) Sennosides (Senokot)
    B) Methylcellulose (Citrucel)
    C) Glycerin (Fleet Babylax)
    D) Bisacodyl (Dulcolax)
    E) Lactulose (Chronulac)
    Ans: A, D
    Feedback:
    Irritant or stimulant laxatives, like sennosides (Senokot) and bisacodyl (Dulcolax), produce their laxative effect by direct action on the intestine to increase peristalsis. Methylcellulose is a bulk-forming laxative. Glycerin and lactulose are hyperosmolar drugs.

16. When reviewing a client's history, a nurse determines that the use of laxatives would be contraindicated if the client has a history of which of the following? Select all that apply.
    A) Chronic hepatitis
    B) Type 1 diabetes
    C) Acute appendicitis
    D) Intestinal obstruction
    E) Fecal impaction
    Ans: C, D, E
    Feedback:
    Laxatives are contraindicated in clients with known hypersensitivity and those with persistent abdominal pain, nausea, vomiting, or pain of unknown cause or signs of acute appendicitis, fecal impaction, intestinal obstruction, or acute hepatitis.

17. A nurse would most likely expect a primary health care provider to prescribe psyllium (Metamucil) to a client who is experiencing constipation related to which drug? Select all that apply.
    A) Spironolactone (Aldactone)
    B) Clonidine (Catapres)
    C) Enalapril (Vasotec)
    D) Fexofenadine (Allegra)
    E) Amitriptyline (Elavil)
    Ans: A, B, D, E
    Feedback:
    The following drugs may cause constipation in clients and require the use of a laxative to relieve constipation: anticholinergics, antihistamines (fexofenadine), phenothiazines, tricyclic antidepressants (amitriptyline), opioids, non-potassium-sparing diuretics (spironolactone), iron preparations, barium, clonidine, and calcium- or aluminum-containing antacids.

18. A client is prescribed a laxative. Which of the following would the nurse include in the teaching plan for the client about possible adverse reactions? Select all that apply.
    A) Nausea
    B) Perianal irritation
    C) Bloating
    D) Constipation
    E) Cramps
    Ans: A, B, C, E
    Feedback:
    Laxatives may cause diarrhea, loss of water and electrolytes, abdominal pain or discomfort, nausea, vomiting, perianal irritation, fainting, bloating, flatulence, cramps, and weakness.

19. A physician has prescribed simethicone to a client with postoperative abdominal distention. After administering the drug, the nurse would assess the client for the possibility of which of the following?
    A) Heartburn
    B) Vomiting
    C) Fainting
    D) Nausea
    Ans: A
    Feedback:
    The nurse should monitor for heartburn, bloating, constipation, and diarrhea in the client after administering simethicone. Vomiting, fainting, and nausea are adverse reactions to methylcellulose, which is administered for the relief of constipation.

20. A nurse is caring for a client with irritable bowel syndrome. The physician has prescribed polycarbophil to the client. The nurse would administer this drug cautiously if the client's history revealed which of the following?
    A) Abdominal pain
    B) Pseudomembranous colitis
    C) Rectal bleeding
    D) Intestinal obstruction
    Ans: C
    Feedback:
    The nurse should administer polycarbophil with caution in clients with rectal bleeding, in pregnant women, and during lactation. Antidiarrheals are contraindicated in clients with abdominal pain and pseudomembranous colitis. Aminosalicylates are contraindicated in clients with intestinal obstruction.

21. A physician has prescribed difenoxin with atropine to a client with acute diarrhea. The client informs the nurse that he is also taking MAOI antidepressants. The nurse would assess the client for which of the following that might result from the interaction of the two drugs?
    A) Decreased effect of difenoxin
    B) Increased risk of hypertensive crisis
    C) Increased cholinergic blocking adverse reactions
    D) Increased risk of CNS depression
    Ans: B
    Feedback:
    The nurse should monitor the client for an increased risk of hypertensive crisis as an effect of the interaction between difenoxin with atropine and MAOI antidepressants. When the client is administered antihistamines, opioids, sedatives, or hypnotics with antidiarrheal drugs, there will be increased risk of CNS depression. When the client is administered antihistamines and general antidepressants with antidiarrheal drugs, there will be increased cholinergic blocking adverse reactions. There will not be a decreased effect of difenoxin when there is an interaction between difenoxin and MAOI antidepressants.

22. A physician has prescribed bisacodyl to a client with constipation. The client complains of epigastric pain and a burning sensation after taking the drug. Which of the following instructions should the nurse provide to the client?
    A) Immediately stop taking the drug.
    B) Take antacids between meals.
    C) Take the drug in powdered form.
    D) Avoid milk before taking the drug.
    Ans: D
    Feedback:
    The nurse should instruct the client to avoid milk, antacids, H_2 antagonists, and proton pump inhibitors 1 to 2 hours before taking the bisacodyl tablets because the enteric coating may dissolve early before reaching the intestinal tract, resulting in gastric lining irritation or dyspepsia and decreasing the laxative effect of the drug. The nurse need not instruct the client to immediately stop taking the drug, take the drug in powdered form, or take antacids between meals as these interventions will not help in preventing gastric lining irritation.

23. A nurse is caring for a client with pseudomembranous colitis. The physician has prescribed loperamide. Which of the following would the nurse identify as indicative of effectiveness?
    A) Elevation in temperature is noted.
    B) Rectal bleeding is noted.
    C) Diarrhea is resolved.
    D) Nausea and vomiting are resolved.
    Ans: C
    Feedback:
    Loperamide is an antidiarrheal medication. The nurse will know that the medication is effective if the diarrhea is resolved in the client. The nurse should monitor the client for an elevation in body temperature, severe abdominal pain, abdominal rigidity, or distention because these are the indicators of intestinal perforation. The nurse should monitor for rectal bleeding when laxatives are administered.

24. The nurse is caring for a client who is prescribed mesalamine. The client is also taking warfarin. Which of the following interactions should the nurse monitor the client for when he is administered mesalamine with warfarin?
    A) Increased risk of immunosuppression
    B) Increased blood glucose level
    C) Increased risk of bleeding
    D) Increased risk of CNS depression
    Ans: C
    Feedback:
    The client administered mesalamine and warfarin is at an increased risk of bleeding. Warfarin is an anticoagulant used as a blood thinner; mesalamine is an aminosalicylate, which is an aspirin-like compound with anti-inflammatory action. The combination of mesalamine and warfarin does not increase the risk of immunosuppression, increase the blood glucose level, or increase the risk of CNS depression. There is an increased risk of immunosuppression if an aminosalicylate interacts with methotrexate used in cancer and autoimmune conditions. There is an increased blood glucose level when oral hypoglycemic drugs interact with aminosalicylates. There is an increased risk of CNS depression when opioids are administered with aminosalicylates.

25. A nurse is caring for a client with constipation. The physician prescribes cascara sagrada to the client. Which of the following effects should the nurse monitor for in the client after administration of the drug?
    A) Sudden increase in weight
    B) Brownish discoloration of urine
    C) Reduced sperm count
    D) Abdominal pain and cramping
    Ans: B
    Feedback:
    The nurse should monitor for pink-red, red-violet, red-brown, yellow-brown, or black discoloration of urine after administration of cascara sagrada to the client. Reduced sperm count is the adverse effect of sulfasalazine. Abdominal pain and cramping are the adverse effects of olsalazine. Cascara sagrada does not cause a sudden increase in the weight of the client.

26. A nurse is caring for a client with intestinal stenosis who has been prescribed psyllium. During the course of the treatment, the client shows the signs of colon obstruction. What intervention should the nurse perform to avoid the occurrence of colon obstruction?
    A) Administer the drug with adequate fluid intake.
    B) Give mineral oil to the client after meals.
    C) Administer the drug after chilling it.
    D) Provide foods high in bulk or roughage.
    Ans: A
    Feedback:
    The nurse should administer the drug with adequate fluid intake to avoid obstruction of the esophagus, stomach, small intestine, and colon in a client with intestinal stenosis. Mineral oil is given to the client as a laxative on an empty stomach in the evening. The nurse should provide foods high in bulk or roughage to avoid constipation in a client receiving laxatives. The nurse administers a laxative with an unpleasant or salty taste after chilling it to disguise its taste.

27. A client has been diagnosed with ulcerative colitis. The physician has prescribed sulfasalazine to the client. Based on the nurse's understanding of this condition, the nurse would monitor the client for which of the following?
    A) Mild symptoms of contact dermatitis
    B) Abdominal pain and distention
    C) Severe blood- and mucus-filled diarrhea
    D) Frequent loose or watery stools
    Ans: C
    Feedback:
    The nurse should monitor for severe blood- and mucus-filled diarrhea in the client with ulcerative colitis. Pain and fatigue also accompany this disorder. Abdominal pain and distention are clinical manifestations of Crohn's disease. When clients are hypersensitive to ragweed, asters, and chrysanthemums are administered the chamomile herb, mild symptoms of contact dermatitis are observed. Frequent loose or watery stools are not associated with ulcerative colitis.

28. A nurse is caring for a client receiving bismuth subsalicylate for the relief of diarrhea. Which of the following interventions should the nurse perform to promote an optimal response to the prescribed drug therapy?
    A) Thoroughly mix and stir the drug before administering.
    B) Administer the drug after each loose bowel movement.
    C) Ensure the client receives adequate sunlight.
    D) Encourage the client to lightly exercise on a daily basis.
    Ans: B
    Feedback:
    The nurse should administer the drug after each loose bowel movement to promote an optimal response to the prescribed drug therapy in the client with diarrhea. The nurse should inspect each bowel movement before making a decision to administer the drug. Laxatives that are in powder, flake, or granule form are mixed and stirred before being administered to the client with constipation. The nurse need not ensure that the client receives adequate sunlight or encourage the client to lightly exercise on a daily basis as these interventions will not help in promoting an optimal response to the prescribed drug therapy.

29. During a routine clinic visit, a client tells the nurse that he is taking an over-the-counter antidiarrheal agent for treatment of diarrhea. The nurse reviews the drug information with the client. Afterward, the nurse determines that the teaching was successful when the client states that he will contact his primary health care provider if the diarrhea is not resolved within which time frame?
    A) 24 hours
    B) 48 hours
    C) 72 hours
    D) 96 hours
    Ans: B
    Feedback:
    If diarrhea persists for more than 2 days when over-the-counter (OTC) antidiarrheal drugs are being used, the client should discontinue use and seek treatment from the primary health care provider.

30. A client is receiving a bowel evacuant in preparation for a colonoscopy. The client tells the nurse that he has been "going to the bathroom about every 30 to 45 minutes" since he started taking the drug and his stools are "like water." He reports that he is thirsty and his mouth feels dry. Which nursing diagnosis would the nurse most likely identify?
    A) Risk for Infection
    B) Risk for Injury
    C) Risk for Imbalanced Fluid Volume
    D) Deficient Knowledge
    Ans: C
    Feedback:
    The client's report of frequent stools, which is a result of the drug therapy, along with complaints of feeling thirsty and dry mouth suggest the nursing diagnosis of Risk for Imbalanced Fluid Volume due to the large losses of fluid from the body from the drug. There is no evidence to support a risk for infection or deficient knowledge. Risk for Injury would be appropriate if the client was experiencing drowsiness or dizziness in conjunction with the fluid losses.

1. A nurse is preparing a presentation for a local community group about diabetes. Which of the following would the nurse include when describing type 1 diabetes? Select all that apply.
   A) Insidious onset
   B) Occurs before age 20
   C) Insulin supplementation required for survival
   D) Formally known as non-insulin-dependent diabetes mellitus
   E) Obesity a risk factor
   Ans: B, C
   Feedback:
   Type 1 diabetes is formerly known as insulin-dependent diabetes mellitus. It usually has a rapid onset and occurs before age 20. Those with type 1 diabetes produce insulin in insufficient amounts and therefore must have insulin supplementation to survive. Type 1 diabetes is an autoimmune disorder; therefore, obesity is not a risk factor.

2. The nurse is assessing a client for risk factors associated with type 2 diabetes. Which of the following would the nurse identify? Select all that apply.
   A) Younger age
   B) Impaired glucose tolerance
   C) Caucasian race
   D) Obesity
   E) History of gestational diabetes
   Ans: B, D, E
   Feedback:
   A nurse should be able to identify all the risk factors for type 2 diabetes in a client. These include obesity, older age, family history of diabetes, history of gestational diabetes, impaired glucose tolerance, minimal or no physical activity, and race/ethnicity (African Americans, Hispanic/Latino Americans, Native Americans, and some Asian Americans).

3. A nurse is preparing to administer a long-acting insulin to a client. Which of the following might the nurse administer? Select all that apply.
   A) Insulin aspart (NovoLog)
   B) Insulin lispro (Humalog)
   C) Insulin glargine (Lantus)
   D) Insulin detemir (Levemir)
   E) Insulin glulisine (Apidra)
   Ans: C, D
   Feedback:
   Insulin glargine (Lantus) and insulin detemir (Levemir) are long-acting insulins with a duration of 24 hours. Insulin aspart, lispro, and glulisine are rapid-acting insulins.

4. After teaching an in-service presentation to a group of nurses about diabetes and insulin, the presenter determines that the presentation was successful when the group identifies which of the following as a rapid-acting insulin? Select all that apply.
   A) Insulin aspart (NovoLog)
   B) Isophane insulin suspension (Novolin N)
   C) Insulin glargine (Lantus)
   D) Insulin detemir (Levemir)
   E) Insulin glulisine (Apidra)
   Ans: A, E
   Feedback:
   Insulin aspart (NovoLog) and insulin glulisine (Apidra) are rapid-acting insulins. Isophane insulin suspension is an intermediate-acting insulin. Insulin glargine and detemir are long-acting insulins.

5. A nurse is caring for a client receiving insulin glargine (Lantus) 20 units at bedtime. Initiation of which of the following drugs may increase the client's insulin requirement? Select all that apply.
   A) Methylprednisolone (Medrol)
   B) Metoprolol (Lopressor)
   C) Fenofibrate (Tricor)
   D) Estradiol (Estrace)
   E) Niacin (Niaspan)
   Ans: A, D, E
   Feedback:
   Corticosteroids (methylprednisolone), estrogens (estradiol), and niacin (Niaspan) are among the drugs can decrease the effect of insulin and require an increase in insulin dosage to control the client's diabetes. Beta blockers and fibrates increase the effect of insulin and thus may require a decrease in the dosage of insulin.

6. A nurse is caring for a client receiving insulin detemir 10 units at bedtime. Which of the following drugs, if started, would most likely require a decrease in the dosage of insulin?
   Select all that apply.
   A) Sulfamethoxazole/trimethoprim (Septra)
   B) Metoprolol (Lopressor)
   C) Fenofibrate (Tricor)
   D) Diltiazem (Verapamil)
   E) Albuterol (Ventolin)
   Ans: A, B, C
   Feedback:
   Sulfonamides (sulfamethoxazole/trimethoprim), beta-blocking drugs (metoprolol), and fibrates (fenofibrate), among others, can increase the effect of insulin and require a decrease in insulin dosage to control the client's diabetes. Diltiazem and albuterol decrease the effect of insulin, requiring an increase in the dosage.

7. After administering insulin detemir to a client with diabetes, the nurse suspects that the client is developing hypoglycemia based on assessment of which of the following?
   Select all that apply.
   A) Increased thirst
   B) Increased urination
   C) Headache
   D) Confusion
   E) Diaphoresis
   Ans: C, D, E
   Feedback:
   The symptoms of hypoglycemia include fatigue, weakness, nervousness, agitation, confusion, headache, diplopia, convulsions, dizziness, unconsciousness, hunger, nausea, diaphoresis, and numbness or tingling of the lips or tongue. Increased thirst and urination suggest hyperglycemia.

8. As part of the ongoing assessment of a client receiving insulin detemir, the nurse would suspect that the insulin is not effective based on assessment of which of the following? Select all that apply.
   A) Increased thirst
   B) Increased urination
   C) Increased appetite
   D) Confusion
   E) Abdominal pain
   Ans: A, B, E
   Feedback:
   If the insulin was not effective, the client would exhibit signs and symptoms of hyperglycemia including drowsiness, dim vision, thirst, nausea, vomiting, abdominal pain, loss of appetite, acetone breath, and excessive urination.

9. When preparing to administer insulin glargine to a client, which of the following would be appropriate for the nurse to do? Select all that apply.
   A) Check the expiration date on the vial.
   B) Shake the vial vigorously.
   C) Check the physician's orders for the type and dosage of insulin.
   D) Remove all air bubbles from the syringe barrel.
   E) Mix with short-acting insulin prior to administration.
   Ans: A, C, D
   Feedback:
   Prior to administering insulin glargine (Lantus) to a client, the nurse must complete the following preadministration steps: carefully check the physician's order for the type and dosage of insulin, check the expiration date on the vial, gently rotate the vial between the palms of the hands, gently tilt end to end before withdrawing the insulin, and remove all air bubbles from the syringe barrel. The nurse should never mix or dilute insulin glargine (Lantus) with any other insulin or solution because the insulin will not be effective.

10. The nurse monitoring a client receiving insulin glulisine (Apidra) notices the client has become confused, diaphoretic, and nauseated. The nurse checks the client's blood glucose and it is 60 mg/dL. Which of the following would the nurse most likely give? Select all that apply.
    A) Orange or other fruit juice
    B) Glucose tablets
    C) Insulin glargine (Lantus)
    D) Hard candy
    E) Insulin detemir (Levemir)
    Ans: A, B, D
    Feedback:
    Methods of terminating a hypoglycemic reaction include the administration of one or more of the following: orange or other fruit juice, hard candy or honey, glucose tablets, glucagon, or glucose 10% or 50% IV.

11. A nurse is preparing to administer a drug that helps lower blood glucose by increasing the production of insulin by beta cells in the pancreas. Which of the following might this be? Select all that apply.
    A) Glyburide (DiaBeta)
    B) Metformin (Glucophage)
    C) Pioglitazone (Actos)
    D) Glipizide (Glucotrol)
    E) Acarbose (Precose)
    Ans: A, D
    Feedback:
    Sulfonylureas, like glyburide (DiaBeta) and glipizide (Glucotrol), help lower blood glucose by increasing the production of insulin by beta cells in the pancreas.

12. After teaching a group of nursing students about antidiabetic drugs, the instructor determines that the teaching was successful when the students identify which of the following as producing the glucose-lowering effects by delaying the digestion and absorption of carbohydrates in the intestine? Select all that apply.
    A) Glimepiride (Amaryl)
    B) Metformin (Glucophage)
    C) Pioglitazone (Actos)
    D) Miglitol (Glyset)
    E) Acarbose (Precose)
    Ans: D, E
    Feedback:
    The alpha-glucosidase inhibitors, acarbose (Precose) and miglitol (Glyset), produce their glucose-lowering effects by delaying the digestion and absorption of carbohydrates in the intestine. Glimepiride is a sulfonylurea. Metformin sensitizes the liver to circulating insulin levels and reduces hepatic glucose production. Pioglitazone decreases insulin resistance and increases insulin sensitivity by modifying several processes, resulting in decreased hepatic glucogenesis (formation of glucose from glycogen) and increased insulin-dependent muscle glucose uptake.

13. Which of the following produce their glucose-lowering effect by decreasing insulin resistance and increasing insulin sensitivity? Select all that apply.
    A) Rosiglitazone (Avandia)
    B) Metformin (Glucophage)
    C) Pioglitazone (Actos)
    D) Miglitol (Glyset)
    E) Acarbose (Precose)
    Ans: A, C
    Feedback:
    The thiazolidinediones, rosiglitazone (Avandia) and pioglitazone (Actos), produce their glucose-lowering effect by decreasing insulin resistance and increasing insulin sensitivity. The alpha-glucosidase inhibitors, acarbose (Precose) and miglitol (Glyset), produce their glucose-lowering effects by delaying the digestion and absorption of carbohydrates in the intestine. Metformin sensitizes the liver to circulating insulin levels and reduces hepatic glucose production.

14. After administering glimepiride, the nurse would assess the client for which of the following? Select all that apply.
    A) Lactic acidosis
    B) Edema
    C) Hypoglycemia
    D) Heartburn
    E) Nausea
    Ans: C, D, E
    Feedback:
    Adverse reactions associated with sulfonylureas, like glimepiride (Amaryl), include hypoglycemia, anorexia, nausea, vomiting, epigastric discomfort, weight gain, heartburn, and various vague neurologic symptoms, such as numbness and weakness of the extremities.

15. A client is receiving metformin (Glucophage). The nurse suspects that the client is developing lactic acidosis based on assessment of which of the following? Select all that apply.
    A) Malaise
    B) Hypertension
    C) Tachypnea
    D) Abdominal pain
    E) Muscular pain
    Ans: A, C, D, E
    Feedback:
    Symptoms of lactic acidosis include malaise, abdominal pain, tachypnea, shortness of breath, and muscular pain.

16. A nurse should monitor a client taking glyburide (DiaBeta) for increased hypoglycemic effect if which of the following drugs are initiated? Select all that apply.
    A) Ranitidine (Zantac)
    B) Warfarin (Coumadin)
    C) Digoxin (Lanoxin)
    D) Lithium (Eskalith)
    E) Amitriptyline (Elavil)
    Ans: A, B, E
    Feedback:
    H_2 antagonists (ranitidine), anticoagulants (warfarin), and tricyclic antidepressants (amitriptyline), among others, can result in increased hypoglycemic effects of sulfonylureas (glyburide).

17. A client is receiving glyburide. The nurse assesses the client for a decrease in the drug's effect if which of the following drugs are initiated? Select all that apply.
    A) Atenolol (Tenormin)
    B) Amlodipine (Norvasc)
    C) Phenytoin (Dilantin)
    D) Lithium (Eskalith)
    E) Levothyroxine (Synthroid)
    Ans: A, B, C, E
    Feedback:
    Beta blockers (atenolol), calcium channel blockers (amlodipine), hydantoins (phenytoin), and thyroid agents (levothyroxine), among others, can result in decreased hypoglycemic effects of sulfonylureas (glyburide).

18. A client at a health care facility has been prescribed diazoxide for hypoglycemia due to hyperinsulinism. After administration, the nurse would assess the client for which adverse reaction?
    A) Myalgia
    B) Tachycardia
    C) Flatulence
    D) Epigastric discomfort
    Ans: B
    Feedback:
    The nurse should monitor for tachycardia, congestive heart failure, sodium and fluid retention, hyperglycemia, and glycosuria as the adverse reactions in the client receiving diazoxide drug therapy. Myalgia, fatigue, and headache are the adverse reactions observed in clients undergoing pioglitazone HCl drug therapy. Flatulence is one of the adverse reactions found in clients receiving metformin drug therapy. Epigastric discomfort is one of the adverse reactions observed in clients receiving acetohexamide drugs.

19. A client has been prescribed acarbose. Which of the following interventions should the nurse perform to promote an optimal response to the medication?
    A) Administer the drug with breakfast.
    B) Expect to add an oral sulfonylurea with the drug.
    C) Administer the drug with the first bite of the meal.
    D) Report unusual somnolence to the primary health care provider.
    Ans: C
    Feedback:
    The nurse should administer acarbose to the client with the first bite of the meal. The nurse needs to administer glyburide (Micronase) with breakfast. An oral sulfonylurea will likely be added to metformin if the client does not experience a response in 4 weeks using the maximum dose of metformin. Clients taking metformin may experience unusual somnolence, of which the nurse should inform the primary health care provider.

20. A client is receiving glipizide at a health care facility. The client is also prescribed an anticoagulant. The nurse would be alert for which of the following related to the interaction of these two drugs?
    A) Increased risk of lactic acidosis
    B) Risk of acute renal failure
    C) Increased risk for bleeding
    D) Increased hypoglycemic effect
    Ans: D
    Feedback:
    The nurse should observe for increased hypoglycemic effect in the client as the effect of the interaction of sulfonylureas with the anticoagulants, chloramphenicol, clofibrate, fluconazole, histamine-2 antagonists, methyldopa, monoamine oxidase inhibitors (MAOIs), salicylates, sulfonamides, and tricyclic antidepressants. Increased risk of lactic acidosis is an effect of the interaction of metformin with glucocorticoids. Increased risk for bleeding is an effect of the interaction of oral anticoagulants with anti-infective drugs. There is a risk of acute renal failure when iodinated contrast material used for radiologic studies is administered with metformin.

21. A nurse is caring for a client with diabetes mellitus who is receiving an oral antidiabetic drug. Which of following ongoing assessments should the nurse perform when caring for this client?
    A) Assess the skin for ulcers, cuts, and sores.
    B) Observe the client for hypoglycemic episodes.
    C) Monitor the client for lipodystrophy.
    D) Document family medical history.
    Ans: B
    Feedback:
    As the ongoing assessment activity, the nurse should observe the client for hypoglycemic episodes. Documenting family medical history and assessing the client's skin for ulcers, cuts, and sores should be completed before administering the drug. Lipodystrophy occurs if the sites of insulin injection are not rotated.

22. A nurse is assigned to administer insulin glargine to a client at a health care facility. What precaution should the nurse take when administering this drug?
    A) Administer glargine via IV route.
    B) Avoid mixing glargine with other insulin.
    C) Shake the vial vigorously before withdrawing insulin.
    D) Be sure the insulin has been refrigerated.
    Ans: B
    Feedback:
    When administering insulin glargine to the client, the nurse should avoid mixing it with other insulins or solutions. It will precipitate in the syringe when mixed. If glargine is mixed with another solution, it will lose glucose control, resulting in decreased effectiveness of the insulin. Glargine is administered via the subcutaneous route once daily at bedtime. The nurse should not shake the vial vigorously before withdrawing insulin. The vial should be gently rotated between the palms of the hands and tilted gently end to end immediately before withdrawing the insulin. The nurse administers insulin from vials at room temperature. Vials are stored in the refrigerator if they are to be stored for about 3 months for later use.

23. A nurse at a health care facility is assigned to administer insulin to the client. Which of the following interventions should the nurse perform before administering each insulin dose?
    A) Inspect the previous injection site for inflammation.
    B) Keep prefilled syringes horizontally.
    C) Check for symptoms of myalgia or malaise.
    D) Mix the insulin with sterile water in the syringe.
    Ans: A
    Feedback:
    The nurse should check the previous injection site before administering each insulin dose. The injection sites should be rotated to prevent lipodystrophy. Prefilled syringes should not be kept horizontally; they should be kept in a vertical or oblique position to avoid plugging the needle. The nurse checks for symptoms of myalgia or malaise when administration of metformin leads to lactic acidosis. Insulin should not be mixed with other drugs in the syringe. Some types of insulin may be combined in one syringe, but sterile water is never used.

24. A nurse is caring for a client who has developed a hypoglycemic reaction. Which of the following interventions should the nurse perform if swallowing and gag reflexes are present in the client?
    A) Administer glucagon by the parenteral route.
    B) Administer the insulin via insulin pump.
    C) Administer oral antidiabetics to the client.
    D) Give oral fluids or candy.
    Ans: D
    Feedback:
    The nurse should administer oral fluids or candy to the hypoglycemic client with swallowing and gag reflexes. If the client is unconscious, the nurse should administer glucose or glucagon parenterally. The nurse should administer insulin through an insulin pump for diabetic clients who are pregnant or have had a renal transplant. Oral antidiabetic drugs are administered to clients with type 2 diabetes.

25. A nurse is caring for a client diagnosed with type 2 diabetes. When teaching the client about this condition, the nurse would identify which of the following as a risk factor?
    A) Young age
    B) Regular exercise
    C) Obesity
    D) Polyuria
    Ans: C
    Feedback:
    The nurse informs the client that obesity is a risk factor associated with type 2 diabetes. Young age and regular exercise are not risk factors for type 2 diabetes. Polyuria is a symptom of diabetes and not a risk factor leading to type 2 diabetes.

26. A nurse is caring for a client with type 2 diabetes receiving a meglitinide. The nurse reviews the client's medical record based on the understanding that which condition would contraindicate the use of this drug?
    A) Diabetic ketoacidosis
    B) Kidney disease
    C) Severe heart failure
    D) Liver disease
    Ans: A
    Feedback:
    Meglitinides are contraindicated in clients with diabetic ketoacidosis and severe endocrine disease. Thiazolidinediones are contraindicated in clients with severe heart failure and used with caution in clients with kidney disease, severe heart failure, and liver disease.

27. A client receives insulin lispro at 8 a.m. The nurse would be alert for signs and symptoms of hypoglycemia at about which time?
    A) 8:15 a.m.
    B) 9 a.m.
    C) 10 a.m.
    D) 11 a.m.
    Ans: B
    Feedback:
    Insulin lispro reaches its peak action in 30 minutes to 1.5 hours. Therefore, the client's greatest risk for hypoglycemia would be during this time or about 9 a.m. Onset of action occurs in 5 to 10 minutes, so the drug would begin being effective at this time.

28. A client who is receiving metformin develops lactic acidosis. When planning the care for this client, which nursing diagnosis would the nurse most likely identify?
    A) Ineffective Breathing Pattern
    B) Risk for Fluid Volume Deficit
    C) Acute Confusion
    D) Anxiety
    Ans: A
    Feedback:
    When taking metformin, the patient is at risk for lactic acidosis manifested by unexplained hyperventilation, myalgia, malaise, GI symptoms, or unusual somnolence. Thus, a nursing diagnosis of Ineffective Breathing Pattern would be most likely. There are no problems with fluid balance. Acute Confusion would be appropriate if the client was experiencing hypoglycemia. Anxiety would be appropriate for a client who is newly diagnosed with diabetes and having difficulty accepting the diagnosis.

29. A client is being discharged after being diagnosed with diabetes. The client is being taught how to monitor his blood glucose. After teaching the client, which statement indicates to the nurse that additional teaching is needed?
    A) "I should prick the tip of my finger to get the blood."
    B) "I should clean my finger with warm, soapy water."
    C) "I should massage my finger to get a hanging drop of blood."
    D) "I should avoid smearing the blood on the test strip."
    Ans: A
    Feedback:
    The client should insert the lancet to prick the side of the finger, not the tip, because the side has more capillaries and fewer nerve endings. The finger should be washed with warm, soapy water and then dried before testing. The client should massage the finger to get a hanging drop of blood to be placed on the test strip. The client needs to avoid smearing the blood on the strip to prevent inaccurate readings.

30. A client is prescribed miglitol. The nurse would instruct the client to administer this drug at which time?
    A) At bedtime
    B) Three times a day with the first bite of a meal
    C) 30 minutes before eating breakfast
    D) Before or after a meal during the day
    Ans: B
    Feedback:
    Miglitol is given three times a day with the first bite of the meal because food increases absorption.

1. A nursing instructor is preparing for a class discussion on pituitary gland hormones. Which of the following hormones would the instructor include as being secreted by the anterior pituitary gland? Select all that apply.
   A) Growth hormone
   B) Adrenocorticotropic hormone
   C) Vasopressin
   D) Prolactin
   E) Oxytocin
   Ans: A, B, D
   Feedback:
   Prolactin, adrenocorticotropic hormone, growth hormone, luteinizing hormone, follicle-stimulating hormone, and thyroid-stimulating hormone are secreted by the anterior pituitary gland. Vasopressin and oxytocin are secreted by the posterior pituitary gland.

2. A group of nursing students demonstrate understanding of a class discussion on pituitary hormones when they identify which of the following hormones as secreted by the posterior pituitary gland? Select all that apply.
   A) Growth hormone
   B) Adrenocorticotropic hormone
   C) Vasopressin
   D) Prolactin
   E) Oxytocin
   Ans: C, E
   Feedback:
   Vasopressin and oxytocin are secreted by the posterior pituitary gland. Growth hormone, adrenocorticotropic hormone, and prolactin are secreted by the posterior pituitary gland.

3. Which of the following hormones are secreted by the adrenal gland? Select all that apply.
   A) Growth hormone
   B) Mineralocorticoids
   C) Glucocorticoids
   D) Prolactin
   E) Oxytocin
   Ans: B, C
   Feedback:
   Glucocorticoids and mineralocorticoids are secreted by the adrenal gland. Growth hormone, prolactin, and oxytocin are secreted by the pituitary gland.

4. A nurse is preparing to teach a client about vasopressin. Which of the following would the nurse integrate into the teaching? Select all that apply.
   A) Vasopressin is secreted by the adrenal gland.
   B) Vasopressin is secreted when body fluids must be conserved.
   C) Vasopressin exhibits its greatest activity in the bladder.
   D) Vasopressin regulates the reabsorption of water from the kidney.
   E) Vasopressin is used to treat diabetes mellitus.
   Ans: B, D
   Feedback:
   The following is true of the hormone vasopressin: it is secreted by the posterior pituitary gland, is secreted when body fluids must be conserved, exhibits its greatest activity on the renal tubular epithelium, regulates the reabsorption of water from the kidney, and is used to treat diabetes insipidus.

5. A nurse is caring for a client receiving desmopressin (DDAVP). The nurse would assess the client for which of the following adverse reactions? Select all that apply.
   A) Tremor
   B) Hypotension
   C) Diaphoresis
   D) Dehydration
   E) Nausea
   Ans: A, C, E
   Feedback:
   A nurse should monitor a client taking desmopressin (DDAVP) for the following adverse reactions: tremor, diaphoresis, vertigo, nasal congestion, nausea, vomiting, abdominal cramps, and water intoxication.

6. A nurse would administer vasopressin (Pressyn) cautiously to a client with which of the following? Select all that apply.
   A) Sleep apnea
   B) Migraine headaches
   C) Asthma
   D) Seizure disorders
   E) Angina
   Ans: B, C, D, E
   Feedback:
   Vasopressin (Pressyn) is used cautiously in clients with a history of seizure disorder, migraine headaches, asthma, congestive heart failure, or vascular disease (angina and myocardial infarction).

7. Which of the following should be included in the nurse's preadministration assessment of a client receiving desmopressin (DDAVP) for relief of abdominal distention? Select all that apply.
   A) Abdominal girth
   B) Weight
   C) Pulse
   D) Respiratory rate
   E) Blood glucose
   Ans: A, C, D
   Feedback:
   Blood pressure, pulse, respiratory rate, and abdominal girth should be included in the nurse's preadministration assessment of a client receiving desmopressin (DDAVP) for relief of abdominal distention.

8. A nurse is educating a client and his family about vasopressin (DDAVP) for the treatment of diabetes insipidus. In addition to administration instructions, which of the following should the nurse discuss with the client and family? Select all that apply.
   A) Wearing a medical alert bracelet
   B) Monitoring the daily intake of fluids
   C) Avoiding sun exposure while using the drug
   D) Carrying extra doses with the client at all times
   E) Carrying liquids with the client at all times
   Ans: A, B, D, E
   Feedback:
   In addition to administration instructions, the nurse should include the following: wear a medical alert bracelet, monitor the daily intake and output of fluids, avoid the use of alcohol, and carry extra doses and liquids with the client at all times.

9. A nurse completing discharge counseling should advise a client taking vasopressin (Pressyn) to notify the physician if which of the following occur? Select all that apply.
   A) Changes in urine output
   B) Abdominal cramps
   C) Skin blanching
   D) Diarrhea
   E) Cough
   Ans: A, B, C
   Feedback:
   A nurse completing discharge counseling should advise a client taking vasopressin (Pressyn) to notify the physician if any of the following occur: a significant increase or decrease in urine output, abdominal cramps, skin blanching, nausea, confusion, headache, drowsiness, or signs of inflammation or infection at the injection sites.

10. Which of the following drugs might a nurse administer to a female client with fertility problems to help increase her chances of becoming pregnant? Select all that apply.
    A) Vasopressin (Pressyn)
    B) Clomiphene (Clomid)
    C) Octreotide (Sandostatin)
    D) Cetrorelix (Cetrotide)
    E) Gonadotropin (Menopur)
    Ans: B, D, E
    Feedback:
    A nurse might administer clomiphene (Clomid), cetrorelix (Cetrotide), or gonadotropin (Menopur) to a female client with fertility problems to help increase her chances of becoming pregnant.

11. The nurse should discontinue therapy and notify the physician if which of the following adverse reactions occurs in a client taking gonadotropin (Menopur)?
    A) Abdominal pain
    B) Visual disturbances
    C) Auditory disturbances
    D) Ascites
    Ans: B
    Feedback:
    If the patient complains of visual disturbances, the drug therapy is discontinued and the primary health care provider notified. An examination by an ophthalmologist is usually indicated. Abdominal pain and ascites are adverse reactions that may or may not require discontinuation of the drug. Auditory disturbances are not associated with this drug.

12. Which of the following should be included in the nurse's preadministration assessment of a client about to receive somatropin (Nutropin)? Select all that apply.
    A) Height
    B) Weight
    C) Blood pressure
    D) Pulse
    E) Respiratory rate
    Ans: A, B, C, D, E
    Feedback:
    Blood pressure, pulse, respiratory rate, temperature, height, and weight should be included in the nurse's preadministration assessment of a client about to receive somatropin (Nutropin).

13. A client is receiving treatment with adrenocorticotropic hormone. The nurse would instruct the client to avoid receiving which vaccine? Select all that apply.
    A) Zostavax (shingles)
    B) Meruvax (rubella)
    C) Td (tetanus and diphtheria)
    D) Fluzone (influenza)
    E) Attenuvax (measles)
    Ans: A, B, E
    Feedback:
    Clients taking ACTH should avoid any vaccination with live virus including Zostavax, Meruvax, and Attenuvax.

14. Which of the following should be included in the nurse's preadministration assessment of a client about to receive adrenocorticotropic hormone (ACTH)? Select all that apply.
    A) Lung auscultation
    B) Mental status assessment
    C) Height
    D) Pulse
    E) Skin integrity assessment
    Ans: A, B, D, E
    Feedback:
    Blood pressure, pulse, respiratory rate, temperature, weight, skin integrity assessment, mental status assessment, and lung auscultation should be included in the nurse's preadministration assessment of a client about to receive ACTH.

15. The nurse should educate a client receiving adrenocorticotropic hormone (ACTH) to report which of the following to the health care provider? Select all that apply.
    A) Malaise
    B) Sores that don't heal
    C) Otic irritation
    D) Fever
    E) Diarrhea
    Ans: A, B, D
    Feedback:
    The nurse instructs a client receiving adrenocorticotropic hormone (ACTH) to report any of the following adverse reactions to the physician: sore throat, cough, fever, malaise, sores that don't heal, or redness or irritation of the eyes.

16. A nurse suspects that a client taking short-term high-dose methylprednisolone (Medrol) is developing Cushing's syndrome based on assessment of which of the following? Select all that apply.
    A) Weight loss
    B) Moon face
    C) Buffalo hump
    D) Dry skin
    E) Hypotension
    Ans: B, C
    Feedback:
    A nurse should monitor a client taking short-term high-dose methylprednisolone (Medrol) for signs and symptoms of Cushing's syndrome, which include buffalo hump, moon face, oily skin, acne, osteoporosis, purple striae on the abdomen and hips, altered skin pigmentation, and weight gain.

17. Which of the following adrenocortical hormone drugs influence or regulate functions such as the immune response; glucose, fat, and protein metabolism; and the anti-inflammatory response? Select all that apply.
    A) Betamethasone (Celestone)
    B) Fludrocortisone (Florinef)
    C) Budesonide (Entocort EC)
    D) Hydrocortisone (Cortef)
    E) Dexamethasone (Decadron)
    Ans: A, C, D, E
    Feedback:
    Glucocorticoids, like betamethasone (Celestone), budesonide (Entocort EC), hydrocortisone (Cortef), and dexamethasone (Decadron), influence or regulate functions such as the immune response; glucose, fat, and protein metabolism; and the anti-inflammatory response.

18. A nurse is caring for a client with nocturnal enuresis. A physician has prescribed desmopressin acetate to the client. The nurse would assess the client for which of the following as a possible adverse reaction?
    A) Nasal congestion
    B) Breast tenderness
    C) Fluid retention
    D) Gynecomastia
    Ans: A
    Feedback:
    The nurse should monitor for nasal congestion, abdominal cramps, headache, and nausea in the client as the adverse reactions to desmopressin acetate. When the client is administered gonadotropin, the nurse needs to monitor for fluid retention and gynecomastia as the adverse reactions to the drug. When choriogonadotropin alfa is administered to the client, the nurse should monitor for breast tenderness, ovarian overstimulation, and vasomotor flushes as the adverse reactions to the drug.

19. A physician has prescribed vasopressin to the client for regulating the reabsorption of water by the kidneys. Which of the following assessments should the nurse perform after the administration of vasopressin?
    A) Observe for and report any evidence of edema, such as dyspnea.
    B) Measure and record the client's abdominal girth every hour.
    C) Observe the client for blanching of the skin, abdominal cramps, and nausea.
    D) Weigh the client every day to obtain a baseline weight.
    Ans: C
    Feedback:
    After vasopressin is administered to the client, the nurse should observe the client every 10 to 15 minutes for signs of an excessive dosage, which include blanching of the skin, abdominal cramps, and nausea. After corticotropin is administered to the client, the nurse needs to observe for and report any evidence of edema, such as weight gain, rales, increased pulse or dyspnea, or swollen extremities. If the client is receiving vasopressin for abdominal distention, the nurse needs to auscultate the abdomen every 15 to 30 minutes and measure abdominal girth hourly. The nurse needs to weigh the client to obtain a baseline weight for future comparison before administering vasopressin to the client.

20. A nurse is reviewing the medical history report of a client who is to receive gonadotropins. In which of the following conditions would the use of gonadotropins be contraindicated?
    A) Sensitivity to benzyl alcohol
    B) Epiphyseal closure
    C) Adrenal dysfunction
    D) Epilepsy
    Ans: C
    Feedback:
    While reviewing the medical history of the client, the nurse should identify that gonadotropins are contraindicated in clients with adrenal dysfunction, high gonadotropin levels, thyroid dysfunction, liver disease, abnormal bleeding, ovarian cysts, sex-hormone-dependent tumors, or organic intracranial lesions (pituitary tumors). Gonadotropins should be used cautiously in clients with epilepsy. Somatropin growth hormones are contraindicated in clients with sensitivity to benzyl alcohol, epiphyseal closure, and underlying cranial lesions.

21. A nurse is caring for a client who has been undergoing glucocorticoid therapy at a health care facility and is getting discharged. Which of the following instructions should the nurse include in the teaching plan for the client and family?
    A) Report any symptoms of sore throat or fever immediately.
    B) Notify the PHCP if glucose appears in the urine.
    C) Measure the amount of fluids taken each day.
    D) Take the oral drug with meals or snacks.
    Ans: D
    Feedback:
    The nurse should instruct the client to take the oral drug with meals or snacks to decrease the gastrointestinal effects and upsets in the teaching plan for the client and family. Reporting any symptoms of sore throat or fever immediately and notifying the primary health care provider if glucose appears in the urine should be included in the teaching plan for a client undergoing adrenocorticotropic hormone (ACTH) therapy. The nurse should instruct the client to measure the amount of fluids taken each day in the teaching plan for the client receiving vasopressin.

22. A client with diabetes insipidus has been prescribed vasopressin. The client's ambulatory status is limited. Which of the following would be most important for this client?
    A) Measuring the amount of fluid loss every 24 hours
    B) Refilling the water container at frequent intervals
    C) Giving four glasses of water immediately after the client takes the drug
    D) Examining the client's abdomen every 15 to 30 minutes
    Ans: B
    Feedback:
    Clients with diabetes insipidus are continually thirsty, and in this case, the client also has limited ambulatory activities. Therefore, the nurse should be careful to refill the water container at frequent intervals to ensure the availability of enough drinking water at hand for the client. The nurse need not be careful to measure the amount of fluid loss every 24 hours, give four glasses of water immediately after the client takes the drug, or examine the client's abdomen every 15 to 30 minutes. The nurse instructs the client to measure the amount of urine excreted at each voiding and then total the amount for each 24-hour period. The nurse should instruct the client to drink one or two glasses of water immediately before taking the drug. The nurse need not auscultate the abdomen every 15 to 30 minutes in a client with diabetes insipidus. The nurse auscultates the abdomen every 15 to 30 minutes in a client with abdominal distention.

23. A client is receiving corticosteroids at a health care facility. The client is also receiving digoxin as treatment for heart failure. The nurse understands that which of the following is a possibility due to the interaction of these two drugs?
    A) Increased risk for toxicity
    B) Decreased muscle function
    C) Increased risk of hyperkalemia
    D) Decreased serum corticosteroid levels
    Ans: A
    Feedback:
    The nurse should observe for an increased risk for digoxin toxicity when corticosteroids are given with digoxin. Decreased muscle function, hyperkalemia, and decreased serum corticosteroid levels are not associated with the interaction.

24. The client develops acne. What should the nurse instruct the client with acne?
    A) Use water-based cosmetics or creams.
    B) Do not receive live virus vaccines.
    C) Avoid the use of alcohol while taking the drug.
    D) Avoid exposure to infections.
    Ans: A
    Feedback:
    The nurse should instruct the client with acne to keep the affected areas clean and use over-the-counter acne drugs and water-based cosmetics or creams. The nurse need not instruct the client to stop receiving live virus vaccines, avoid using alcohol, or avoid exposure to infections. When the client is undergoing long-term or high-dose glucocorticoid therapy, the nurse should inform the client to avoid receiving live virus vaccines and avoid exposure to infections if possible in the teaching plan for the client and family. If the client is undergoing vasopressin therapy, the nurse needs to instruct the client to avoid the use of alcohol while taking the drug.

25. A physician has ordered a client to receive growth hormone subcutaneously. Which of the following tests would the nurse anticipate as required at different intervals during the treatment?
    A) Carbohydrate tolerance
    B) Serum electrolyte levels
    C) Glucose tolerance
    D) pH level of the blood
    Ans: C
    Feedback:
    Periodic testing of growth hormone levels, glucose tolerance, and thyroid functioning are required during growth hormone treatment for the client. The pH level of blood and carbohydrate tolerance testing are not required. Testing serum electrolyte levels is needed when a client is undergoing vasopressin therapy.

26. A client has been prescribed glucocorticoids for the treatment of congenital adrenal hyperplasia. Which of the following assessments should the nurse perform for the client?
    A) Take and record vital signs every 4 to 8 hours.
    B) Test the serum electrolyte levels.
    C) Auscultate the abdomen and record the findings.
    D) Observe for signs of blanching of the skin.
    Ans: A
    Feedback:
    When glucocorticoids are administered to the client, the nurse should take and record vital signs every 4 to 8 hours. The nurse need not perform assessments related to serum electrolyte levels, abdominal auscultation, or skin blanching. These are appropriate for a client receiving vasopressin therapy.

27. A nurse is assessing a client who is receiving desmopressin therapy and suspects that the client is experiencing water intoxication. Which of the following would support the nurse's suspicions? Select all that apply.
    A) Drowsiness
    B) Headache
    C) Confusion
    D) Abdominal pain
    E) Diarrhea
    Ans: A, B, C
    Feedback:
    Symptoms of water intoxication include drowsiness, listlessness, confusion, and headache (which may precede convulsions and coma). Abdominal pain and diarrhea are not associated with water intoxication.

28. A client receiving gonadotropin therapy comes to the clinic for follow-up. Which of the following would the nurse immediately report to the primary health care provider? Select all that apply.
    A) Ascites
    B) Abdominal distention
    C) Abdominal pain
    D) Weight gain
    E) Irritability
    Ans: A, B, C
    Feedback:
    The client is at risk for ovarian enlargement manifested by abdominal distention, pain, and ascites (with serious cases). The nurse would immediately notify the primary health care provider and the drug would be discontinued at the first sign of ovarian stimulation or enlargement. Weight gain and irritability would not need to be reported immediately.

29. A client is receiving corticosteroid therapy. Which nursing diagnosis would the nurse be least likely to identify for this client?
    A) Risk for Infection
    B) Disturbed Body Image
    C) Risk for Injury
    D) Deficient Fluid Volume
    Ans: D
    Feedback:
    A client who is receiving corticosteroid therapy would be least likely to have a nursing diagnosis of Deficient Fluid Volume. Rather, Excess Fluid Volume would be more appropriate. Risk for Infection related to immunosuppression, Disturbed Body Image related to cushingoid effects, and Risk for Injury related to muscle atrophy and osteoporosis would be appropriate.

30. After teaching a group of nursing students about corticosteroids, the instructor determines that the teaching was successful when the students identify which of the following as a mineralocorticoid?
    A) Hydrocortisone
    B) Betamethasone
    C) Triamcinolone
    D) Fludrocortisone
    Ans: D
    Feedback:
    Fludrocortisone is a mineralocorticoid. Hydrocortisone, betamethasone, and triamcinolone are glucocorticoids.

1. When describing the thyroid gland, the nursing instructor would include which hormones as being secreted by the thyroid gland? Select all that apply.
   A) Thyroid-stimulating hormone
   B) Adrenocorticotropic hormone
   C) Thyroxine
   D) Prolactin
   E) Tri-iodothyronine
   Ans: C, E
   Feedback:
   Thyroxine and tri-iodothyronine are hormones secreted by the thyroid gland. The anterior pituitary secretes thyroid-stimulating hormone. Prolactin and adrenocorticotropic hormone are secreted by the pituitary gland.

2. A nurse is describing the action of thyroid hormones to a client. The nurse would include information that thyroid hormones are principally concerned with the increase in the metabolic rate of tissues that can result in which of the following? Select all that apply.
   A) Increased heart rate
   B) Decreased respiratory rate
   C) Increased body temperature
   D) Increased cardiac output
   E) Decreased oxygen consumption
   Ans: A, C, D
   Feedback:
   Thyroid hormones are principally concerned with the increase in the metabolic rate of tissues, which results in increases in the heart and respiratory rate, body temperature, cardiac output, oxygen consumption, and metabolism of fats, proteins, and carbohydrates.

3. A client is diagnosed with hypothyroidism. Which of the following would the nurse expect to assess? Select all that apply.
   A) Elevated body temperature
   B) Weight gain
   C) Bradycardia
   D) Hypertension
   E) Sleepiness
   Ans: B, C, E
   Feedback:
   The signs and symptoms of hypothyroidism include decreased metabolism; cold intolerance; low body temperature; weight gain; bradycardia; hypotension; lethargy; sleepiness; pale, cool, dry skin; face appearing puffy; coarse hair; thick, hard nails; heavy menses; fertility problems; and low sperm count.

4. A group of nursing students are reviewing information about thyroid disorders. The students demonstrate understanding of the information when they identify which of the following as indicative of hyperthyroidism? Select all that apply.
   A) Low body temperature
   B) Weight loss
   C) Tachycardia
   D) Hypotension
   E) Sleepiness
   Ans: B, C
   Feedback:
   The signs and symptoms of hyperthyroidism include increased metabolism; heat intolerance; elevated body temperature; weight loss; tachycardia; hypertension; nervousness; anxiety; insomnia; exophthalmos; flushed, warm, moist skin; thinning hair; goiter; and irregular or scant menses.

5. A nurse is preparing to administer the thyroid hormone replacement drug levothyroxine to a client. The nurse understands which of the following about this drug? Select all that apply.
   A) Equivalent to all other thyroid hormone replacement drugs
   B) More uniform potency than other thyroid hormone replacement drugs
   C) Twice-daily dosing necessary
   D) Relatively inexpensive
   E) Less frequent lab monitoring required
   Ans: B, D
   Feedback:
   The following is true of the thyroid hormone replacement drug levothyroxine: it is relatively inexpensive, requires once-daily dosing, and has a more uniform potency than do other thyroid hormone replacement drugs.

6. During initial therapy with levothyroxine, the most common reactions a nurse might observe in a client include which of the following? Select all that apply.
   A) Elevated body temperature
   B) Weight loss
   C) Tachycardia
   D) Hypotension
   E) Insomnia
   Ans: A, B, C, E
   Feedback:
   During initial therapy with levothyroxine, the most common reactions a nurse would observe are signs of overdose and hyperthyroidism, which include increased metabolism; heat intolerance; elevated body temperature; weight loss; tachycardia; hypertension; nervousness; anxiety; insomnia; exophthalmos; flushed, warm, moist skin; thinning hair; goiter; and irregular or scant menses.

7. A client presents to the physician's office with complaints of worsening hypothyroidism symptoms. When questioned about medication changes, the client tells the nurse that she has recently started taking an antidepressant prescribed by another physician. Which of the following antidepressants can decrease the effectiveness of levothyroxine?
   A) Amitriptyline (Elavil)
   B) Quetiapine (Seroquel)
   C) Sertraline (Zoloft)
   D) Fluoxetine (Prozac)
   E) Topiramate (Topamax)
   Ans: C, D
   Feedback:
   Selective serotonin reuptake inhibitors (SSRIs), like sertraline (Zoloft) and fluoxetine (Prozac), can decrease the effectiveness of levothyroxine, leading to the reappearance of hypothyroidism symptoms in clients previously controlled on a dose of levothyroxine.

8. A client with a heart condition controlled on which of the following drugs must be monitored closely by the nurse for worsening atrial fibrillation if levothyroxine is initiated to treat hypothyroidism? Select all that apply.
   A) Lisinopril (Prinivil)
   B) Digoxin (Lanoxin)
   C) Diltiazem (Cardizem)
   D) Metoprolol (Toprol)
   E) Warfarin (Coumadin)
   Ans: B, D
   Feedback:
   A client with a heart condition controlled on digoxin (Lanoxin) and metoprolol (Toprol) must be monitored closely by the nurse for worsening atrial fibrillation if levothyroxine is initiated to treat hypothyroidism because levothyroxine can decrease the effectiveness of digoxin and beta blockers (metoprolol).

9. A nurse completing a preadministration assessment on a 70-year-old client prior to the administration of levothyroxine may confuse which of the following symptoms of hypothyroidism with which symptoms associated with the aging process? Select all that apply.
   A) Constipation
   B) Confusion
   C) Unsteady gait
   D) Decreased visual acuity
   E) Cold intolerance
   Ans: B, C, E
   Feedback:
   The symptoms of hypothyroidism may be confused with symptoms associated with aging, such as depression, cold intolerance, weight gain, confusion, or unsteady gait.

10. During ongoing assessment the nurse should observe a client taking levothyroxine for which of the following indicating a therapeutic response? Select all that apply.
   A) Weight loss
   B) Mild diuresis
   C) Increased appetite
   D) Increased mental activity
   E) Decreased pulse rate
   Ans: A, B, C, D
   Feedback:
   Signs of therapeutic response to levothyroxine include weight loss; mild diuresis; increased appetite; increased pulse rate; decreased puffiness of face, hands, and feet; and client report of increased mental activity and increased sense of well-being.

11. A nurse educating a client and his family about levothyroxine for the treatment of hypothyroidism should include which of the following information? Select all that apply.
   A) Therapy is lifelong.
   B) Drug is taken in the evening.
   C) Therapy needs to be evaluated every week initially.
   D) Weekly weights are needed with significant changes reported.
   E) Changing brands of the drug is okay.
   Ans: A, D
   Feedback:
   A nurse educating a client and his family about levothyroxine includes the following: therapy is lifelong, dose is taken in the morning before breakfast, therapy needs to be evaluated every 2 weeks initially, weekly weights are needed and significant changes are reported to the physician, and the client should not change brands of the drug without consulting the physician.

12. When teaching a client about his prescribed levothyroxine therapy, the nurse determines that the teaching was successful when the client states that he will contact his primary health care provider if which of the following occur? Select all that apply.
    A) Constipation
    B) Palpitations
    C) Excessive diaphoresis
    D) Significant weight changes
    E) Chest pain
    Ans: B, C, D, E
    Feedback:
    The client taking levothyroxine should contact his primary health care provider if any of the following occur: headache, nervousness, palpitations, diarrhea, excessive diaphoresis, heat intolerance, chest pain, increased pulse rate, significant weight changes, or any unusual physical change or event.

13. A nurse is providing care to a client with hyperthyroidism. Which treatment modalities would the nurse anticipate being used? Select all that apply.
    A) Levothyroxine (Synthroid)
    B) Methimazole (Tapazole)
    C) Radioactive iodine (^{131}I)
    D) Propylthiouracil (PTU)
    E) Subtotal thyroidectomy
    Ans: B, C, D, E
    Feedback:
    Methimazole (Tapazole), propylthiouracil (PTU), radioactive iodine (^{131}I), and subtotal thyroidectomy are treatment modalities used in the treatment of clients with hyperthyroidism.

14. The nurse should monitor a client receiving radioactive iodine (^{131}I) for which of the following severe reactions? Select all that apply.
    A) Agranulocytosis
    B) Exfoliative dermatitis
    C) Hypoprothrombinemia
    D) Seizures
    E) Stroke
    Ans: A, B, C
    Feedback:
    The nurse should monitor a client receiving radioactive iodine (^{131}I) for severe reactions including agranulocytosis, exfoliative dermatitis, hypoprothrombinemia, and granulocytopenia.

15. A nurse caring for a client who is receiving warfarin (Coumadin) will monitor for signs of bleeding if which of the following thyroid hormone–regulating drugs is initiated? Select all that apply.
    A) Propylthiouracil (PTU)
    B) Desiccated thyroid (Armour Thyroid)
    C) Liotrix (Thyrolar)
    D) Methimazole (Tapazole)
    E) Liothyronine (Triostat)
    Ans: A, B, C, D, E
    Feedback:
    All of the thyroid hormone replacement drugs and methimazole (Tapazole) and propylthiouracil (PTU) can increase the risk for bleeding, especially in clients taking warfarin (Coumadin).

16. A physician has ordered an iodine procedure for a client with thyroid dysfunction. What should be included in the nurse's preadministration assessment for the client? Select all that apply.
    A) Allergy history
    B) Weight
    C) Pulse
    D) Blood glucose
    E) Temperature
    Ans: A, B, C, E
    Feedback:
    The nurse's preadministration assessment for the client should include vital signs (blood pressure, respiratory rate, pulse, and temperature), allergy history, weight, and notation regarding the outward symptoms of the hyperthyroidism.

17. A nurse is caring for a client with thyrotoxicosis. The physician prescribes liotrix for the client. The nurse would be alert for the development of which of the following?
    A) Tachycardia
    B) Agranulocytosis
    C) Loss of hair
    D) Skin rash
    Ans: A
    Feedback:
    The nurse should monitor for tachycardia, palpitations, headache, nervousness, insomnia, diarrhea, vomiting, weight loss, fatigue, sweating, and flushing as adverse reactions after administering liotrix to a client with thyrotoxicosis. Agranulocytosis, loss of hair, and skin rash are not the adverse reactions to liotrix; they are adverse reactions found in a client receiving a methimazole drug.

18. A physician has prescribed desiccated thyroid USP for thyroid-stimulating hormone suppression. The client is also taking serotonin reuptake inhibitors to overcome depression. The nurse would be alert to the development of which of the following due to the interaction of the two drugs?
    A) Prolonged bleeding
    B) Decreased effectiveness of the thyroid drug
    C) Increased risk of paresthesias
    D) Increased risk of hypoglycemia
    Ans: B
    Feedback:
    The nurse should monitor for a decreased effectiveness of the thyroid drug as the result of the interaction between desiccated thyroid USP and serotonin reuptake inhibitors. When the client is receiving desiccated thyroid USP with serotonin reuptake inhibitors, there is no increase in the risk of paresthesias, hypoglycemia, or prolonged bleeding. When the client is receiving oral anticoagulants with thyroid hormones, the client is at risk of prolonged bleeding. Increased risk of hypoglycemia occurs when oral hypoglycemics and insulin are administered with thyroid hormones to the client. The nurse should observe for paresthesias as one of the adverse reactions in a client receiving antithyroid drugs.

19. A nurse is caring for a client with chronic lymphocytic thyroiditis. The physician has prescribed liothyronine to the client. The nurse understands that the drug is administered cautiously to clients with which of the following?
    A) Upper respiratory tract infection
    B) Diabetes
    C) Elevated body temperature
    D) Cardiac disease
    Ans: D
    Feedback:
    The nurse should be cautious about existing conditions such as cardiac disease and also cautious about lactating clients before administering liothyronine to clients with chronic lymphocytic thyroiditis. The nurse need not be cautious about administering liothyronine to clients with an upper respiratory tract infection, diabetes, or elevated body temperature. The nurse should be cautious about clients contracting an upper respiratory tract infection on administrating antithyroid drugs. A client with diabetes may experience an increase in diabetes while undergoing thyroid hormone replacement therapy. The nurse should observe for elevated body temperature while managing the needs of a client administered thyroid hormones.

20. A nurse is caring for a client undergoing thyroid hormone replacement therapy. The nurse instructs the client to take the drug at which time?
    A) Before bedtime
    B) Just before dinner
    C) After lunch
    D) Before breakfast
    Ans: D
    Feedback:
    The nurse should inform the client undergoing thyroid hormone replacement therapy to take the drug in the morning, preferably before breakfast. The nurse should not ask the client to take the drug before bedtime, just before dinner, or after lunch as that is not generally recommended by the health care provider.

21. A physician has prescribed a thyroid supplement for a client with euthyroid goiter. Which of the following should the nurse include in the nursing diagnosis checklist?
    A) Disturbed Thought Processes related to adverse drug reactions
    B) Anxiety related to symptoms, adverse reactions, and treatment regimen
    C) Risk for Infection related to adverse drug reactions
    D) Risk for Impaired Skin Integrity related to adverse reactions
    Ans: B
    Feedback:
    The nurse should include Anxiety related to symptoms, adverse reactions, and treatment regimen as a nursing diagnosis. Disturbed Thought Processes related to adverse drug reactions, Risk for Infection, and Risk for Impaired Skin Integrity related to adverse drug reactions are inappropriate. Risk for Infection related to adverse drug reactions and Risk for Impaired Skin Integrity related to adverse reactions would be appropriate for a client receiving antithyroid drugs. Disturbed Thought Processes may apply for a client receiving ACTH.

22. A nurse is caring for a client with hyperthyroidism. The physician prescribes methimazole to the client. The nurse observes that the client has developed skin rashes after the drug is administered. Which of the following interventions should the nurse perform while caring for the client?
    A) Offer suggestions to alter the drug schedule.
    B) Instruct the client to avoid applying lubricants.
    C) Instruct the client to use soap sparingly.
    D) Check if discoloration of the hair occurs.
    Ans: C
    Feedback:
    The nurse should instruct the client to use soap sparingly and apply soothing creams or lubricants until the rash subsides. The nurse need not offer suggestions to alter the drug schedule, instruct the client to avoid applying lubricants, or check if discoloration of hair occurs.

23. A client diagnosed with hyperthyroidism has been prescribed propylthiouracil. After administering the drug, the nurse would assess the client for which of the following?
    A) Skin rash
    B) Tachycardia
    C) Nervousness
    D) Constipation
    Ans: A
    Feedback:
    The adverse reactions to propylthiouracil include paresthesias, numbness, headache, skin rash, nausea, vomiting, and agranulocytosis. The nurse need not observe for tachycardia, nervousness, and constipation as adverse reactions associated with propylthiouracil. Tachycardia, nervousness, and vomiting are the adverse reactions associated with the thyroid hormone levothyroxine sodium (T_4).

24. A nurse is caring for a client with thyroid storm. Which of the following would the nurse expect to assess?
    A) Memory impairment
    B) Cold intolerance
    C) Constipation
    D) Altered mental status
    Ans: D
    Feedback:
    A severe form of hyperthyroidism called thyroid storm is characterized by high fever, extreme tachycardia, and altered mental status. The nurse need not observe for memory impairment, cold intolerance, or constipation as characteristics of thyroid storm. Memory impairment, cold intolerance, and constipation are the manifestations of myxedema, which is a severe form of hypothyroidism.

25. A nurse is caring for a client who is prescribed thyroid hormone replacement. From which of the following signs during ongoing assessment should the nurse conclude that the client is responding to the therapy?
    A) Increased appetite
    B) Swollen neck
    C) Excessive sweating
    D) Flushing
    Ans: A
    Feedback:
    The nurse should observe for signs of therapeutic responses, which include increased appetite, weight loss, mild diuresis, an increased pulse rate, and decreased puffiness of the face, hands, and feet. The nurse need not observe for swollen neck, excessive sweating, or heat intolerance as signs of responding to therapy. Swollen neck, sore throat, and cough may occur after 2 to 3 days of administering radioactive iodine. Sweating and flushing are the adverse reactions to thyroid hormones.

26. A client is diagnosed with euthyroid goiter. The nurse would expect to administer which of the following?
    A) Levothyroxine
    B) Methimazole
    C) Propylthiouracil
    D) Sodium iodide
    Ans: A
    Feedback:
    Euthyroid goiter is treated with thyroid hormones, such as levothyroxine. Methimazole, propylthiouracil, and sodium iodide are used to treat hyperthyroidism.

27. After teaching a client who is prescribed methimazole, the nurse determines that the teaching was effective when the client states which of the following? Select all that apply.
    A) "I need to take the drug around the clock."
    B) "I should call my primary health care provider if I have a fever."
    C) "I can use any over-the-counter medications if I need to."
    D) "I might have some tenderness and swelling of my neck."
    E) "I don't need to monitor my weight like I did before."
    Ans: A, B
    Feedback:
    The client taking methimazole should take the drug as prescribed around the clock and call the primary health care provider if he develops fever, sore throat, cough, easy bleeding or bruising, headache, or a general feeling of malaise. The client also needs to check with the prescriber before using any nonprescription drugs and monitor his weight twice a week, notifying the primary health care provider if there is any sudden weight gain or loss. Tenderness and swelling would be noted if the client received radioactive iodine for a procedure.

28. After teaching a group of nursing students about thyroid drugs, the instructor determines that the teaching was successful when the students identify which of the following as an antithyroid drug? Select all that apply.
    A) Propylthiouracil
    B) Levothyroxine
    C) Liotrix
    D) Desiccated thyroid
    E) Methimazole
    Ans: A, E
    Feedback:
    Propylthiouracil and methimazole are antithyroid drugs. Levothyroxine, liotrix, and desiccated thyroid are thyroid hormone supplements.

29. A nurse is assessing a client who is prescribed levothyroxine. The nurse understands that this drug is prescribed to treat the thyroid condition associated with which of the following symptoms? Select all that apply.
    A) Nervousness
    B) Anorexia
    C) Coarse hair
    D) Cold intolerance
    E) Tachycardia
    Ans: B, C, D
    Feedback:
    Levothyroxine is used to treat hypothyroidism manifested by anorexia, coarse hair, cold intolerance, lethargy, and bradycardia.

30. A client is diagnosed with thyroid cancer. Which drug would the nurse anticipate being prescribed for the client?
    A) Iodine-131
    B) Methimazole
    C) Propylthiouracil
    D) Liothyronine
    Ans: A
    Feedback:
    Radioactive iodine (^{131}I) is used for the treatment of hyperthyroidism and cancer of the thyroid. Methimazole and propylthiouracil are used to manage hyperthyroidism. Liothyronine is used to treat hypothyroidism.

1. A nursing instructor is describing the role of androgens to a nursing class. The instructor determines that the class was successful when the students identify that from puberty onward, androgens continue to aid in the development and maintenance of secondary sex characteristics that include which of the following? Select all that apply.
   A) Body fat distribution
   B) Muscle development
   C) Epiphyseal growth
   D) Glucose metabolism
   E) Body hair
   Ans: A, B, E
   Feedback:
   From puberty onward, androgens continue to aid in the development and maintenance of secondary sex characteristics, which include facial hair, deep voice, body hair, body fat distribution, and muscle development.

2. A nurse may be asked to administer androgen drugs to clients with which of the following medical conditions? Select all that apply.
   A) Anemia of renal insufficiency
   B) Hypogonadism
   C) Postmenopausal metastatic breast carcinoma
   D) Male-pattern baldness
   E) Benign prostatic hypertrophy
   Ans: B, C
   Feedback:
   A nurse may be asked to administer androgen drugs to clients with the following medical conditions: testosterone deficiency, hypogonadism, delayed puberty, testosterone deficiency after puberty, postmenopausal metastatic breast carcinoma, and premenopausal, hormone-dependent metastatic breast carcinoma.

3. A nurse should advise a client beginning therapy with testosterone (Androderm) about which of the following adverse effects? Select all that apply.
   A) Impotence
   B) Fluid retention
   C) Male-pattern baldness
   D) Somnolence
   E) Mania
   Ans: A, B, C
   Feedback:
   A nurse should advise a client beginning therapy with testosterone (Androderm) of the following adverse effects: gynecomastia, testicular atrophy, inhibition of testicular function, impotence, enlargement of the penis, nausea, vomiting, jaundice, headache, anxiety, male-pattern baldness, acne, depression, and fluid and electrolyte imbalances (which include sodium, water, chloride, potassium, calcium, and phosphate retention).

4. A female client with inoperable advanced breast cancer is prescribed methyltestosterone. The nurse would be alert for the development of which of the following? Select all that apply.
   A) Amenorrhea
   B) Acne
   C) Facial hair growth
   D) Somnolence
   E) Mania
   Ans: A, B, C
   Feedback:
   A nurse should advise a female client beginning therapy with methyltestosterone (Testred) for the treatment of inoperable advanced breast carcinoma of the following adverse reactions: amenorrhea, other menstrual irregularities, acne, male-pattern baldness, and virilization (facial hair growth, voice deepening, and clitoromegaly).

5. A nurse suspects a client might be abusing anabolic steroids. Which of the following signs might a client exhibit that would indicate abuse of anabolic steroids? Select all that apply.
   A) Uncontrolled rage
   B) Jaundice
   C) Inability to concentrate
   D) Acne
   E) Severe depression
   Ans: A, B, C, D, E
   Feedback:
   A client abusing anabolic steroids might exhibit the following signs: uncontrolled rage, severe depression, suicidal tendencies, malignant or benign liver tumors, aggressive behavior, inability to concentrate, personality changes, acne, jaundice, anorexia, male-pattern baldness, fluid and electrolyte imbalances, and muscle cramps.

6. A nurse's preadministration assessment for a client about the receive oxymetholone (Anadrol-50) should include which of the following? Select all that apply.
   A) Weight
   B) Blood glucose
   C) Serum lipid levels
   D) Hepatic function tests
   E) Pain assessment
   Ans: A, C, D
   Feedback:
   A nurse's preadministration assessment for a client about the receive oxymetholone (Anadrol-50) should include weight, blood pressure, pulse, respiratory rate, complete blood count, hepatic function tests, serum electrolytes, and serum lipid levels.

7. A nurse is describing the action of estrogen in the female body to a client. Which of the following would the nurse include? Select all that apply.
   A) Diuresis
   B) Calcium and phosphorus conservation
   C) Thinning of the cervical mucus
   D) Protein catabolism
   E) Stimulation of fallopian tube contraction
   Ans: B, C, E
   Feedback:
   The actions of estrogen on the female body include fluid retention, calcium and phosphorus conservation, protein anabolism, thinning of the cervical mucus, stimulation of fallopian tube contraction, growth of axillary and pubic hair, restoration of the endometrium after menstruation, and at puberty promotion of growth and development of the vagina, uterus, fallopian tubes, and breasts.

8. A female client is prescribed norethindrone (Aygestin). The nurse understands that this drug is indicated for which of the following? Select all that apply.
   A) Treatment of amenorrhea
   B) Treatment of edema
   C) Treatment of endometriosis
   D) Pregnancy prevention
   E) Prevention of estrogen-dependent breast carcinoma
   Ans: A, C, D
   Feedback:
   Progestins, like norethindrone (Aygestin), are used to treat amenorrhea, endometriosis, and functional uterine bleeding and to prevent pregnancy.

9. A nurse is teaching a client about the use of estradiol (Estrace). The nurse warns the client of which of the following dermatologic reactions that may continue after drug discontinuation? Select all that apply.
   A) Dermatitis
   B) Stevens-Johnson syndrome
   C) Pruritus
   D) Chloasma
   E) Melasma
   Ans: D, E
   Feedback:
   Chloasma and melasma are dermatologic reactions that can result from the use of estrogens, like estradiol (Estrace), and may continue when use of the drug is discontinued.

10. A client with estrogen excess may report which of the following symptoms to the nurse during ongoing assessment during treatment with Ortho-Novum 7/7/7? Select all that apply.
    A) Nausea
    B) Early breakthrough bleeding
    C) Cervical mucorrhea
    D) Edema
    E) Increased spotting
    Ans: A, C, D
    Feedback:
    Signs of excess estrogen include nausea, bloating, cervical mucorrhea, polyposis, hypertension, migraine headache, breast fullness or tenderness, and edema.

11. A client with progestin excess may report which of the following symptoms to the nurse during ongoing assessment during treatment with Estrostep Fe? Select all that apply.
    A) Amenorrhea
    B) Late breakthrough bleeding
    C) Hair loss
    D) Weight gain
    E) Hirsutism
    Ans: C, D, E
    Feedback:
    Signs of excess progestin include increased appetite, weight gain, tiredness, fatigue, hypomenorrhea, acne, oily scalp, hair loss, hirsutism, depression, monilial vaginitis, and breast regression.

12. A nurse educating a client on Ortho Tri-Cyclen Lo should strongly caution the client not to smoke because smoking increases the risk of which of the following adverse events? Select all that apply.
    A) Venous thromboembolism
    B) Arterial thromboembolism
    C) Hemorrhagic stroke
    D) Myocardial infarction
    E) Thrombotic stroke
    Ans: A, B, C, D, E
    Feedback:
    Smoking while taking oral contraceptives, like Ortho Tri-Cyclen Lo, increases a client's risk for venous and arterial thromboembolism, myocardial infarction, and thrombotic and hemorrhagic stroke.

13. When completing the ongoing assessment of clients receiving estrogen, progestin, or combination products, which of the following would the nurse include? Select all that apply.
    A) Blood pressure
    B) Pulse
    C) Respiratory rate
    D) Temperature
    E) Therapeutic effects
    Ans: A, B, C, E
    Feedback:
    The nurse's ongoing assessment of clients receiving estrogen, progestin, or combination products should include blood pressure, pulse, respiratory rate, weight, and questioning about adverse effects and therapeutic effects.

14. A nurse is teaching a client about transdermal estrogen therapy. The nurse understands that this method of delivery has been found to be safer especially for women with which of the following conditions? Select all that apply.
    A) Hypertriglyceridemia
    B) Type 2 diabetes
    C) Migraine headaches
    D) Hypertension
    E) Rheumatoid arthritis
    Ans: A, B, C, D
    Feedback:
    Transdermal delivery of estrogens has been found to be safer especially for women with hypertriglyceridemia, type 2 diabetes, hypertension, and migraine headaches and those who smoke.

15. An 80-year-old client with chronic renal insufficiency is prescribed anabolic steroid therapy for the management of anemia associated with renal insufficiency. The nurse understands that this client is at increased risk for which of the following?
    A) Hypoglycemic attacks
    B) Serious cardiac disease
    C) Hypotensive shock
    D) Cancer of the prostate
    Ans: D
    Feedback:
    Elderly clients undergoing anabolic steroid therapy are at an increased risk of developing cancer of the prostate gland. Therefore, anabolic steroid therapy needs to be administered cautiously in these clients. Hypoglycemic attacks, serious cardiac disease, and hypotensive shock are not seen in elderly clients on anabolic steroid therapy.

16. A nurse is caring for a client with advanced breast cancer who is receiving androgen therapy. Which of the following signs might alert the nurse to the possibility of liver toxicity?
    A) Edema of the feet
    B) Increase in appetite
    C) Clinical jaundice
    D) Increase in weight
    Ans: C
    Feedback:
    Liver toxicity is indicated by the presence of jaundice. Edema of the feet and an increase in weight may be seen because of fluid and electrolyte imbalance but does not indicate liver toxicity. An increase in appetite shows that the client is responding well to the drug and is not a sign of liver toxicity.

17. When caring for a client receiving estrogen replacement therapy for postmenopausal symptoms, the nurse documents a diagnosis of Ineffective Tissue Perfusion. Which of the following conditions is the nurse referring to in the diagnosis?
    A) Thromboembolism
    B) Edema of the feet
    C) Gastrointestinal upset
    D) Chloasma
    Ans: A
    Feedback:
    The nursing diagnosis of Ineffective Tissue Perfusion is related to thromboembolism, which is a complication of estrogen replacement therapy. A nurse may note other female hormone–related adverse reactions such as edema of the feet due to excess fluid volume or gastrointestinal upset, which manifests as nausea, vomiting, abdominal cramps, and bloating. Chloasma is a dermatologic reaction due to female hormones, which results in excessive pigmentation of the skin.

18. A client with delayed puberty has been advised to undertake transdermal androgen therapy, Androderm. Which of the following instructions should the nurse provide the client to help promote an optimal response to this therapy?
    A) Apply the Androderm to the underside of the scrotum.
    B) Repeat the application to the scrotum after 3 days.
    C) Moisten the skin before the application.
    D) Apply immediately after removing the cover.
    Ans: D
    Feedback:
    Applying the system immediately after opening the pouch and removing the protective cover may help obtain an optimal response to the transdermal androgen delivery system. The drug should not be applied to the underside of the scrotum. It is applied to clean, dry skin on the abdomen, thigh, back, or upper arm. Thus, the skin should not be moistened before the application; rather, it should be dry. Seven days should be allowed between applications to a specific site, and application to the same site should not be repeated after 3 days.

19. A female client receiving fluoxymesterone for metastatic breast cancer is disturbed by the physical changes seen in her body. The nurse provides support to the client based on assessment of which of the following features the client is experiencing related to this therapy?
    A) Deepening of the voice
    B) Hypopigmentation of the skin
    C) Decrease in clitoris size
    D) Increase in body weight
    Ans: A
    Feedback:
    Deepening of the voice may be seen as a feature of virilization following male hormone therapy in a female client. Virilization is the acquisition of male characteristics in the female. Other features of virilization include pigmentation, and not hypopigmentation, of the skin and an increase, not a decrease, in the size of the clitoris. An increase in body weight is not a sign of virilization. It may occur due to impaired nutrition of the body.

20. A nurse is caring for a client receiving norethindrone for endometriosis. After administering the drug, the nurse would assess the client for which of the following? Select all that apply.
    A) Breast tenderness
    B) Edema
    C) Somnolence
    D) Hyperglycemia
    E) Thinning hair
    Ans: A, B
    Feedback:
    Adverse reactions associated with norethindrone, a progestin, include breast tenderness, edema, insomnia, breakthrough bleeding, weight changes, and acne. Hyperglycemia and thinning hair are not associated with norethindrone.

21. A client taking oral contraceptive drugs complains of occasional bloating of the abdomen. Which of the following instructions should the nurse offer the client to help alleviate the condition?
    A) Limit fluid intake with meals.
    B) Take the drug along with food.
    C) Decrease the intake of salt.
    D) Elevate the legs when sitting.
    Ans: A
    Feedback:
    The nurse should instruct the client to limit fluid intake with meals if she experiences bloating of the abdomen after oral contraceptive use. Light to moderate exercise also may be helpful. Taking the drug with food alleviates nausea and GI irritation, and not the bloating of the abdomen. A decrease in salt intake causes a decrease in the intake of sodium, which may be beneficial when there is an excess fluid volume, and not when there is bloating of the abdomen. Elevating the legs when sitting prevents thromboembolism seen with oral contraceptive use. It does not prevent bloating of the abdomen.

22. A nurse is conducting a presentation for a young adult women's group about oral contraceptives and the risks. Which of the following would the nurse include as an increased risk?
    A) Fibrocystic breast disease
    B) Ovarian cysts
    C) Endometrial cancer
    D) Hepatic adenoma
    Ans: D
    Feedback:
    The risks of hepatic adenoma may be increased with the use of oral contraceptives. Oral contraceptives also increase the risk of cardiovascular diseases, thromboembolic disorders, strokes, visual disturbances, gallbladder disease, hypertension, and fetal abnormalities. The risks of fibrocystic breast disease, ovarian cysts, and endometrial cancer are decreased, not increased, with the use of oral contraceptives.

23. A client has a levonorgestrel implant contraceptive system inserted. The nurse understands that this type of contraceptive provides protection for how long?
    A) 1 year
    B) 2 years
    C) 5 years
    D) 8 years
    Ans: C
    Feedback:
    Levonorgestrel, a progestin, is available as an implant contraceptive system (Norplant System). Six capsules, each containing levonorgestrel, are implanted using local anesthesia in the subdermal (below the skin) tissues of the midportion of the upper arm. The capsules provide contraceptive protection for 5 years but may be removed at any time at the request of the patient.

24. After reviewing the various contraceptive options with a client, the client opts for the etonogestrel/ethinyl estradiol vaginal ring. After teaching the client about this choice, the nurse determines that the teaching was effective when the client states which of the following?
    A) "Once I insert the ring, it won't come out."
    B) "The ring should stay in place for 3 weeks."
    C) "When bleeding starts, that's the signal to change the ring."
    D) "I can reuse the ring several times before discarding it."
    Ans: B
    Feedback:
    When using the vaginal ring, the client should insert the ring and keep it in place for 3 weeks and then remove it on the same day of the week it was inserted. The ring can be expelled accidentally, such as with straining on defecation or removing a tampon. Typically, bleeding occurs once the ring is removed. The ring should be discarded after each use.

25. A nurse is developing a teaching plan for a client who is prescribed testosterone gel. The nurse instructs the client to apply the gel to which location? Select all that apply.
    A) Shoulders
    B) Upper arms
    C) Abdomen
    D) Thighs
    E) Groin
    Ans: A, B, C
    Feedback:
    Testosterone gel (AndroGel) is applied once daily (preferably in the morning) to clean, dry, intact skin of the shoulders, upper arms, or abdomen.

26. A group of nursing students are reviewing information about male and female hormones. The students demonstrate understanding of the information when they identify which of the following as an anabolic steroid? Select all that apply.
    A) Nandrolone
    B) Oxymetholone
    C) Oxandrolone
    D) Testosterone
    E) Fluoxymesterone
    Ans: A, B, C
    Feedback:
    Anabolic steroids include nandrolone, oxymetholone, and oxandrolone. Testosterone and fluoxymesterone are testosterones.

1. After teaching a group of students about uterine drugs, the instructor determines that the teaching was successful when the students identify which of the following as oxytocic drugs? Select all that apply.
   A) Oxytocin (Pitocin)
   B) Methylergonovine (Methergine)
   C) Estradiol (Estrace)
   D) Indomethacin (Indocin)
   E) Misoprostol (Cytotec)
   Ans: A, B, E
   Feedback:
   Oxytocin (Pitocin), methylergonovine (Methergine), and misoprostol (Cytotec) are classified as oxytocic drugs. Indomethacin is a tocolytic. Estradiol is an estrogen.

2. When explaining the action of oxytocin to a client, the nurse integrates knowledge of which of the following about the drug? Select all that apply.
   A) Secretion by the anterior pituitary gland
   B) Uterine-stimulating properties
   C) Diuretic effects
   D) Vasopressor effects
   E) Stimulation of milk ejection
   Ans: B, D, E
   Feedback:
   Oxytocin is a hormone secreted by the posterior pituitary gland that has uterine-stimulating properties, exerts antidiuretic and vasopressor effects, and stimulates milk ejection.

3. A nurse is preparing to administer oxytocin (Pitocin) intravenously to a client based on the understanding that this drug is used for which of the following reasons? Select all that apply.
   A) Gestational diabetes and a large fetus
   B) Rh problems
   C) Premature rupture of membranes
   D) Uterine inertia
   E) Pregnancy-induced hypertension
   Ans: A, B, C, D, E
   Feedback:
   A nurse may be asked to administer oxytocin (Pitocin) intravenously to a client with the following: gestational diabetes and a large fetus, Rh problems, premature rupture of membranes, uterine inertia, or pregnancy-induced hypertension.

4. The nurse is preparing to administer a prescribed drug to help prevent hemorrhage caused by uterine atony. Which drug would the nurse most likely administer? Select all that apply.
   A) Carboprost (Hemabate)
   B) Indomethacin (Indocin)
   C) Methylergonovine (Methergine)
   D) Terbutaline (Brethine)
   E) Misoprostol (Cytotec)
   Ans: A, C, E
   Feedback:
   Carboprost (Hemabate), methylergonovine (Methergine), misoprostol (Cytotec), and ergonovine (Ergotrate) are used postpartum to prevent hemorrhage caused by uterine atony. Indomethacin and terbutaline are used as tocolytics.

5. A nurse prepares to administer oxytocin (Pitocin) intramuscularly during the third stage of labor for which of the following reasons? Select all that apply.
   A) Production of uterine contractions
   B) Stimulation of milk ejection
   C) Control of postpartum bleeding
   D) Initiation of labor
   E) Control of postpartum hemorrhage
   Ans: A, C, E
   Feedback:
   Oxytocin (Pitocin) may be given intramuscularly during the third stage of labor to produce uterine contractions and control postpartum bleeding and hemorrhage.

6. A nurse administering oxytocin (Pitocin) to a client should monitor the client for which of the following? Select all that apply.
   A) Water intoxication
   B) Diarrhea
   C) Uterine rupture
   D) Headache
   E) Cardiac arrhythmias
   Ans: A, C, E
   Feedback:
   A nurse should monitor a client receiving oxytocin (Pitocin) for the following adverse reactions: fetal bradycardia, uterine rupture, uterine hypertonicity, nausea, vomiting, cardiac arrhythmias, and anaphylactic reactions. Serious water intoxication (fluid overload, fluid volume excess) may occur, particularly when the drug is administered by continuous infusion and the patient is receiving fluids by mouth.

7. A client is receiving methylergonovine (Methergine). After administering the drug, the nurse would be alert for which of the following? Select all that apply.
   A) Chest pain
   B) Hypoglycemia
   C) Increase in blood pressure
   D) Diarrhea
   E) Water intoxication
   Ans: A, C, D
   Feedback:
   Adverse reactions associated with methylergonovine include temporary chest pain, hypertension, diarrhea, nausea, vomiting, dizziness, and headache.

8. A nurse understands that methylergonovine (Methergine) should not be administered to which client because excessive vasoconstriction may result? Select all that apply.
   A) Client who is a heavy smoker
   B) Client taking a diuretic
   C) Client receiving insulin
   D) Client taking an antihypertensive
   E) Client taking a vasopressor
   Ans: A, E
   Feedback:
   When methylergonovine (Methergine) is administered concurrently with vasopressors or to clients who are heavy smokers, excessive vasoconstriction may result.

9. Before beginning an IV infusion of oxytocin (Pitocin) to induce labor, the nurse obtains an obstetric history that includes which of the following? Select all that apply.
   A) Parity
   B) Stillbirths
   C) Abortions
   D) Previous obstetric problems
   E) Type of labor
   Ans: A, B, C, D, E
   Feedback:
   Before beginning an IV infusion of oxytocin (Pitocin) to induce labor, the nurse obtains an obstetric history that includes parity, gravidity, previous obstetric problems, type of labor, stillbirths, abortions, and live-birth infant abnormalities.

10. Immediately before starting an IV infusion of oxytocin (Pitocin), the nurse assesses which of the following? Select all that apply.
    A) Client's blood pressure
    B) Fetal heart rate
    C) Client's blood glucose
    D) Client's temperature
    E) Client's respiratory rate
    Ans: A, B, E
    Feedback:
    Immediately before starting an IV infusion of oxytocin (Pitocin), the nurse assesses the fetal heart rate and the client's blood pressure, pulse, and respiratory rate.

11. After administering an injection of oxytocin (Pitocin), the nurse continues to assess which of the following? Select all that apply.
    A) Blood pressure
    B) Blood glucose
    C) Pulse
    D) Temperature
    E) Respiratory rate
    Ans: A, C, E
    Feedback:
    After an injection of oxytocin (Pitocin), during ongoing assessment the nurse monitors the following: the client's blood pressure, pulse, and respiratory rate.

12. When monitoring uterine contractions of a client receiving an oxytocin infusion, the nurse should notify the primary health care provider immediately if which of the following occur? Select all that apply.
    A) No palpable relaxation of the uterus
    B) Significant change in client's blood pressure
    C) Significant change in fetal heart rhythm
    D) Significant change in rhythm of uterine contractions
    E) Significant change in frequency of uterine contractions
    Ans: A, B, C, D, E
    Feedback:
    When monitoring uterine contractions, the nurse should notify the physician immediately if any of the following occur: a significant change in fetal heart rate or rhythm; a marked change in the frequency, rate, or rhythm of uterine contractions; uterine contractions lasting longer than 60 seconds; contractions occurring more frequently than every 2 or 3 minutes; no palpable relaxation of the uterus; a marked increase or decrease in the client's blood pressure or pulse; or any significant change in the client's general condition.

13. A nurse suspects that a client receiving an oxytocic drug is developing water intoxication based on assessment of which of the following? Select all that apply.
    A) Tachypnea
    B) Wheezing
    C) Confusion
    D) Hypoglycemia
    E) Hypotension
    Ans: A, B, C
    Feedback:
    The nurse immediately reports any signs of water intoxication or fluid overload, which include drowsiness, confusion, headache, listlessness, wheezing, coughing, and tachypnea, to the physician.

14. A nurse is preparing to administer a drug that is used to prevent uterine contractions. Which drug might the nurse be preparing to administer? Select all that apply.
    A) Misoprostol (Cytotec)
    B) Indomethacin (Indocin)
    C) Terbutaline (Brethine)
    D) Oxytocin (Pitocin)
    E) Dinoprostone (Cervidil)
    Ans: B, C
    Feedback:
    Tocolytics, like indomethacin (Indocin) and terbutaline (Brethine), are used to prevent uterine contractions. Misoprostol and oxytocin are uterine stimulants. Dinoprostone is used to ripen the cervix.

15. A nurse should monitor a client for which of the following adverse reactions during the administration of tocolytic therapy to prevent uterine contractions? Select all that apply.
    A) Fatigue
    B) Diaphoresis
    C) Diplopia
    D) Hypertension
    E) Prolonged vaginal bleeding
    Ans: A, B, C
    Feedback:
    A nurse should monitor a client for the following adverse reactions during tocolytic therapy to prevent uterine contractions: fatigue, flushing, headache, diplopia, diaphoresis, hypotension, depressed reflexes, and flaccid paralysis.

16. A nurse is administering magnesium to a client as part of therapy to halt preterm labor. The nurse is alert to the possibility of increased central nervous system depression if the client is also receiving which of the following? Select all that apply.
    A) Fentanyl (Duragesic)
    B) Glyburide (DiaBeta)
    C) Lorazepam (Ativan)
    D) Meperidine (Demerol)
    E) Enalapril (Vasotec)
    Ans: A, C, D
    Feedback:
    The administration of magnesium with the following drugs results in increased central nervous system depression: opioids (fentanyl and meperidine), sedatives (lorazepam), and analgesics.

17. A client has received a special formulation of oxytocin for intranasal use. The nurse understands that the rationale for using this formulation of the drug involves which effect?
    A) Antistimulating properties on the uterus
    B) Diuretic effect
    C) Stimulation of the milk ejection reflex
    D) Control of antepartum bleeding
    Ans: C
    Feedback:
    Oxytocin, when administered intranasally, stimulates the milk ejection (milk letdown) reflex. Oxytocin has uterine-stimulating properties, not antistimulating properties, on the uterus. Tocolytics have an antistimulating effect on the uterus. Oxytocin has an antidiuretic effect, which might lead to a danger of excessive fluid volume (water intoxication), and not a diuretic effect. Oxytocin is given IM during the third stage of labor to produce uterine contractions and control postpartum, and not antepartum, bleeding and hemorrhage.

18. A 32-year-old pregnant woman has been prescribed an IV infusion of oxytocin to induce labor. Which of the following interventions would be most appropriate for the nurse to implement before starting the IV infusion of oxytocin for the client?
    A) Ask the client to drink plenty of water.
    B) Obtain an obstetric and general health history.
    C) Examine for signs of water intoxication.
    D) Place the client in an upright position.
    Ans: B
    Feedback:
    Before starting an IV infusion of oxytocin to induce labor, the nurse should obtain a complete obstetric history (e.g., parity, gravidity, previous obstetric problems, type of labor, stillbirths, abortions, live-birth infant abnormalities) and a general health history. Clients should not have water before labor, as the oxytocin may lead to water intoxication. The nurse should examine for any signs of water intoxication or fluid overload as a sign of an adverse reaction to the drug and need not assess this before administration of the medication. Placing the client in an upright position is advised when oxytocin is administered intranasally to facilitate the letdown of milk for breastfeeding.

19. A client receiving prescribed magnesium sulfate shows signs of dyspnea, tachycardia, and increased respiratory rate and rales. The nurse notices frothy sputum. Which of the following conditions should the nurse suspect?
    A) Pulmonary edema
    B) Water intoxication
    C) Renal failure
    D) Cardiac arrest
    Ans: A
    Feedback:
    The client is most likely experiencing pulmonary edema. If there is an increase in respiratory rate of more than 20 respirations/min with the administration of magnesium sulfate, the nurse should assess the respiratory status for symptoms of pulmonary edema such as dyspnea, tachycardia, rales, and frothy sputum. In such cases, the primary health care provider is notified immediately because use of the drug may be discontinued or the dosage may be decreased. The danger of water intoxication is associated with oxytocin as it has an antidiuretic effect, and not with magnesium sulfate. Renal failure and cardiac arrest are not associated with magnesium sulfate.

20. A 30-year-old pregnant woman has been prescribed oxytocin. When assessing the client's drug regimen, the nurse understands that the client is taking vasopressors. Which of the following risks is the client most susceptible to if oxytocin is administered along with vasopressors?
    A) Anaphylactic shock
    B) Hypertension
    C) Respiratory failure
    D) Heart attack
    Ans: B
    Feedback:
    Combining oxytocin with vasopressor drugs increases the risk of severe hypertension. Combining oxytocin and vasopressors does not increase the risk of heart attack or respiratory failure. Anaphylactic shock is associated with a hypersensitivity reaction and does not occur with the interaction of vasopressors and oxytocin.

21. A 31-year-old pregnant woman has been prescribed a tocolytic drug. The nurse understands that this drug is primarily indicated for which of the following?
    A) Antepartal hypertension
    B) Preterm labor
    C) Postpartum hemorrhage
    D) Protracted labor
    Ans: B
    Feedback:
    Drugs used to prevent uterine contractions are called tocolytics. They are useful in the management of preterm labor. These drugs will decrease uterine activity and prolong the pregnancy to allow the fetus to develop more fully, thereby increasing the chance of neonatal survival. Oxytocic drugs are used antepartum (before birth of the neonate) to induce uterine contractions and initiate or augment labor. Tocolytics are not used for postpartum hemorrhage or protracted labor.

22. A nurse is caring for a pregnant client receiving oxytocin. The client is in the third stage of labor. The nurse would expect to administer oxytocin by which route?
    A) Intravenous
    B) Intramuscular
    C) Subcutaneous
    D) Intranasal
    Ans: B
    Feedback:
    Oxytocin is given intramuscularly (IM) during the third stage of labor. It is the time period from when the neonate is expelled until the placenta is expelled. Oxytocin is given intramuscularly to produce uterine contractions and control postpartum bleeding and hemorrhage. Oxytocin is not given intravenously, subcutaneously, or intranasally during the third stage of labor.

23. A client is receiving terbutaline for preterm labor. After administering the drug, the nurse would be alert for which of the following as an adverse reaction? Select all that apply.
    A) Diplopia
    B) Nervousness
    C) Tremor
    D) Palpitations
    E) Heartburn
    Ans: B, C, D
    Feedback:
    Adverse reactions associated with terbutaline include nervousness, restlessness, tremor, headache, anxiety, hypertension, palpitations, arrhythmias, hypokalemia, and pulmonary edema. Diplopia and heartburn are associated with indomethacin.

24. A client who is receiving a tocolytic develops hypotension. The nurse would notify the primary health care provider and place the client in which position?
    A) Supine
    B) Lithotomy
    C) Left lateral
    D) Knee–chest
    Ans: C
    Feedback:
    If a client develops hypotension while receiving a tocolytic drug, the nurse would notify the primary health care provider and place the client in the left lateral position to promote adequate fetal perfusion until the provider orders otherwise.

25. A client is admitted for tocolytic therapy for preterm labor. The client states, “I'm so afraid that I'm so early. Is my baby okay? What if the drug doesn't help?” Based on the client's statement, the nurse would identify which nursing diagnosis as the priority?
    A) Anxiety
    B) Risk for Injury
    C) Impaired Gas Exchange
    D) Excess Fluid Volume
    Ans: A
    Feedback:
    Based on the client's statements, the nurse would identify Anxiety as the priority nursing diagnosis because of the client's stated concern for her fetus and cessation of labor. Risk for Injury and Excess Fluid Volume would be more appropriate for a client receiving oxytocin. Impaired Gas Exchange would be appropriate if the client was experiencing adverse reactions related to the tocolytic.

26. A client is to receive indomethacin as tocolytic therapy. Which of the following laboratory tests would the nurse expect to be performed as a baseline? Select all that apply.
    A) Complete blood count
    B) Serum creatinine level
    C) Liver function tests
    D) Amniotic fluid index
    E) Blood glucose level
    Ans: A, B, C, D
    Feedback:
    Baseline laboratory testing includes a complete blood count, creatinine level, liver function tests, and amniotic fluid index. Blood glucose level may be done if diabetes is suspected or confirmed.

27. After teaching a group of nursing students about drugs that affect the uterus, the instructor determines that the teaching was successful when the students identify which drug as being used for cervical ripening?
    A) Terbutaline
    B) Nifedipine
    C) Dinoprostone
    D) Misoprostol
    Ans: C
    Feedback:
    Dinoprostone is a cervical ripening agent. Terbutaline and nifedipine are used for tocolysis. Misoprostol is used as a uterine stimulant.

1. A nurse is caring for a client receiving goserelin acetate for prostate cancer. The nurse would monitor the client for which of the following adverse reactions?
   A) Breast atrophy, sexual dysfunction
   B) Pharyngitis, asthenia
   C) Breast tenderness, edema
   D) Hyperglycemia, leukocytosis
   Ans: A
   Feedback:
   Breast atrophy and sexual dysfunction may be seen as adverse reactions of goserelin acetate therapy. Pharyngitis and asthenia are seen with the use of anastrozole. Breast tenderness and edema are seen with drugs such as estramustine. Hyperglycemia and leukocytosis are seen as adverse reactions of mitotane.

2. Prior to administering oxybutynin (Ditropan) to a client, the nurse should get a full medical history because the use of oxybutynin (Ditropan) is contraindicated in clients with which of the following? Select all that apply.
   A) Myasthenia gravis
   B) Urinary tract blockage
   C) Diabetes
   D) Intestinal blockage
   E) Hypertriglyceridemia
   Ans: A, B, D
   Feedback:
   The use of oxybutynin (Ditropan) is contraindicated in clients with the following: known hypersensitivity, glaucoma, myasthenia gravis, abdominal bleeding, and intestinal, gastric, or urinary tract blockages.

3. A nurse educating a client receiving tolterodine (Detrol) should warn the client about which of the following common adverse reactions? Select all that apply.
   A) Anorexia
   B) Xerostomia
   C) Decreased lacrimation
   D) Blurred vision
   E) Diarrhea
   Ans: B, C, E
   Feedback:
   Common adverse reactions seen with the use of tolterodine (Detrol) include xerostomia, drowsiness, constipation, headache, decreased lacrimation, decreased sweating, GI disturbances, blurred vision, and urinary hesitancy.

4. A client is receiving oxybutynin for treatment of overactive bladder. The client also takes haloperidol (Haldol) as an antipsychotic agent. What effect of the interaction of these two drugs should the nurse observe for in the client?
   A) Decreased effect of the antipsychotic drug
   B) Increased risk for bleeding
   C) Lowered plasma concentrations
   D) Increased effect of the antispasmodic drug
   Ans: A
   Feedback:
   The nurse should observe for decreased effectiveness of the antipsychotic drug in the client as the effect of the interaction of the antispasmodic drug and haloperidol. Increased risk for bleeding results from the interaction of oral anticoagulants with anti-infective drugs. Increased effect of the antispasmodic drug occurs with the interaction of an antispasmodic drug with a tricyclic antidepressant. Plasma concentrations are lowered due to the interaction of fosfomycin, which is an anti-infective, with metoclopramide, which is used to relieve gastric upset.

5. A nurse is providing care to a client diagnosed with benign prostatic hypertrophy. The nurse understands that which of the following drugs inhibit the conversion of testosterone into 5-alpha-dihydrotestosterone (DHT), resulting in a decrease in prostate gland size? Select all that apply.
   A) Terazosin (Hytrin)
   B) Finasteride (Proscar)
   C) Methyltestosterone (Testred)
   D) Dutasteride (Avodart)
   E) Doxazosin (Cardura)
   Ans: B, D
   Feedback:
   Finasteride (Proscar) and dutasteride (Avodart) inhibit the conversion of testosterone into 5-alpha-dihydrotestosterone (DHT), which results in a decrease in prostate gland size, making them useful in the treatment of benign prostatic hypertrophy.

6. Nurses who are pregnant or may become pregnant should not handle which drugs if they are crushed or broken due to the drugs' substantial risk of abnormal growth to a male fetus? Select all that apply.
   A) Methyltestosterone (Testred)
   B) Finasteride (Proscar)
   C) Testosterone (Striant)
   D) Dutasteride (Avodart)
   E) Oxandrolone (Oxandrin)
   Ans: B, D
   Feedback:
   Women of childbearing age should not handle androgen hormone inhibitors, such as finasteride (Proscar) or dutasteride (Avodart) tablets, if they are crushed or broken due to the drugs' substantial risk of abnormal growth to a male fetus.

7. Hormones may be used in cancer therapy, especially for advanced disease. Which of the following are hormones used as antineoplastic drugs? Select all that apply.
   A) Testolactone (Teslac)
   B) Leuprolide (Lupron)
   C) Megestrol (Megace)
   D) Bicalutamide (Casodex)
   E) Goserelin (Zoladex)
   Ans: A, B, C, E
   Feedback:
   Testolactone (Teslac), leuprolide (Lupron), megestrol (Megace), bicalutamide (Casodex), and goserelin (Zoladex) are hormones used as antineoplastic drugs.

8. A client with benign hypertrophy of the prostate has heard claims that the herb saw palmetto can help relieve his symptoms. The client is eager to know more about this herb. Which of the following pieces of information should the nurse provide the client regarding the use of the herb?
   A) Take the herb as tea, prepared in hot water.
   B) Improvement can be seen within 2 to 3 weeks.
   C) It may delay the need for prostatic surgery.
   D) Stop the herb after 3 months of intake.
   Ans: C
   Feedback:
   The nurse should inform the client that saw palmetto might help delay the need for prostatic surgery. The active components are not water soluble and should not be taken as a tea. Improvement can be seen after 1 to 3 months of taking the herb, and not within 2 to 3 weeks. The herb intake should not be stopped after 3 months but should be continued for 6 months, followed by evaluation by the health care provider.

9. After reviewing information about estrogens and their use, the instructor determines that the teaching was successful when the students identify which of the following as true? Select all that apply.
   A) Changes in lipids levels occur with the use of estrogens.
   B) Progestin use is recommended when estrogen is used after a hysterectomy.
   C) Estrogen replacement therapy (ERT) helps to lessen the changes to the aging tissues.
   D) Estrogens increase a woman's risk for gallbladder disease.
   E) The use of estrogens is associated with relatively few adverse reactions.
   Ans: A, C, D
   Feedback:
   Estrogens can relieve symptoms of menopause but can lead to blood pressure and lipid changes. ERT can help lessen the changes to aging tissues, but the estrogen does increase a woman's risk for gallbladder disease. The addition of progestin is recommended when estrogen is used to treat menopausal symptoms in a woman with an intact uterus. Estrogen alone may be used for estrogen replacement therapy after a hysterectomy. The administration of estrogen by any route may result in many adverse reactions, although these reactions vary in incidence and intensity.

10. A nurse is conducting a presentation for a group of middle-aged women about menopause and the changes that occur to the female genitourinary system. Which of the following would the nurse include in the discussion? Select all that apply.
   A) Lengthening of the vaginal wall
   B) Slowed rate of lubrication during sexual arousal
   C) Decreased risk of yeast infection from pH changes
   D) Weakening of the pelvic floor muscles
   E) Thinning of the vaginal walls
   Ans: B, D, E
   Feedback:
   Genitourinary changes associated with aging include thinning of the vaginal walls with shortening and loss of elasticity; decreased lubrication with a slowing of the rate during sexual arousal; increased risk of yeast infections due to changes in the pH of the environment; and weakening of the pelvic floor muscles, which can lead to stress incontinence.

11. A client is receiving estrogen therapy. When teaching the client about this therapy, the nurse would inform the client about which of the following as a possible adverse reaction? Select all that apply.
    A) Migraines
    B) Breakthrough bleeding
    C) Changes in libido
    D) Weight gain
    E) Breast tenderness
    Ans: A, B, C, D, E
    Feedback:
    Adverse reactions associated with estrogens include headache, including migraines; breakthrough bleeding, spotting, or changes in menstrual flow; changes in libido; weight gain or loss; and breast pain, enlargement, and tenderness.

12. A client is receiving estrogen therapy but also takes phenytoin for seizure control. The nurse would alert the client to the possibility of which of the following?
    A) Potential for blood clots
    B) Increased risk for infection
    C) Possibility of breakthrough bleeding
    D) Increased risk for seizures
    Ans: C
    Feedback:
    When estrogen is given with phenytoin, a hydantoin, the client is at increased risk for breakthrough bleeding. Blood clots can be an adverse reaction with estrogen therapy alone. There is no increased risk for infection. When given together, these drugs do not increase the risk for seizures.

13. While conducting a health promotion presentation for a local group of women who are in their 30s and 40s, one of the women asks the nurse, “I've heard horror stories about menopause. Are there any herbal products that can help?” Which of the following would the nurse include in the response? Select all that apply.
    A) Black cohosh
    B) Sage
    C) Calendula
    D) Saw palmetto
    E) Dandelion
    Ans: A, B, C, E
    Feedback:
    Black cohosh, sage, dandelion, and calendula are herbs that may be used to address menopausal symptoms. Saw palmetto is used to relieve the symptoms of benign prostatic hypertrophy.

14. A client is prescribed flavoxate. When reviewing the client's history, the nurse would expect to find which of the following complaints? Select all that apply.
    A) Dysuria
    B) Nocturia
    C) Leakage
    D) Suprapubic pain
    E) Inability to void
    Ans: A, B, D
    Feedback:
    Flavoxate, an antispasmodic, is used to relieve symptoms of dysuria, urinary urgency, nocturia, suprapubic pain, and frequency and urge incontinence. Other antispasmodics are used to treat bladder instability, such as leakage caused by a neurogenic bladder. The drug is not used to treat an inability to void.

15. A client is prescribed finasteride to treat his symptoms of BPH. When teaching the client about this drug, the nurse would most likely include a discussion about the possibility of which of the following?
    A) Erectile dysfunction
    B) Dry mouth
    C) Constipation
    D) Decreased libido
    E) Weight gain
    Ans: A, D
    Feedback:
    Androgen hormone inhibitors such as finasteride have been associated with the adverse reaction of erectile dysfunction and decreased libido. Dry mouth and constipation are associated with antispasmodics. Weight gain is associated with alpha-adrenergic blockers.

16. A client is receiving tamsulosin for treatment of BPH. The client also has hypertension, for which he takes atenolol. Which assessment would be most important for the nurse to obtain?
    A) Temperature
    B) Pulse rate
    C) Respiratory rate
    D) Blood pressure
    Ans: D
    Feedback:
    Tamsulosin, an alpha-adrenergic blocker, when given with a beta blocker such as atenolol can cause an increase in hypotension. Therefore, assessment of the client's blood pressure would be most important.

17. A client comes to the emergency department and reports that he is in extreme pain. Physical assessment reveals priapism. When obtaining the client's medication history, which of the following would the nurse expect the client to report using?
    A) Tamsulosin
    B) Terazosin
    C) Tadalafil
    D) Tolterodine
    Ans: C
    Feedback:
    Priapism occurs with the use of phosphodiesterase type 5 inhibitors, such as tadalafil. It is not associated with use of antiadrenergic drugs or antispasmodics.

18. A client is beginning therapy with prescribed terazosin for treatment of BPH. Based on the nurse's understanding of the action of this drug, the nurse would identify which nursing diagnosis as most likely?
    A) Acute Pain
    B) Risk for Injury
    C) Impaired Mucous Membranes
    D) Deficient Knowledge
    Ans: B
    Feedback:
    Terazosin, an antiadrenergic drug, can cause a hypotensive reaction. Thus, the client may experience an immediate lowering of blood pressure when first starting this drug and be at risk for injury. Acute Pain would be more appropriate for a client experiencing priapism from erectile dysfunction drugs. Impaired Mucous Membranes would be appropriate for the client receiving antispasmodics. Deficient Knowledge could apply to any client receiving medication.

19. After teaching a client how to use an estradiol transdermal system, the nurse determines that the teaching was successful when the client states which of the following? Select all that apply.
    A) "I can put the patch on my breasts."
    B) "I should rotate the sites, staying away from the same site for about a week."
    C) "When I apply it, I should rub the patch vigorously for about 10 seconds."
    D) "I apply the patch immediately after I open the pouch."
    E) "If the area is oily or irritated, I need to avoid that area."
    Ans: B, D
    Feedback:
    When using a transdermal system, the client should apply the system immediately after opening the pouch with the adhesive side down, applying it to the clean, dry skin of the buttocks, trunk, abdomen, upper inner thigh, or upper arm. The system should not be applied to the breasts, waistline, or a site exposed to sunlight. The area should not be oily or irritated. Once the patch is applied, the client should press on it firmly with the palm of the hand for about 10 seconds. The application site is rotated with at least 1-week intervals between applications to a particular site.

20. A nurse identifies a nursing diagnosis of Impaired Mucous Membranes based on the client's complaints of dry mouth for a client with urge incontinence who is receiving drug therapy. The nurse would most likely identify this nursing diagnosis as related to the use of which of the following?
    A) Sildenafil
    B) Fesoterodine
    C) Dutasteride
    D) Silodosin
    Ans: B
    Feedback:
    Fesoterodine is an antispasmodic that can cause dry mouth. Sildenafil, dutasteride, and silodosin are not associated with this adverse reaction.

21. After teaching a group of nursing students about drugs used to treat genitourinary problems in the older adult, the instructor determines that the teaching was successful when the students identify which of the following as an alpha-adrenergic blocker used to treat BPH? Select all that apply.
    A) Darifenacin
    B) Oxybutynin
    C) Alfuzosin
    D) Tamsulosin
    E) Raloxifene
    Ans: C, D
    Feedback:
    Alpha-adrenergic drugs used to treat BPH include alfuzosin and tamsulosin. Darifenacin and oxybutynin are antispasmodics. Raloxifene is a miscellaneous agent used to prevent and treat osteoporosis.

1. When describing the use of anti-infectives to treat urinary tract infections, which of the following would the nurse identify as the most common structure affected?
   A) Bladder
   B) Kidney
   C) Prostate gland
   D) Urethra
   E) Ureters
   Ans: A
   Feedback:
   The urinary tract consists of the following anatomic structures: kidneys, ureters, bladder, prostate gland, and urethra. UTIs most commonly affect the bladder.

2. A nurse caring for a client being treated with nitrofurantoin (Macrodantin) for a UTI should ask the client specifically about resolution of which of the following symptoms during ongoing assessment? Select all that apply.
   A) Urgency
   B) Frequency
   C) Pressure
   D) Burning during urination
   E) Pain during urination
   Ans: A, B, C, D, E
   Feedback:
   Clinical manifestations of a UTI include urgency, frequency, pressure, burning and pain on urination, and pain caused by spasm in the region of the bladder and the suprapubic area and should be assessed by the nurse during ongoing assessment to determine effectiveness of drug therapy.

3. A client with a UTI is experiencing dysuria. The nurse would expect which of the following to be prescribed?
   A) Nitrofurantoin (Macrodantin)
   B) Oxybutynin (Ditropan)
   C) Sulfamethoxazole/trimethoprim (Bactrim)
   D) Phenazopyridine (Pyridium)
   Ans: D
   Feedback:
   Phenazopyridine (Pyridium) is a urinary tract analgesic that is useful in treating dysuria caused by a UTI.

4. A nurse is educating a client receiving sulfamethoxazole/trimethoprim (Septra) about common dermatologic adverse reactions. Which of the following would the nurse include in the teaching? Select all that apply.
   A) Rash
   B) Stevens-Johnson syndrome
   C) Photosensitivity
   D) Exfoliative dermatitis
   E) Pruritus
   Ans: A, C, E
   Feedback:
   Common dermatologic adverse reactions seen with the use of sulfamethoxazole/trimethoprim (Septra) include rash, photosensitivity, pruritus, and urticaria.

5. A nurse is developing a teaching plan for a client diagnosed with a UTI and prescribed nitrofurantoin (Macrodantin). The nurse would warn the client about which of the following common gastrointestinal adverse reactions? Select all that apply.
   A) Anorexia
   B) Ileus
   C) Toxic megacolon
   D) Nausea
   E) Diarrhea
   Ans: A, D, E
   Feedback:
   Common gastrointestinal adverse reactions seen with the use of nitrofurantoin (Macrodantin) include anorexia, nausea, vomiting, diarrhea, and abdominal pain.

6. A nurse caring for a client taking warfarin (Coumadin) develops a UTI. The nurse should monitor the client for increased risk of bleeding if which of the following anti-infectives is prescribed?
   A) Amoxicillin
   B) Methenamine
   C) Sulfamethoxazole
   D) Nitrofurantoin
   Ans: C
   Feedback:
   Sulfamethoxazole, when administered concomitantly with warfarin (Coumadin), can increase a client's risk for bleeding. This interaction is not associated with amoxicillin, methenamine, or nitrofurantoin.

7. Based on the nurse's understanding about anti-infectives, the nurse would administer nitrofurantoin cautiously to a client with which condition? Select all that apply.
   A) Hypertension
   B) Diabetes
   C) Glucose-6-phosphate dehydrogenase (G6PD) deficiency
   D) Cerebral arteriosclerosis
   E) Myasthenia gravis
   Ans: B, C, D
   Feedback:
   A nurse should administer nitrofurantoin cautiously to a client with the following conditions: diabetes, G6PD deficiency, and cerebral arteriosclerosis.

8. A nurse caring for a client taking which of the following drugs may notice increased adverse reactions if the client was prescribed nitrofurantoin (Macrodantin) resulting from an increased absorption of nitrofurantoin (Macrodantin)? Select all that apply.
   A) Benztropine (Cogentin)
   B) Simvastatin (Zocor)
   C) Tiotropium (Spiriva)
   D) Albuterol (Proventil)
   E) Dicyclomine (Bentyl)
   Ans: A, C, E
   Feedback:
   Anticholinergic drugs, like benztropine (Cogentin), tiotropium (Spiriva), and dicyclomine (Bentyl), can cause delayed gastric emptying, leading to increased absorption of nitrofurantoin (Macrodantin), which may result in increased adverse reactions.

9. A nurse monitoring a hospitalized client with a UTI notifies the physician if which of the following occur with drug therapy? Select all that apply.
   A) Fever
   B) Poor fluid intake
   C) Decreased urinary output
   D) Appearance of concentrated urine
   E) Worsening of UTI symptoms
   Ans: A, B, C, D, E
   Feedback:
   A nurse monitoring a hospitalized client with a UTI notifies the physician if any of the following occur: fever, poor fluid intake, decreased urinary output, appearance of concentrated urine, or worsening of UTI symptoms.

10. A nurse is to obtain a daily urine pH as ordered. The client would most likely be receiving which of the following anti-infectives for a UTI because they work better in acidic urine? Select all that apply.
    A) Methenamine (Hiprex)
    B) Amoxicillin (Amoxil)
    C) Fosfomycin (Monurol)
    D) Nitrofurantoin (Macrodantin)
    E) Nalidixic (NegGram)
    Ans: A, D
    Feedback:
    A daily urine pH level may be ordered by the physician for clients taking methenamine (Hiprex) or nitrofurantoin (Macrodantin) for a UTI because they work better in acidic urine.

11. A nurse informs a client prescribed nitrofurantoin (Macrodantin) and her family that pulmonary reactions have been reported with the drug's use hours to 3 weeks after the drug therapy is initiated. The nurse determines that the teaching was successful when the client states that she will notify the primary health care provider if which of the following occur? Select all that apply.
    A) Dyspnea
    B) Chest pain
    C) Cough
    D) Fever
    E) Chills
    Ans: A, B, C, D, E
    Feedback:
    Signs and symptoms of an acute pulmonary reaction to nitrofurantoin (Macrodantin) include dyspnea, chest pain, cough, fever, and chills, and any of these should be reported to the physician immediately.

12. A nurse is caring for a client receiving amoxicillin for the treatment of an acute bacterial urinary tract infection. After administering the drug, the nurse would be alert for which of the following as an adverse reaction to the drug?
    A) Abdominal cramps
    B) Vaginitis
    C) Bladder irritation
    D) Stomatitis
    Ans: D
    Feedback:
    The nurse should monitor for stomatitis in the client, which is an adverse reaction to amoxicillin, an anti-infective drug. Vaginitis is an adverse reaction to an anti-infective drug called fosfomycin. Abdominal cramps and bladder irritation are adverse reactions to the anti-infective drug methenamine.

13. A nurse needs to start methenamine for a client. The nurse checks the client's medical record for an allergy to which of the following?
    A) Sulfa
    B) Tartrazine
    C) Shellfish
    D) Penicillin
    Ans: B
    Feedback:
    Clients who are allergic to tartrazine, a food dye, should not receive methenamine.

14. A nurse is caring for a client receiving fosfomycin for the treatment of an acute bacterial UTI. Which of the following interventions should the nurse include in the teaching plan for the client about this drug?
    A) Ensure that the drug is administered every 3 hours.
    B) Administer the drug after dissolving it in 90 to 120 mL of hot water.
    C) Ensure that the drug is administered immediately after mixing with water.
    D) Administer the drug on an empty stomach.
    Ans: C
    Feedback:
    The nurse should instruct the client to take the drug immediately after mixing it with water. The nurse need not instruct the client to take the drug at an interval of 3 hours, to take the drug after dissolving it in 90 to 120 mL of hot water, or to take the drug on an empty stomach. Fosfomycin, which comes in dry form, should be dissolved in 90 to 120 mL water, but not hot water. The nurse should instruct the client to take the drug with food to prevent gastric upset, which occurs with the administration of fosfomycin.

15. A nurse is caring for a client receiving methenamine as outpatient treatment for chronic bacterial UTIs. Which instruction should the nurse include in the teaching plan for the client about the administration of the drug?
    A) Avoid prolonged exposure to sunlight.
    B) Increase the intake of milk products.
    C) Avoid an excessive intake of citrus fruits.
    D) Take the drug preferably with food.
    Ans: C
    Feedback:
    The nurse should instruct the client taking the anti-infective methenamine to avoid an excessive intake of citrus fruits. The nurse need not instruct the client taking methenamine to avoid prolonged exposure to sunlight, to increase the intake of milk products, or to take the drug preferably with food. Instead, the nurse should instruct the client to avoid milk and milk products when the client is taking methenamine.

16. After nitrofurantoin is administered to a client with an acute bacterial UTI, assessment reveals dyspnea, chest pain, cough, fever, and chills. Which of the following actions would be most appropriate?
    A) Monitor client for tightness of the chest.
    B) Offer fluids to the client at regular intervals.
    C) Provide oxygen support to the client.
    D) Withhold the drug and contact the primary health care provider.
    Ans: D
    Feedback:
    The nurse should immediately notify the primary health care provider and withhold the next dose of the drug until the client is seen by the primary health care provider if acute pulmonary reactions are observed in the client. The nurse should monitor the client for signs of a nonproductive cough or malaise, which may indicate a chronic pulmonary reaction, which may occur during prolonged therapy. Tightness of the chest is not known to occur in the case of a chronic pulmonary reaction, so the nurse need not monitor the client for this. The nurse offers fluids at regular intervals to elderly clients who develop decreased thirst sensation as an adverse reaction to the urinary tract anti-infectives.

17. A nurse is caring for an older adult client who is hospitalized. The client develops a UTI and is receiving prescribed anti-infective therapy. Which of the following should the nurse perform while caring for this client?
    A) Document symptoms of the client's condition.
    B) Monitor the client's vital signs every 4 hours.
    C) Document the client's urine output every hour.
    D) Assess the client for bladder distension.
    Ans: B
    Feedback:
    When caring for a client with a UTI undergoing urinary tract anti-infective drug therapy, the nurse should monitor the vital signs of the client every 4 hours after administration of the drug or as ordered by the primary health care provider. Any significant rise in body temperature is reported to the primary health care provider because the methods of reducing the fever or culture and sensitivity tests may need to be repeated. The nurse should document the symptoms experienced by the client and assess the client for bladder distension as part of the preadministration assessment before administering the drug to the client. The nurse need not document the client's urine output every hour or monitor the client's respiratory rate in this case.

18. A nurse is caring for a client who is being prescribed phenazopyridine. The client is distressed on seeing that the urine is exhibiting a reddish-orange discoloration. Which response by the nurse would be most appropriate?
    A) "We will have to get a specimen for a urinalysis."
    B) "I will have to notify the primary health care provider immediately."
    C) "You will need to increase your fluid intake."
    D) "This discoloration is a normal result of the medication. Nothing is wrong."
    Ans: D
    Feedback:
    The nurse should inform the client that phenazopyridine may cause a reddish-orange discoloration of the urine, which is normal, so there is no cause to worry. Periodic urinalyses are conducted as part of the ongoing assessment when caring for a client with a UTI. Since the reddish-orange discoloration of the urine is normal, the nurse need not notify the primary health care provider immediately. The nurse also need not ask the client to increase intake of fluids.

19. A nurse is educating a client undergoing treatment for genitourinary tract bacterial infections on an outpatient basis. What instructions should the nurse offer the client as part of the client teaching plan?
    A) Notify the primary health care provider if abdominal pain occurs.
    B) Discontinue the therapy if symptoms vanish.
    C) Decrease fluid intake if symptoms subside.
    D) Increase fluid intake to at least 2000 mL/day.
    Ans: D
    Feedback:
    The nurse should instruct the client to increase the fluid intake to at least 2000 mL/day to help remove bacteria from the genitourinary tract when caring for a client with a genitourinary tract bacterial infection. The nurse should stress the importance of continued therapy even if symptoms vanish or the client feels better after a few doses. The nurse should encourage continued increased fluid intake even if the symptoms subside. Abdominal pain is not commonly associated with genitourinary tract bacterial infections, so this instruction would not be necessary.

20. When describing the adverse reactions associated with anti-infectives for UTIs, which of the following would the nurse explain as being most common?
    A) Gastrointestinal
    B) Dermatologic
    C) Neurologic
    D) Urologic
    Ans: A
    Feedback:
    Although dermatologic reactions such as rash, pruritus, and photosensitivity reactions can occur and neurologic reactions such as dizziness, drowsiness, headache, blurred vision, and weakness can occur, adverse reactions associated with anti-infectives are primarily gastrointestinal in nature.

21. A nurse is administering methenamine to a client with a UTI. Which of the following would the nurse instruct the client to avoid?
    A) Ascorbic acid
    B) Sodium bicarbonate
    C) Acetaminophen
    D) Ibuprofen
    Ans: B
    Feedback:
    An increased urinary pH (alkaline urine) decreases the effectiveness of methenamine. Therefore, to avoid raising the urine pH when taking methenamine, the client should not use antacids containing sodium bicarbonate or sodium carbonate.

22. A client asks the nurse about drinking cranberry juice to prevent UTIs. The nurse informs the client that it is safe to use, suggesting an intake of which amount daily?
    A) 1 to 2 ounces
    B) 4 to 8 ounces
    C) 8 to 12 ounces
    D) 12 to 16 ounces
    Ans: B
    Feedback:
    Cranberry juice is safe for use as a food and for urinary tract health. The recommended dosage is 4 to 8 ounces of juice per day.

23. A nurse is conducting an in-service presentation for a group of nurses about UTIs and hospitalized clients. When discussing preventive measures, the nurse would identify which of the following as the primary nursing intervention for prevention?
    A) Proper perineal hygiene
    B) Use of urinary acidifiers
    C) Hand hygiene
    D) Routine urinalysis
    Ans: C
    Feedback:
    UTIs may affect the hospitalized client or nursing home resident with an indwelling catheter or a disorder such as a stone in the urinary tract. The primary nursing intervention to prevent UTIs in the hospitalized client is good hand hygiene or handwashing. Proper perineal hygiene may be helpful but not as effective as hand hygiene. The use of urinary acidifiers is appropriate to maintain pH of the urine but not prevent UTIs. Routine urinalysis would help identify potential infections but not prevent them.

24. A nurse is preparing to administer phenazopyridine to a client. To help promote maximum effectiveness, the nurse would expect to administer this drug at which time?
    A) Before meals
    B) At bedtime
    C) Around the clock
    D) After meals
    Ans: D
    Feedback:
    Phenazopyridine is administered after meals to prevent GI upset.

25. The nurse is developing a plan of care for a client who is receiving an anti-infective drug for treatment of a UTI. The nurse has identified a nursing diagnosis of Impaired Urinary Elimination. Which of the following would the nurse include?
    A) Encouraging a fluid intake of at least 2000 mL/day
    B) Offering the client orange juice when administering the medication
    C) Monitoring urine output every 1 to 2 hours
    D) Checking the urine pH every 4 hours
    Ans: A
    Feedback:
    Encouraging a fluid intake of at least 2000 mL/day would be appropriate. The nurse should offer fluids such as water, cranberry juice, or prune juice rather than orange juice or other citrus or vegetable juices. Intake and output are usually measured every 8 hours, not every 1 to 2 hours. Urine pH measurements would be appropriate if the client was receiving methenamine or nitrofurantoin.

26. After teaching a client about her prescribed anti-infective therapy for her UTI, the nurse determines that the teaching was successful when the client states which of the following? Select all that apply.
    A) "I can stop the drug once my symptoms disappear."
    B) "I can take the medication with food or meals."
    C) "I can drink pineapple juice to keep things acidic."
    D) "I'll call my primary health care provider if I don't feel better in about 3 days."
    E) "I should avoid drinking any beverages that contain alcohol."
    Ans: B, D, E
    Feedback:
    The client should complete the full course of therapy even with symptom relief to ensure that all bacteria have been eliminated from the urinary tract. The client should take the drug with food or meals. Cranberry juice, prune juice, and water are recommended. Alcohol and citrus juices such as orange or pineapple juice are to be avoided. The client should notify her primary health care provider if the symptoms do not subside within 3 to 4 days.

1. A nursing instructor is describing the concept of immunity. The instructor determines that the teaching was successful when the students identify that cell-mediated immunity protects the body against what type of infections? Select all that apply.
   A) Viral
   B) Protozoal
   C) Fungal
   D) Bacterial
   E) Helminth
   Ans: A, C, D
   Feedback:
   Cell-mediated immunity protects the body against viral, bacterial, and fungal infections.

2. Which of the following is an example of artificially acquired active immunity? Select all that apply.
   A) An individual who is exposed to chickenpox for the first time and has no immunity to the disease
   B) Administration of the varicella vaccine to an individual who has no immunity to the disease
   C) An individual who is exposed to pertussis for the first time and has no immunity to the disease
   D) Administration of the influenza vaccine to an individual who has no immunity to the disease
   E) Administration of the rubella vaccine to an individual who has no immunity to the disease
   Ans: B, D, E
   Feedback:
   Artificially acquired active immunity occurs when an individual is given a killed or weakened antigen, which stimulates the formation of antibodies against the antigen. The antigen does not cause the disease, but the individual still manufactures specific antibodies against the disease. Administration of the varicella vaccine, administration of the influenza vaccine, and administration of the rubella vaccine to an individual who has no immunity to the disease are examples of artificially acquired active immunity. Naturally acquired active immunity occurs when the person is exposed to and experiences a disease and the body manufactures antibodies to provide future immunity to the disease.

3. A nurse is reviewing a client's medical record and determines that the client has naturally acquired active immunity. Which of the following would most likely apply? Select all that apply.
   A) The client who is exposed to chickenpox for the first time and has no immunity to the disease
   B) Administration of the varicella vaccine to an individual who has no immunity to the disease
   C) An individual who is exposed to pertussis for the first time and has no immunity to the disease
   D) Administration of the influenza vaccine to an individual who has no immunity to the disease
   E) Administration of the rubella vaccine to an individual who has no immunity to the disease

   Ans: A, C

   Feedback:

   Naturally acquired active immunity occurs when the person is exposed to and experiences a disease and the body manufactures antibodies to provide future immunity to the disease. This would be an individual who is exposed to chickenpox or pertussis for the first time and has no immunity to the disease. Artificially acquired active immunity occurs when an individual is given a killed or weakened antigen, which stimulates the formation of antibodies against the antigen. The antigen does not cause the disease, but the individual still manufactures specific antibodies against the disease. Administration of a vaccine to an individual who has no immunity would be an example of artificially acquired active immunity.

4. After teaching a class to a group of nursing students about immunity, the instructor determines that the teaching was successful when the students identify which of the following as an example of passive immunity? Select all that apply.
   A) An individual who is exposed to chickenpox for the first time and has no immunity to the disease
   B) Administration of botulism immune globulin (BabyBIG) for the treatment of infant botulism
   C) An individual who is exposed to pertussis for the first time and has no immunity to the disease
   D) Administration of Crotalidae polyvalent immune Fab (CroFab) for the treatment of mild to moderate North American rattlesnake bites
   E) Administration of the rubella vaccine to an individual who has no immunity to the disease

   Ans: B, D

   Feedback:

   Passive immunity occurs when immune globulins or antivenins are administered. This type of immunity provides the individual with ready-made antibodies from another human or an animal. Administration of botulism immune globulin (BabyBIG) for the treatment of infant botulism or administration of Crotalidae polyvalent immune Fab (CroFab) for the treatment of mild to moderate North American rattlesnake bites are examples of passive immunity.

5. A nurse is preparing to administer an immunologic drug that produces active immunity. Which of the following might the nurse be administering? Select all that apply.
   A) Vaccines
   B) Antibodies
   C) Toxoids
   D) Antigens
   E) Immune globulin

   Ans: A, C

   Feedback:

   Both vaccines and toxoids are administered to stimulate the body's immune response to specific antigens or toxins. These agents must be administered before exposure to the disease-causing organism. The initiation of the immune response, in turn, produces resistance to a specific infectious disease. The immunity produced in this manner is active immunity.

6. A nurse is teaching a client about the use of immune globulin. Which of the following would the nurse include? Select all that apply.
   A) Globulins are proteins present in blood serum or plasma that contain antibodies.
   B) Globulins are given to provide active immunity against disease.
   C) Immune globulin can be obtained from human and animal blood.
   D) Clients receiving immune globulins receive antibodies only to the diseases to which donor blood is immune.
   E) The onset of protection is rapid but the duration of action is long (6 to 12 months).
   Ans: A, C, D
   Feedback:
   The following is true in regard to the use of immune globulin: globulins are proteins present in blood serum or plasma that contain antibodies, globulins are given as passive immunity against disease, immune globulin can be obtained from human and animal blood, clients receiving immune globulins receive antibodies only to the diseases to which donor blood is immune, and the onset of protection is rapid but the duration of action is short (1 to 3 months).

7. When administering antivenin to a client, the nurse is aware that this drug is used for passive, transient protection from which of the following bites? Select all that apply.
   A) Black widow spider
   B) Canine
   C) Human
   D) Rattlesnake
   E) Copperhead snake
   Ans: A, D, E
   Feedback:
   Antivenins are used for passive, transient protection from the toxic effects of bites by black widow spiders and rattlesnakes, copperhead snakes, cottonmouth snakes, and coral snakes.

8. A nurse should warn a client about which of the following adverse reactions that can occur after the administration of influenza vaccine (Fluzone)? Select all that apply.
   A) Chills
   B) Fever
   C) Hypotension
   D) Lethargy
   E) Muscle aches
   Ans: A, B, D, E
   Feedback:
   Adverse reactions from the administration of vaccines or toxoids are usually mild and include chills, fever, muscle aches and pains, rash, and lethargy. Hypotension is not associated with vaccine administration.

9. When teaching a client who is receiving cytomegalovirus immune globulin, the nurse would alert the client to the possibility of which of the following ? Select all that apply.
   A) Urticaria
   B) Angioedema
   C) Constipation
   D) Headache
   E) Chills
   Ans: A, B, D, E
   Feedback:
   The most common adverse reactions to the administration of cytomegalovirus immune globulin (CytoGam) include urticaria, angioedema, erythema, malaise, nausea, diarrhea, headache, chills, and fever. Constipation is not a common adverse reaction.

10. A nurse obtains a thorough allergy history prior to administering vaccines to a client. An allergy to which of the following would alert the nurse to a contraindication for administering the measles, mumps, rubella, and varicella vaccines? Select all that apply.
   A) Eggs
   B) Pollen
   C) Gelatin
   D) Amoxicillin
   E) Neomycin
   Ans: C, E
   Feedback:
   The measles, mumps, rubella, and varicella vaccines are contraindicated in clients allergic to gelatin, neomycin, or a previous dose of one of the vaccines.

11. A nurse should screen clients of childbearing age for pregnancy as the administration of which of the following vaccines is contraindicated during pregnancy? Select all that apply.
   A) Influenza
   B) Varicella
   C) Measles
   D) Mumps
   E) Rubella
   Ans: B, C, D, E
   Feedback:
   The measles, mumps, rubella, and varicella vaccines are contraindicated during pregnancy, especially during the first trimester, because of the danger for birth defects.

12. Several clients have come to the clinic for immunizations. When reviewing their medical records, the nurse identifies which of the following as a contraindication for the administration of vaccines and toxoids? Select all that apply.
    A) Acute nonfebrile illness
    B) Leukemia
    C) Chronic prednisone therapy
    D) HIV
    E) Clients older than 70 years of age
    Ans: B, C, D
    Feedback:
    Vaccines and toxoids are contraindicated with acute febrile illnesses, leukemia, lymphoma, immunosuppressive illness (HIV) or drug therapy (prednisone), and nonlocalized carcinoma.

13. Human immune globulin intravenous (IGIV) products have been associated with renal problems. The nurse understands that which clients should not receive IGIV? Select all that apply.
    A) Clients with diabetes mellitus
    B) Clients 65 years of age or older
    C) Clients receiving vancomycin
    D) Clients with pre-existing renal disease
    E) Clients receiving cephalexin
    Ans: A, B, C, D
    Feedback:
    Human immune globulin intravenous (IGIV) products have been associated with renal problems; therefore, a nurse should not administer IGIV to clients with a predisposition to acute renal failure (those with pre-existing renal disease), those with diabetes mellitus, those 65 years of age and older, or those receiving nephrotoxic drugs (vancomycin).

14. Vaccines containing live organisms are not administered to clients taking which of the following drugs as insufficient numbers of antibodies are produced to prevent the disease because these drugs suppress the immune system? Select all that apply.
    A) Methylprednisolone (Medrol)
    B) Ciprofloxacin (Cipro)
    C) Prednisolone (Orapred)
    D) Paclitaxel (Taxol)
    E) Vincristine (Oncovin)
    Ans: A, C, D, E
    Feedback:
    Vaccines containing live organisms are not administered to clients taking corticosteroids (methylprednisolone and prednisolone) or antineoplastic drugs (paclitaxel and vincristine) and those receiving radiation therapy as insufficient numbers of antibodies are produced to prevent the disease because these drugs suppress the immune system.

15. After administering the pneumococcal vaccine (Pneumovax) to a client, the nurse documents which of the following in the client's chart? Select all that apply.
    A) Date of next vaccination
    B) Vaccine lot number
    C) Vaccine expiration date
    D) Route and site of vaccine administration
    E) Name, address, and title of client vaccinated
    Ans: B, C, D
    Feedback:
    After administering a vaccine to a client, the nurse documents the following information in the client's chart: date of vaccination, route and site, vaccine type, manufacturer, lot number, expiration date, and name, address, and title of individual administering the vaccine.

16. A nurse should include which of the following information when educating the client's parents on the varicella vaccine? Select all that apply.
    A) Explain the risk of contracting vaccine-preventable diseases.
    B) Explain the benefits of immunization.
    C) Provide the date for return for the next vaccination.
    D) Discuss common adverse reactions.
    E) Instruct the parents to bring immunization records to all visits.
    Ans: A, B, C, D, E
    Feedback:
    The following information should be included when educating the parents of a client receiving a vaccination: explain the risk of contracting vaccine-preventable diseases, explain the benefits of immunization, instruct the parents to bring immunization records to all visits, provide the date for return for the next vaccination, discuss common adverse reactions, and instruct parents to report any unusual or severe adverse reactions after the administration of a vaccination.

17. A client is traveling to a foreign country. A nurse should recommend vaccination against which of the following before travel to endemic areas? Select all that apply.
    A) Varicella
    B) Diphtheria
    C) Lyme disease
    D) Tetanus
    E) Cholera
    Ans: B, C, E
    Feedback:
    A nurse should recommend vaccination against the following before travel to endemic areas: cholera, diphtheria, Japanese encephalitis, Lyme disease, smallpox, typhoid, and yellow fever. Immunization against varicella and tetanus are diseases prevented by routine vaccination.

18. A nurse is required to administer a varicella vaccine to a female client planning to start a family. How long after the vaccination should the nurse instruct the client to wait before getting pregnant?
    A) 2 weeks
    B) 4 weeks
    C) 8 weeks
    D) 12 weeks
    Ans: D
    Feedback:
    The nurse should instruct the client to wait at least 12 weeks (3 months) before getting pregnant after receiving measles, mumps, rubella, and varicella vaccines. Measles, mumps, rubella, and varicella vaccines are contraindicated in pregnancy, especially in the first trimester, because of the danger of birth defects in the infant. Following vaccination with these agents, the client is advised to wait for 12 weeks before getting pregnant.

19. A child is brought by his parents to the health care center for MMR vaccination. On taking the medical history, the nurse understands that the child had received an antivenin injection for a snake bite 2 days before. Which of the following is the most appropriate time period for administration of live vaccines to the child?
    A) After 1 to 2 weeks
    B) After 3 to 4 weeks
    C) After 4 to 5 weeks
    D) After 6 to 12 weeks
    Ans: D
    Feedback:
    Live attenuated vaccines should be administered to clients after 6 to 12 weeks of administration of immune globulin preparation. MMR vaccine, being a live attenuated vaccine, should be administered to the child after 6 to 12 weeks, as the child has received immune globulin for a snake bite. Vaccinations containing live organisms are not administered within 6 to 12 weeks of immune globulin administration because antibodies in the globulin preparation may interfere with the immune response to the vaccination. To obtain an effective immune response to vaccination, the live vaccine has to be administered 14 to 30 days before or 6 to 12 weeks after immune globulin administration.

20. The parents of a child who is recovering from chickenpox tell the nurse that they gave the child aspirin for his fever. The nurse would be alert to the development of which of the following?
    A) Lymphoma
    B) Angioneurotic edema
    C) Acute renal failure
    D) Reye's syndrome
    Ans: D
    Feedback:
    When salicylates are administered along with the varicella vaccine, there is an increased risk of development of Reye's syndrome. It is often associated with children who are given aspirin-containing medicines while they have chickenpox (varicella). Lymphoma, angioneurotic edema, and acute renal failure do not develop with the simultaneous administration of salicylates and the varicella vaccine.

21. When educating a group of nursing students on immunologic agents, the nurse explains about a particular kind of immunity that develops by injecting ready-made antibodies found in the serum of immune individuals or animals. Which of the following kinds of immunity is the nurse referring to?
    A) Active immunity
    B) Cell-mediated immunity
    C) Humoral immunity
    D) Passive immunity
    Ans: D
    Feedback:
    The nurse is referring to passive immunity. The injection of ready-made antibodies found in the serum of immune individuals or animals is called passive immunity. When a person is exposed to antigens, the body begins to form antibodies. This is called active immunity. Humoral and cell-mediated immunity involve the action by B lymphocytes and T lymphocytes.

22. A client comes to the clinic and tells the nurse that close family members are suspected of having pulmonary tuberculosis. Which of the following would the nurse recommend as a preventative measure?
    A) MMR vaccine
    B) DPT vaccine
    C) BCG vaccine
    D) IPV vaccine
    Ans: C
    Feedback:
    For the prevention of pulmonary tuberculosis (TB) in high-risk populations such as health care workers, infants, and children in endemic areas, a BCG vaccination is given. The MMR vaccine is used for preventing measles, mumps, and rubella. The DPT vaccine is used for preventing diphtheria, pertussis, and tetanus. IPV is an inactivated polio virus used to prevent polio.

23. A forest ranger arrives at a community clinic for prophylactic vaccination. Which of the following vaccines would be most important to be administered to the ranger?
    A) MMR vaccine
    B) Varicella vaccine
    C) Rotavirus vaccine
    D) Rabies vaccine
    Ans: D
    Feedback:
    Due to the high numbers of animals in the forest, the ranger should receive the rabies vaccine as prophylaxis as he is at high risk for contracting the virus. The MMR vaccine is used in preventing measles, mumps, and rubella. The varicella vaccine is used in preventing chickenpox, and the rotavirus vaccine is used in preventing gastroenteritis caused by the rota virus.

24. A nurse is caring for a client who has been bitten by a coral snake. Which of the following would the nurse expect to administer to this client?
    A) Antivenin
    B) Toxoid
    C) Vaccine
    D) Immune globulins
    Ans: A
    Feedback:
    Antivenin of micrurus fulvius is used in passive transient protection from the toxic effects of the venom of the coral snake found in the United States. The most effective response is obtained when the drug is administered within 4 hours of exposure. Vaccines, toxoids, and immune globulins are examples of immunologic agents and are not used in treating a snake bite.

25. A nurse is educating a group of nursing students about the immediate reactions that may occur after administering antivenins. Within which of the following time periods will the immediate reaction be seen if the client is sensitive to the antivenin?
    A) 30 minutes
    B) 60 minutes
    C) 90 minutes
    D) 120 minutes
    Ans: A
    Feedback:
    The immediate reactions usually occur within 30 minutes of administration of the antivenin. The antivenins may cause various reactions, with hypersensitivity being the most severe. Symptoms include apprehension; flushing; itching; urticaria; edema of the face, tongue, and throat; cough; dyspnea; vomiting; cyanosis; and collapse.

26. When educating a group of nursing students on immunologic agents, the nurse refers to a substance that is attenuated (or weakened) but still capable of stimulating the formation of antitoxins. The nurse determines that the teaching was successful when the students identify this substance as which of the following?
    A) Antivenins
    B) Toxoids
    C) Vaccines
    D) Immune globulins
    Ans: B
    Feedback:
    The nurse is referring to toxoids. A toxoid is a toxin that is weakened but still capable of stimulating the formation of antitoxins. Toxoids are administered to stimulate the immune response within the body to specific antigens or toxins. These agents must be administered before exposure to the disease-causing organism. Vaccines are attenuated or killed antigens that are capable of stimulating antibody production and creating immunity. Immune globulins are antibody-containing solutions formed to specific antigens and are obtained from human or animal blood. Vaccines, immune globulins, and antivenins do not stimulate antitoxin formation.

27. A client who is right-handed is to receive a booster injection for a previous vaccination. The nurse prepares to administer the injection at which site?
    A) Right arm
    B) Left arm
    C) Right leg
    D) Left leg
    Ans: A
    Feedback:
    The nurse should use the dominant arm, in this case, the right arm, for the injection to help aid in the absorption.

28. Which of the following would the nurse most likely identify as a nursing diagnosis for a client who is receiving an immunization?
    A) Risk for Infection
    B) Acute Pain
    C) Hyperthermia
    D) Ineffective Coping
    Ans: B
    Feedback:
    The client who is receiving an immunization would most likely experience pain at the injection site; therefore, Acute Pain would be most appropriate. If the drug was not given, then the client would be at risk for infection. Although fever may occur, Hyperthermia as a nursing diagnosis would be inappropriate. Ineffective Coping would not be associated with immunologic agents.

29. A nurse identifies a nursing diagnosis of Acute Pain for a client receiving a vaccine. Which of the following would the nurse include in the client's plan of care to address this problem? Select all that apply.
    A) Administering acetaminophen every 4 hours
    B) Providing for adequate rest periods
    C) Ensuring that the environment is stimulating
    D) Applying compresses to the injection site
    E) Limiting the client's access to fluids
    Ans: A, B, D
    Feedback:
    For the client with acute pain related to the administration of a vaccine, the nurse would administer prescribed acetaminophen; provide for frequent rest periods in a quiet, nonstimulating environment; apply warm or cool compresses to the injection site; and encourage fluid intake.

30. After teaching a group of nursing students about the various immunologic drugs, the instructor determines that the teaching was successful when the students identify which of the following as a viral vaccine? Select all that apply.
    A) *Haemophilus influenza* type B conjugate
    B) Typhoid
    C) Mumps
    D) Avian influenza
    E) Rabies
    Ans: C, D, E
    Feedback:
    Mumps, avian influenza, and rabies are virus vaccines. *Haemophilus influenza* type B conjugate and typhoid are bacterial vaccines.

31. When describing humoral immunity to a group of nursing students, which of the following would the instructor most likely include? Select all that apply.
    A) B lymphocytes are involved.
    B) An antigen–antibody response occurs.
    C) An immunity that is independent of cell-mediated immunity occurs.
    D) T lymphocytes are activated.
    E) The immunity protects the body against bacterial, viral, and fungal infections.
    Ans: A, B
    Feedback:
    Humoral immunity involves the action of B lymphocytes and protects the body against bacterial and viral infections. Humoral immunity is based on the antigen–antibody response. Humoral immunity is interdependent with cell-mediated immunity. Cell-mediated immunity involves the action of T lymphocytes and protects against bacterial, viral, and fungal infection.

1. After teaching a group of nursing students about antineoplastic drugs, the instructor determines that the teaching was successful when the students identify which of the following as being classified as a plant alkaloid? Select all that apply.
   A) Vincristine (Oncovin)
   B) Capecitabine (Xeloda)
   C) Paclitaxel (Taxol)
   D) Etoposide (Toposar)
   E) Irinotecan (Camptosar)
   Ans: A, C, D, E
   Feedback:
   Drugs that are derived from plant alkaloids include vinca alkaloids (vincristine), taxanes (paclitaxel), podophyllotoxins (etoposide), and camptothecin analogs (irinotecan). Capecitabine is an antimetabolite.

2. A nurse is preparing to administer an antineoplastic drug that is classified as an antimetabolite. Which of the following might the nurse be preparing to give? Select all that apply.
   A) Mercaptopurine (Purinethol)
   B) Capecitabine (Xeloda)
   C) Fluorouracil (Adrucil)
   D) Etoposide (Toposar)
   E) Irinotecan (Camptosar)
   Ans: A, B, C
   Feedback:
   Antimetabolite drugs are substances that incorporate themselves into the cellular components during the S phase of cell division and include mercaptopurine (Purinethol), capecitabine (Xeloda), and fluorouracil (Adrucil). Etoposide and irinotecan are plant alkaloids.

3. A client is receiving an alkylating agent. Which of the following would be used? Select all that apply.
   A) Bleomycin (Blenoxane)
   B) Chlorambucil (Leukeran)
   C) Vinblastine (Velban)
   D) Cyclophosphamide (Cytoxan)
   E) Ifosfamide (Ifex)
   Ans: B, D, E
   Feedback:
   Alkylating agents make the cell a more alkaline environment, leading to cell damage. Alkylating agents include chlorambucil (Gliadel), cyclophosphamide (Cytoxan), and ifosfamide (Ifex). Bleomycin is classified as an antineoplastic antibiotic. Vinblastine is a plant alkaloid.

4. The primary health care provider prescribes an antineoplastic antibiotic. The nurse identifies which of the following as a possibility? Select all that apply.
   A) Bleomycin (Blenoxane)
   B) Carboplatin (Paraplatin)
   C) Dactinomycin (Cosmegen)
   D) Daunorubicin (DaunoXome)
   E) Busulfan (Busulfex)
   Ans: A, C, D
   Feedback:
   Antineoplastic antibiotics have similar action to alkylating drugs and include bleomycin (Blenoxane), dactinomycin (Cosmegen), and daunorubicin (DaunoXome). Carboplatin is an alkylating agent. Busulfan is an alkyl sulfonate alkylating agent.

5. A group of nursing students are reviewing antineoplastic drugs. The students demonstrate understanding of the information when they identify which of the following as cell cycle specific? Select all that apply.
   A) Alkylating agents
   B) Plant alkaloids
   C) Antimetabolites
   D) Antineoplastic antibiotics
   E) Retinoids
   Ans: B, C
   Feedback:
   Plant alkaloids and antimetabolites are considered cell cycle–specific antineoplastic drugs. Alkylating agents and antineoplastic antibiotics are cell cycle–nonspecific agents. Retinoids are miscellaneous agents.

6. Which of the following alkylating agents can cross the blood–brain barrier? Select all that apply.
   A) Cisplatin (Platinol-AQ)
   B) Melphalan (Alkeran)
   C) Carmustine (BiCNU)
   D) Streptozocin (Zanosar)
   E) Mechlorethamine (Mustargen)
   Ans: C, D
   Feedback:
   Nitrosoureas, like carmustine (BiCNU) and streptozocin (Zanosar), are alkylating agents that can cross the blood–brain barrier.

7. Which of the following are examples of immediate adverse reactions to an antineoplastic drug that the nurse should discuss with the client prior to drug administration? Select all that apply.
   A) Fertility problems
   B) Extravasation
   C) Nausea
   D) Cardiotoxicity
   E) Pulmonary fibrosis
   Ans: B, C
   Feedback:
   Nausea, vomiting, and extravasation are examples of immediate reactions to an antineoplastic drug that the nurse should discuss with the client prior to drug administration. Fertility problems, cardiotoxicity, and pulmonary fibrosis are more long-term adverse reactions.

8. A nurse is discussing the possible adverse reactions that may occur with antineoplastic therapy. Which of the following would the nurse discuss as examples of long-term adverse reactions? Select all that apply.
   A) Fertility problems
   B) Thrombocytopenia
   C) Leukopenia
   D) Stomatitis
   E) Cardiotoxicity
   Ans: A, E
   Feedback:
   Fertility problems, cardiotoxicity, pulmonary toxicity, and neurologic problems are examples of long-term reactions to an antineoplastic drug that the nurse should discuss with the client prior to drug administration. Thrombocytopenia, leukopenia, and stomatitis are more immediate adverse reactions.

9. A nurse should understand that which of the following adverse effects of antineoplastic drugs are related to the death of rapidly growing cells? Select all that apply.
   A) Alopecia
   B) Leukopenia
   C) Stomatitis
   D) Cardiotoxicity
   E) Thrombocytopenia
   Ans: A, B, C, E
   Feedback:
   Alopecia, bone marrow suppression (Leukopenia and thrombocytopenia), stomatitis, and diarrhea are adverse effects of antineoplastic drugs and are related to the death of rapidly growing cells.

10. Which of the following cytoprotective agents can be given along with antineoplastic drugs to help prevent or lessen certain adverse effects? Select all that apply.
    A) Allopurinol (Zyloprim)
    B) Amifostine (Ethyol)
    C) Leucovorin (Wellcovorin)
    D) Mesna (Mesnex)
    E) Dexrazoxane (Zinecard)
    Ans: A, B, C, D, E
    Feedback:
    Allopurinol (Zyloprim), amifostine (Ethyol), leucovorin (Wellcovorin), mesna (Mesnex), and dexrazoxane (Zinecard) are cytoprotective agents that can be given along with antineoplastic drugs to help prevent or lessen certain adverse effects.

11. A nurse should monitor a client closely for signs of worsening atrial fibrillation when which of the following antineoplastic drugs are used concomitantly with digoxin (Lanoxin)? Select all that apply.
    A) Mercaptopurine (Purinethol)
    B) Busulfan (Busulfex)
    C) Thiotepa (Thioplex)
    D) Doxorubicin (Doxil)
    E) Irinotecan (Camptosar)
    Ans: A, D, E
    Feedback:
    Plant alkaloids (irinotecan), antimetabolites (mercaptopurine), and antineoplastic antibiotics (doxorubicin) can decrease serum digoxin (Lanoxin) levels and result in worsening atrial fibrillation.

12. A nurse should monitor a client closely for increased seizure activity when which of the following antineoplastic drugs are used concomitantly with phenytoin (Dilantin)? Select all that apply.
    A) Mercaptopurine (Purinethol)
    B) Busulfan (Busulfex)
    C) Thiotepa (Thioplex)
    D) Doxorubicin (Doxil)
    E) Irinotecan (Camptosar)
    Ans: B, C, E
    Feedback:
    Plant alkaloids (irinotecan) and alkylating agents (busulfan and thiotepa) can increase risk of seizure when given with phenytoin (Dilantin).

13. Which of the following should be included in the nurse's preadministration assessment before administering the first dose of an antineoplastic drug? Select all that apply.
    A) Blood glucose
    B) Weight
    C) Fasting lipid panel
    D) Blood pressure
    E) Temperature
    Ans: B, D, E
    Feedback:
    The nurse's preadministration assessment before the administration of the first dose of an antineoplastic drug should include the client's vital signs (blood pressure, temperature, pulse, and respiratory rate) and weight (to ensure accurate drug dosing).

14. After administering an antineoplastic drug, the nurse bases the ongoing assessment on which of the following factors? Select all that apply.
    A) Client's general condition
    B) Client's individual response to the drug
    C) Adverse reactions that may occur
    D) Guidelines established by the oncology physician or clinic
    E) Results of periodic laboratory tests and radiographic scans
    Ans: A, B, C, D, E
    Feedback:
    After the administration of an antineoplastic drug, the nurse bases the ongoing assessment on the following factors: client's general condition, client's individual response to the drug, adverse reactions that may occur, guidelines established by the oncology physician or clinic, and results of periodic laboratory tests and radiographic scans.

15. If the nurse has to clean up a spill of antineoplastic drug, which of the following personal protective equipment should be worn? Select all that apply.
    A) Gloves
    B) Safety goggles
    C) Gown
    D) Chemical spill boots
    E) NIOSH-approved respirator
    Ans: A, B, C, E
    Feedback:
    A nurse should wear a gown, safety goggles, gloves, and a NIOSH-approved respirator when cleaning up a spill of an antineoplastic drug.

16. The nurse suspects that a client is developing leukopenia and notifies the primary health care provider based on assessment of which of the following? Select all that apply.
    A) Temperature of 100.4°F or higher
    B) Cough
    C) Sore throat
    D) Frequent urination
    E) White blood cell count of less than 2500/mm^3
    Ans: A, B, C, D, E
    Feedback:
    The nurse should notify the physician immediately if any of the following occur during observation of a client receiving an antineoplastic drug as they may be signs of leukopenia: temperature of 100.4°F or higher, cough, sore throat, chills, frequent urination, or a white blood cell count of less than 2500/mm^3.

17. A nurse notifies the primary health care provider because assessment reveals signs of thrombocytopenia, including which of the following? Select all that apply.
    A) Bleeding gums
    B) Petechiae
    C) Tarry stools
    D) Hematuria
    E) Coffee-ground emesis
    Ans: A, B, C, D, E
    Feedback:
    The nurse should notify the physician immediately if any of the following occurs during observation of a client receiving an antineoplastic drug as they may be signs of thrombocytopenia: bleeding gums, easy bruising, petechiae, increased menstrual bleeding, tarry stools, hematuria, or coffee-ground emesis.

18. A client is receiving doxorubicin. The nurse suspects that extravasation has occurred based on assessment of which of the following? Select all that apply.
    A) Swelling
    B) Petechiae
    C) Lack of blood return
    D) Urticaria
    E) Redness
    Ans: A, C, E
    Feedback:
    The nurse should monitor a client receiving doxorubicin (Doxil) for signs of extravasation, including swelling, stinging, burning, or pain at the injection site; redness; and lack of blood return.

19. A client visits the health care facility for information on cancer. The client asks the nurse if regular consumption of green tea can cause harm. Which of the following should the nurse inform the client as possible effects of green tea?
    A) Dental caries
    B) Damage to heart
    C) Insomnia
    D) Damage to liver
    Ans: C
    Feedback:
    The nurse should inform the client that green tea can cause insomnia because it contains caffeine. Green tea is known to improve dental health and maintain health of the heart and liver.

20. A nurse is caring for a client who is prescribed Velban, a vinca alkaloid. The client asks the nurse about how the drug acts. Which of the following would the nurse integrate into the response?
    A) Interference with amino acid production in the S phase
    B) Stoppage of cells during the S and G_2 phases
    C) Inhibition of DNA synthesis during the S phase
    D) Prevention of cell division during the S and G_2 phases
    Ans: A
    Feedback:
    Vinca alkaloids interfere with amino acid production in the S phase. Podophyllotoxins stop the cells and prevent cell division during the S and G_2 phases. Camptothecin analog drugs inhibit DNA synthesis during the S phase.

21. A client has been receiving treatment with antineoplastic drugs that depress the bone marrow. Which preadministration assessment would be most important for the nurse to complete with respect to this effect?
    A) Evaluating the emotional response to the disease
    B) Obtaining a complete blood count
    C) Checking fluid intake and output
    D) Evaluating the client's understanding of therapy
    Ans: B
    Feedback:
    The nurse should perform a complete blood count to provide baseline data for future reference. Emotional response to the disease, client understanding of therapy, and fluid intake and output are preadministration assessments not pertaining to the depressing effect of the bone marrow.

22. A nurse is caring for a client being treated with antineoplastic drugs. The client is at risk for thrombocytopenia due to bone marrow suppression. The nurse would assess the client for which of the following?
    A) Bloody urine
    B) Concentrated urine
    C) Frequent micturition
    D) Pain on urination
    Ans: A
    Feedback:
    The nurse should monitor for bloody urine in a client at risk for thrombocytopenia due to bone marrow suppression. Concentrated urine, frequent micturition, or pain on urination is not indicative of thrombocytopenia.

23. A client is to start chemotherapy. The client is worried about going bald in the course of the treatment. How can the nurse assist the client in being comfortable with her body image?
    A) Forewarn about hair loss as permanent
    B) Explain it is not life-threatening
    C) Suggest the use of a wig or cap
    D) Explain that hair preserves body heat
    Ans: C
    Feedback:
    The nurse can assist the client in being comfortable with her body image by suggesting that the client use a wig or cap until the hair grows back. The nurse should forewarn about hair loss to prepare the client for the outcome of the treatment. The nurse should explain that hair preserves body heat and loss of hair is not life-threatening, and this will put the client at ease during treatment.

24. A nurse is caring for a client who is at risk for erythema during antineoplastic drug therapy. The nurse identifies a nursing diagnosis of Impaired Tissue Integrity. Which of the following would be appropriate to suggest?
    A) Scrub and clean skin often.
    B) Wear loose protective clothing.
    C) Ensure adequate sunlight.
    D) Have frequent baths.
    Ans: B
    Feedback:
    The nurse should suggest to the client to wear loose protective clothing and to watch areas of skinfolds for breakdown. The nurse should not suggest that the client scrub and clean the skin often, ensure adequate sunlight, or have frequent baths as these measures may aggravate the condition and cause further impairment to the tissue. The client is advised to avoid sunlight.

25. A client has been diagnosed with cancer. The physician prescribes antineoplastic drug therapy to the client. Which of the following would the nurse include in the discussion about the prescribed therapy?
    A) Leads to complete cure of cancer
    B) Destroys only cancerous cells
    C) Provides complete relief of symptoms of cancer
    D) Delays spread of cancer to other sites
    Ans: D
    Feedback:
    The nurse should explain to the client that antineoplastic drugs delay the spread of cancer to other sites in the body. These drugs do not always lead to the complete cure of cancer; instead, they slow the growth of the tumor. Antineoplastic drugs destroy not just cancerous cells but all rapidly dividing cells, which may be noncancerous also. These drugs do not provide complete relief from symptoms of cancer but can help in controlling the symptoms.

26. A client has been prescribed melphalan for the treatment of an ovarian tumor. The client wants to know how the drug acts. Which of the following would the nurse integrate into the response?
    A) Increased acidity of the cell environment
    B) Change to a more alkaline cell environment
    C) Neutralization of the alkalinity of the cell environment
    D) Change in the cell to a neutral environment
    Ans: B
    Feedback:
    The nurse should explain to the client that the alkylating agent changes the cell to a more alkaline environment, which in turn damages malignant cells, which are more susceptible to the effects of the alkylating drugs. Alkylating drugs do not increase the acidity of the cell environment, neutralize the alkalinity of the cell environment, or change the cell to a neutral environment.

27. A nurse is caring for a client undergoing treatment with plant alkaloids for cancer. The client is also receiving warfarin for a history of atrial fibrillation. The nurse would monitor the client for which of the following as a possible interaction?
    A) Increased risk of seizures
    B) Increased risk of ototoxicity
    C) Increased risk of CNS depression
    D) Increased risk of prolonged bleeding
    Ans: D
    Feedback:
    The nurse should monitor the client for the increased risk of prolonged bleeding. Increased risk of seizures occurs when phenytoin interacts with a plant alkaloid. Increased risk of ototoxicity is observed in clients receiving plant alkaloids with loop diuretics. Increased risk of CNS depression is observed in clients who are receiving antidepressants along with plant alkaloids.

28. A client is receiving cisplatin. Based on the nurse's understanding that this drug can be nephrotoxic, the nurse anticipates that the primary health care provider will prescribe which of the following?
    A) Mesna
    B) Leucovorin
    C) Dexrazoxane
    D) Amifostine
    Ans: D
    Feedback:
    Amifostine binds with the metabolites of cisplatin to protect the kidneys from the nephrotoxic effects. Mesna would be used with ifosfamide to protect the bladder from hemorrhagic cystitis. Leucovorin is used to provide folic acid to the cells after methotrexate administration. Dexrazoxane is a cardioprotective agent used with doxorubicin.

29. The nurse is providing care to a client with anorexia due to antineoplastic therapy. The nurse identifies a nursing diagnosis of Imbalanced Nutrition: Less Than Body Requirements. Which of the following would be least appropriate for the nurse to include in the client's plan of care?
    A) Offering fatty foods to stimulate the taste buds
    B) Providing small, frequent meals
    C) Avoiding exposure to unpleasant smells
    D) Providing foods that are high in protein
    Ans: A
    Feedback:
    Greasy or fatty foods and unpleasant sights, smells, and tastes should be avoided. Small, frequent meals and foods that are high in protein are appropriate.

30. After teaching a group of nursing students about the cell cycle and how it relates to antineoplastic drugs, the instructor determines that the teaching was successful when the students identify which phase of the cell cycle as being affected by antimetabolites?
    A) S phase
    B) M phase
    C) G_2 phase
    D) G_1 phase
    Ans: A
    Feedback:
    Antimetabolite drugs are substances that incorporate themselves into the cellular components during the S phase of cell division. This interferes with the synthesis of RNA and DNA, making it impossible for the cancerous cell to divide into two daughter cells. The vinca alkaloids interfere with amino acid production in the S phase and formation of microtubules in the M phase. Taxanes also interfere in the M phase with microtubules. Cells are stopped during the S and G_2 phases by the podophyllotoxins and thus are unable to divide. DNA synthesis during the S phase is inhibited by camptothecin analog drugs such as topotecan (Hycamtin).

1. A nursing instructor is conducting a class on the different types of blood cells. Which of the following would the instructor include as the correct function? Select all that apply.
   A) Erythrocytes supply our cells with oxygen from the lungs to the tissues.
   B) Erythrocytes control bleeding from microscopic to major tears in our tissues.
   C) Leukocytes supply our cells with oxygen from the lungs to the tissues.
   D) Leukocytes protect the body from dangerous organisms.
   E) Megakaryocytes control bleeding from microscopic to major tears in our tissues.
   Ans: A, D, E
   Feedback:
   Erythrocytes supply our cells with oxygen from the lungs to the tissues; leukocytes protect the body from dangerous organisms; and megakaryocytes control bleeding from microscopic to major tears in our tissues.

2. A nurse is providing care to a client experiencing hematologic failure. The nurse understands that this can include which of the following? Select all that apply.
   A) Anemia
   B) Bleeding
   C) Hypertension
   D) Infection
   E) Hypoglycemia
   Ans: A, B, D
   Feedback:
   Hematologic failure results when inadequate numbers of blood cells are produced, leading to decreased oxygen transportation, blood coagulation, or inability for the body to prevent the invasion of microorganisms, which can lead to anemia, bleeding, and infection.

3. After reviewing information about colony-stimulating factors, a group of nursing students demonstrate understanding of the information when they identify which of the following as true about filgrastim (Neupogen)? Select all that apply.
   A) Is a glycoprotein
   B) Promotes proliferation of leukocytes
   C) Stimulates differentiation of erythrocytes
   D) Stimulates maturation of megakaryocytes
   E) Is used to treat chemotherapy-induced neutropenia
   Ans: A, B, E
   Feedback:
   Colony-stimulating factors such as filgrastim (Neupogen) are glycoproteins used to stimulate proliferation, differentiation, and maturation of leukocytes. They are used to treat chemotherapy-induced neutropenia.

4. A client is prescribed sargramostim (Leukine). Before administering the drug, the nurse would inform the client that which of the following may occur with this drug? Select all that apply.
   A) Bone pain
   B) Anemia
   C) Infection
   D) Nausea
   E) Rash
   Ans: A, D, E
   Feedback:
   Headache, bone pain, nausea, vomiting, diarrhea, alopecia, and rash are adverse reactions the nurse should inform the client about prior to the administration of sargramostim (Leukine).

5. A client has a hypersensitivity reaction to pegfilgrastim (Neulasta). The nurse would expect to administer which of the following to treat the hypersensitivity reaction and maintain the use of colony-stimulating factors? Select all that apply.
   A) Prednisone
   B) Diphenhydramine
   C) Albuterol
   D) Naproxen
   E) Hydrocodone
   Ans: A, B, C
   Feedback:
   Colony-stimulating factors, like pegfilgrastim (Neulasta), can cause hypersensitivity reactions and should be treated with antihistamines (diphenhydramine), steroids (prednisone), and bronchodilators (albuterol) to maintain their use.

6. A client is to receive oprelvekin (Neumega). After administering the drug, the nurse would be alert for which of the following as a possible adverse reaction? Select all that apply.
   A) Bone pain
   B) Fluid retention
   C) Syncope
   D) Nausea
   E) Fever
   Ans: B, C, E
   Feedback:
   Fluid retention, peripheral edema, dyspnea, syncope, fever, and allergic reactions are adverse reactions associated with the administration of oprelvekin (Neumega).

7. A client is prescribed oprelvekin. The nurse would administer the drug cautiously to the client if he had a history of which of the following? Select all that apply.
   A) Diabetes
   B) Renal failure
   C) Peptic ulcer disease
   D) Heart failure
   E) Atrial fibrillation
   Ans: B, D, E
   Feedback:
   Oprelvekin (Neumega) is used cautiously in clients with renal failure, heart failure, or atrial arrhythmias.

8. A client is to receive darbepoetin alfa (Aranesp). When administering the drug, the nurse integrates knowledge of which of the following? Select all that apply.
   A) The drug is a glycoprotein.
   B) It is used to stimulate the production of erythrocytes.
   C) It helps stimulate differentiation of leukocytes.
   D) The drug promotes the maturation of megakaryocytes.
   E) It is used to stimulate thrombopoiesis.
   Ans: A, B
   Feedback:
   The following is true of the drug darbepoetin alfa (Aranesp): it is a glycoprotein, erythropoiesis-stimulating agent used to stimulate and regulate the production of erythrocytes (erythropoiesis).

9. A nurse might administer epoetin alfa to a client with which type of anemia? Select all that apply.
   A) Anemia of chronic kidney disease
   B) Iron deficiency anemia
   C) Vitamin B_{12} deficiency anemia
   D) Anemia caused by cancer chemotherapy
   E) Anemia caused be zidovudine (AZT) therapy
   Ans: A, D, E
   Feedback:
   Erythropoiesis-stimulating agents, like epoetin alfa, are used for anemia associated with the following: chronic kidney disease, cancer chemotherapy, zidovudine (AZT) therapy, and post–surgical replacement in place of allogeneic transfusions.

10. After administering methoxy polyethylene epoetin beta, the nurse would be alert for the development of which of the following as a possible adverse reaction? Select all that apply.
    A) Bone pain
    B) Fluid retention
    C) Hypertension
    D) Fatigue
    E) Arthralgia
    Ans: C, D, E
    Feedback:
    Hypertension, headache, nausea, vomiting, diarrhea, rashes, fatigue, arthralgia, and injection site skin reactions are adverse reactions the nurse should discuss with a client prior to the administration of methoxy polyethylene epoetin beta (Mircera).

11. Based on the nurse's understanding of epoetin alfa, the nurse would expect to administer the drug cautiously to a client with a history of which of the following? Select all that apply.
    A) Diabetes
    B) Renal failure
    C) History of seizures
    D) Congestive heart failure
    E) Hypotension
    Ans: C, D
    Feedback:
    Epoetin alfa (Procrit) is used cautiously in clients with hypertension, heart disease, congestive heart failure, or a history of seizures.

12. A nurse is administering darbepoetin alfa to a client. The nurse checks the client's hemoglobin level carefully during the administration based on the understanding that polycythemia can occur, leading to which of the following? Select all that apply.
    A) Increased mortality
    B) Tumor progression
    C) Severe hypotension
    D) Thromboembolic events
    E) Cardiovascular events
    Ans: A, B, D, E
    Feedback:
    Polycythemia is an overload of erythrocytes that can result in increased mortality, serious cardiovascular and thromboembolic events, and possible tumor progression in clients with cancer.

13. A client is prescribed ferrous sulfate (Feosol). Which of the following adverse reactions should the nurse discuss with a client prior to the administration of this drug? Select all that apply.
    A) Constipation
    B) Fluid retention
    C) Nausea
    D) Fatigue
    E) Dark stools
    Ans: A, C, E
    Feedback:
    GI irritation, nausea, vomiting, constipation, diarrhea, darker stools, headache, backache, and allergic reactions are adverse reactions the nurse should discuss with a client prior to the administration of ferrous sulfate (Feosol).

14. A client is prescribed ferrous sulfate. Before administering the drug, the nurse reviews the client's medical record. The nurse would withhold the drug and contact the primary health care provider if the client's history revealed which of the following? Select all that apply.
    A) Hemolytic anemia
    B) Vitamin B_{12} deficiency anemia
    C) Anemia of chronic kidney disease
    D) Hemochromatosis
    E) Hypertension
    Ans: A, D
    Feedback:
    The use of iron supplements is contraindicated in clients with hemochromatosis or hemolytic anemia.

15. A nurse should encourage a client with megaloblastic anemia to eat which of the following foods, as they are rich in folate? Select all that apply.
    A) Collard greens
    B) Grapes
    C) Wheat bread
    D) Salmon
    E) Chicken
    Ans: A, C, D, E
    Feedback:
    A deficiency of folic acid (folate) results in megaloblastic anemia, and the nurse should encourage a client to eat foods rich in folic acid including leafy green vegetables (collard greens), fish (salmon), meat, poultry (chicken), and whole grains (wheat bread).

16. A client is prescribed vitamin B_{12} for vitamin B_{12} deficiency anemia. After teaching the client about the drug, the nurse determines that the teaching was successful when the client states that which of the following can decrease the absorption of oral vitamin B_{12}? Select all that apply.
    A) Alcohol
    B) Calcium
    C) Neomycin
    D) Colchicine
    E) Phenytoin
    Ans: A, C, D
    Feedback:
    Alcohol, neomycin, and colchicine may decrease the absorption of oral vitamin B_{12}.

17. Prior to administering a drug used to treat anemia, the nurse should assess a client's vital signs, ability to carry out activities of daily living, and general appearance, and for the presence of which of the following other general symptoms? Select all that apply.
    A) Fatigue
    B) Pallor
    C) Headache
    D) Shortness of breath
    E) Sore tongue
    Ans: A, B, C, D, E
    Feedback:
    Prior to administering a drug used to treat anemia, the nurse should assess a client's vital signs, client's ability to carry out activities of daily living, and client's general appearance, and for the presence of other general symptoms including fatigue, shortness of breath, sore tongue, headache, and pallor.

18. A client with chronic kidney disease is prescribed epoetin alfa (Procrit). Which of the following would be appropriate for the nurse to do when administering this drug to promote optimal response? Select all that apply.
    A) Shake the vial vigorously prior to administration.
    B) Use the vial for multiple doses.
    C) Discard any unused portion after administration.
    D) Administer the drug either intravenously or subcutaneously.
    E) Avoid using the drug if the client is receiving dialysis.
    Ans: C, D
    Feedback:
    When administering epoetin alfa (Procrit) to a client with chronic kidney disease, the following apply: the drug is given three times weekly IV or subcutaneously; if the client is receiving dialysis, the drug is administered into the venous access line; the drug is mixed gently during preparation for administration; shaking may denature the glycoprotein; and the vial is used for only one dose and any remaining or unused portion is discarded.

19. A client with iron deficiency anemia is prescribed iron supplements. After administering the drug, the nurse would assess the client for which of the following as a possible adverse reaction related to gastrointestinal function?
    A) Headache
    B) Darker stools
    C) Soreness
    D) Backache
    Ans: B
    Feedback:
    The nurse needs to closely monitor the client for darker stools as an adverse gastrointestinal reaction to iron supplements. Headache and backache are the generalized system reactions to iron supplements. Soreness is a generalized system reaction to the administration of iron when given though the parenteral route.

20. A client who is prescribed an iron preparation for treating iron deficiency anemia tells the nurse that she has also been taking ascorbic acid. The nurse would assess the client for which of the following?
    A) An increase in seizure activity
    B) Signs of vitamin B_{12} deficiency
    C) Increased absorption of iron
    D) Signs of folate deficiency
    Ans: C
    Feedback:
    The nurse should monitor for an increased absorption of iron in the client due to the interaction of ascorbic acid with the iron preparation. An increase in seizure activity may occur when folic acid is administered with the hydantoins. Signs of folate deficiency may occur when sulfasalazine is administered concurrently. Vitamin B_{12} deficiency is a rare deficiency caused by a low dietary intake.

21. A client with megaloblastic anemia is prescribed leucovorin. The nurse would identify which of the following as a contraindication for this drug?
    A) Pernicious anemia
    B) Hemochromatosis
    C) Uncontrolled hypertension
    D) Hypersensitivity to human albumin
    Ans: A
    Feedback:
    Leucovorin is contraindicated in clients with pernicious anemia or other anemias in which vitamin B_{12} is deficient. Leucovorin is not contraindicated in clients with hemochromatosis, uncontrolled hypertension, and hypersensitivity to human albumin. Epoetin alfa is contraindicated in clients with uncontrolled hypertension and hypersensitivity to human albumin. Iron compounds are contraindicated in clients with hemochromatosis or hemolytic anemia.

22. A nurse is caring for a client with iron deficiency anemia who is receiving iron supplements. What information should the nurse include in the teaching plan for this client?
    A) Frequency of urination will increase.
    B) Soreness of throat might occur.
    C) Itching of throat might occur.
    D) Color of stools will become darker.
    Ans: D
    Feedback:
    The nurse should inform the client receiving oral iron supplements that the color of stools will become darker. Frequency of urination is not known to increase with the oral administration of iron supplements. Similarly, soreness of the throat and itching of the throat are also not known to occur with the oral administration of iron supplements.

23. A client who was treated for anemia is being discharged. The client has been instructed to continue with epoetin alfa for a week. Which of the following points should the nurse include in the teaching plan to educate the client about the therapy when caring for the client on an outpatient basis?
    A) Avoid use of multivitamin preparations.
    B) Report signs of joint pain to the primary health care provider.
    C) Follow the recommended diet provided by the primary health care provider.
    D) Take the drug on an empty stomach or with water.
    Ans: B
    Feedback:
    When caring for a client who is to take epoetin alfa for anemia, the nurse should instruct the client to report any signs of joint pain, dizziness, headache, fatigue, nausea, vomiting, or diarrhea to the primary health care provider. The nurse should instruct the client to avoid taking multivitamin preparations and to follow the diet recommended by the primary health care provider when caring for a client who has to take folic acid. The nurse should instruct the client to take the drug on an empty stomach or with water when caring for a client who has to take iron supplements on an outpatient basis.

24. A nurse is caring for a client with hypertension who is prescribed epoetin alfa for anemia. Which of the following would the nurse include in the plan of care when administering this drug to the client?
    A) Report 10 mm Hg rise in systolic blood pressure to primary health care provider.
    B) Note the hematocrit value before each dose during therapy.
    C) Shake the drug well before it is administered to the client.
    D) Administer the drug once every 3 weeks through IV route.
    Ans: B
    Feedback:
    When caring for a client who is prescribed epoetin alfa, the nurse should measure the hematocrit before each dose during the drug therapy. The nurse should monitor the blood pressure of a client with hypertension when he is receiving epoetin alfa and report any rise of 20 mm Hg or more in the systolic or diastolic pressure to the primary health care provider. The drug is given three times weekly IV or SC. If the client is receiving dialysis, the drug is administered into the venous access line. The drug is mixed gently during preparation for administration. Shaking may denature the glycoprotein.

25. A client is prescribed vitamin B_{12} for his pernicious anemia following gastric bypass surgery. The nurse would be alert for which of the following as a possible adverse reaction?
    A) Urticaria
    B) Dyspnea
    C) Pulmonary edema
    D) Joint pain
    Ans: C
    Feedback:
    The nurse needs to closely monitor the client for pulmonary edema, an adverse reaction to vitamin B_{12}. The other adverse reactions to the administration of vitamin B_{12} include increased RBC production, acne, peripheral vascular thrombosis, heart failure, mild diarrhea, and itching. Urticaria, dyspnea, and joint pain are not adverse reactions to vitamin B_{12}. Urticaria and dyspnea are caused when iron is administered parenterally. Joint pain is an adverse reaction to epoetin alfa.

26. A nurse identifies a nursing diagnosis of Constipation for a client receiving iron supplements. Which of the following would be appropriate to promote resolution of this problem?
    A) Increase the intake of milk and dairy products.
    B) Consume a diet high in fiber.
    C) Take antacids after consuming meals.
    D) Perform vigorous exercises.
    Ans: B
    Feedback:
    When caring for a client with constipation, the nurse should instruct the client to consume a high-fiber diet, increase fluid intake to 10 to 12 glasses of water daily, and increase activity. Increased activity can include exercise, however, the client does not need to engage in vigorous exercise. Increasing the intake of milk and dairy products or taking antacids after meals will not help reduce the constipation or the discomfort caused due to it.

27. A nurse is caring for a client who has been prescribed iron dextran. The nurse understands that which information is used to calculate the drug dosage?
    A) Client's age
    B) Client's height
    C) Hemoglobin level
    D) Platelet count
    Ans: C
    Feedback:
    Hemoglobin level and body weight of the client are important information the nurse requires to calculate the drug dosage for administering iron dextran. The client's age, height, and platelet count are not essential information when calculating drug dosage for iron dextran.

28. The nurse is preparing to administer vitamin B_{12} to a client. The nurse would administer the drug cautiously if the client had which condition?
    A) Pulmonary disease
    B) Hypertension
    C) Heart disease
    D) Seizures
    Ans: A
    Feedback:
    Vitamin B_{12} is cautiously administered to clients with pulmonary disease. Epoetin alfa and darbepoetin alfa are administered cautiously to clients with hypertension, heart disease, and a history of seizures.

29. A client is receiving a colony-stimulating factor and experiences dilutional anemia secondary to fluid retention associated with drug therapy. The nurse would most likely identify which nursing diagnosis?
    A) Fatigue
    B) Constipation
    C) Imbalanced Nutrition: Less Than Body Requirements
    D) Anxiety
    Ans: A
    Feedback:
    During administration of the CSF drugs, the patient may experience fluid retention. The increase in fluid volume makes the ratio of cells to fluid in the blood less, which results in a dilutional anemia. The patient may experience fatigue due to this anemia. Constipation is more likely when iron supplements are used. Imbalanced Nutrition: Less Than Body Requirements would be more likely if the client was experiencing anemia. There is no evidence to suggest Anxiety as a nursing diagnosis.

30. A nurse administers a test dose of iron dextran IM. The nurse would wait at least how long before administering the remainder of the dose?
    A) 15 minutes
    B) 30 minutes
    C) 45 minutes
    D) 60 minutes
    Ans: D
    Feedback:
    After giving the test dose, the nurse would monitor the client for an allergic response for at least 1 hour after the test dose and before administering the remaining dose. Epinephrine is kept on standby in the event of severe anaphylactic reaction.

31. A client receives filgrastim to treat neutropenia associated with chemotherapy. The nurse monitors the client's absolute neutrophil count (ANC). The nurse anticipates stopping the drug when the ANC reaches which level?
    A) $2500/mm^3$
    B) $5000/mm^3$
    C) $7500/mm^3$
    D) $10{,}000/mm^3$
    Ans: D
    Feedback:
    Injections of the CSF filgrastim are started at least 24 hours after the completion of a cycle of chemotherapy. The absolute neutrophil count (ANC) is monitored and therapy is continued until an ANC count of at least $10{,}000/mm^3$ is achieved.

1. A nursing instructor is evaluating the students' understanding of topical anti-infectives. The instructor determines that the group understands the information when they pair which drug with the infection treated correctly? Select all that apply.
   A) Erythromycin (Erygel) – acne vulgaris
   B) Ketoconazole (Nizoral) – episodes of HSV
   C) Ciclopirox (Loprox) – tinea pedis
   D) Acyclovir (Zovirax) – episodes of HSV
   E) Bacitracin (Baci-Rx) – tinea corporis
   Ans: A, C, D
   Feedback:
   The following topical anti-infective drugs are matched correctly with the infection they treat: erythromycin (Erygel) – acne vulgaris; ciclopirox (Loprox) – tinea pedis; and acyclovir (Zovirax) – episodes of HSV.

2. The nurse might suspect a hypersensitivity reaction has occurred in a client using azelaic acid (Azelex) if the client experiences a combination of which of the following? Select all that apply.
   A) Pruritus
   B) Urticaria
   C) Vomiting
   D) Erythema
   E) Mental status changes
   Ans: A, B, D
   Feedback:
   Topical anti-infectives, like azelaic acid (Azelex), result in a rash, pruritus, urticaria, dermatitis, irritation, and erythema, which may indicate a hypersensitivity reaction to the drug.

3. A nurse is providing care to two clients, one with a *Staphylococcus aureus* skin infection and another with a *Streptococcus pyogenes* infection. Which of the following would the nurse expect the primary health care provider to prescribe? Select all that apply.
   A) Mupirocin (Bactroban)
   B) Acyclovir (Zovirax)
   C) Ketoconazole (Nizoral)
   D) Metronidazole (Metro-Gel)
   E) Retapamulin (Altabax)
   Ans: A, E
   Feedback:
   Mupirocin (Bactroban) and retapamulin (Altabax) are topical anti-infectives that can be used to treat *Staphylococcus aureus* and *Streptococcus pyogenes* infections of the skin.

4. A nurse may use a topical antiseptic or germicide for which of the following reasons? Select all that apply.
   A) To reduce the number of bacteria on skin surfaces
   B) As a surgical scrub
   C) As a preoperative skin cleanser
   D) For washing the hands before and after caring for clients
   E) On minor cuts and abrasions to prevent infection
   Ans: A, B, C, D, E
   Feedback:
   A nurse may use a topical antiseptic or germicide for the following reasons: to reduce the number of bacteria on skin surfaces, as a surgical scrub, as a preoperative skin cleanser, for washing the hands before and after caring for clients, and on minor cuts and abrasions to prevent infection.

5. Which of the following might nurses use to clean their hands before and after caring for a client? Select all that apply.
   A) Chlorhexidine (Hibiclens)
   B) Fluocinonide (Lidex)
   C) Hexachlorophene (pHisoHex)
   D) Imiquimod (Aldara)
   E) Ketoconazole (Nizoral)
   Ans: A, C
   Feedback:
   Topical antiseptics, like chlorhexidine (Hibiclens) and hexachlorophene (pHisoHex), can be used by nurses to clean their hands before and after caring for a client. Fluocinonide is a topical corticosteroid. Imiquimod is a topical antiviral agent. Ketoconazole is a topical antifungal drug.

6. A client is diagnosed with dermatitis and the skin appears inflamed. Which topical drug would the nurse expect to administer to reduce itching, redness, and swelling caused by dermatitis? Select all that apply.
   A) Erythromycin (Erygel)
   B) Fluocinonide (Lidex)
   C) Penciclovir (Denavir)
   D) Imiquimod (Aldara)
   E) Hydrocortisone (Locoid)
   Ans: B, E
   Feedback:
   Topical corticosteroids, like fluocinonide (Lidex) and hydrocortisone (Locoid), when applied to inflamed skin reduce itching, redness, and swelling caused by dermatitis. Erythromycin is a topical antibiotic; penciclovir and imiquimod are topical antiviral drugs.

7. A client is prescribed a topical corticosteroid. The nurse understands that this drug is used in the treatment of which of the following conditions? Select all that apply.
   A) Psoriasis
   B) Eczema
   C) Asthma exacerbation
   D) Rheumatoid arthritis
   E) Insect bites
   Ans: A, B, E
   Feedback:
   Topical corticosteroids are used in the treatment of the following conditions: psoriasis, eczema, dermatitis, rashes, insect bites, and first- and second-degree burns.

8. A client is prescribed topical betamethasone. Which of the following would the nurse include when explaining the possible adverse reactions that may occur? Select all that apply.
   A) Burning
   B) Dryness
   C) Pruritus
   D) Nausea
   E) Fever
   Ans: A, B, C
   Feedback:
   Localized reactions caused by the topical administration of betamethasone that the nurse should discuss with the client include burning, pruritus, irritation, redness, dryness, allergic contact dermatitis, and secondary infection.

9. A client is prescribed topical triamcinolone. The nurse is aware that the client may experience systemic adverse reactions. Which of the following might the nurse assess? Select all that apply.
   A) Hyperglycemia
   B) Myasthenia gravis
   C) Cushing's syndrome
   D) Nausea
   E) Fever
   Ans: A, C
   Feedback:
   Systemic reactions caused by the topical administration of triamcinolone (Aristocort) that the nurse should be alert for include hypothalamic-pituitary-adrenal axis suppression, Cushing's syndrome, hyperglycemia, and glycosuria.

10. A client is prescribed a topical corticosteroid. The nurse understands that this drug would be contraindicated in which of the following circumstances? Select all that apply.
    A) Monotherapy for bacterial skin infections
    B) Ophthalmic use
    C) Otic use
    D) Monotherapy for widespread plaque psoriasis
    E) Low-potency corticosteroids on the face, groin, or axilla
    Ans: A, B, D
    Feedback:
    The use of topical corticosteroids is contraindicated in the following circumstances: known hypersensitivity to the drug or any component of the drug; as monotherapy for bacterial skin infections; high-potency corticosteroids for use on the face, groin, or axilla; for ophthalmic use; and as monotherapy in widespread plaque psoriasis.

11. A client is diagnosed with psoriasis. Which of the following would the nurse expect the primary health care provider to prescribe as topical treatment? Select all that apply.
    A) Chlorhexidine (Hibiclens)
    B) Calcipotriene (Dovonex)
    C) Vidarabine (Ara-A)
    D) Imiquimod (Aldara)
    E) Anthralin (Miconal)
    Ans: B, E
    Feedback:
    Anthralin (Miconal) and calcipotriene (Dovonex) are topical antipsoriatics used to treat psoriasis.

12. The nurse should discuss which of the following adverse reactions with a client prior to the topical administration of anthralin (Miconal)? Select all that apply.
    A) Hair discoloration
    B) Discoloration of fingernails
    C) Discoloration of skin
    D) Pruritus
    E) Burning
    Ans: A, B, D, E
    Feedback:
    Localized reactions caused by the topical administration of anthralin (Miconal) that the nurse should discuss with the client prior to administration include burning, pruritus, irritation, and temporary discoloration of the fingernails and hair.

13. After conducting an in-service program for a group of nurses about topical drugs used to treat skin disorders, the presenter determines that the teaching was successful when the group identifies which of the following as an appropriate use for topical enzymes? Select all that apply.
    A) Widespread psoriasis
    B) Chronic dermal ulcers
    C) First-degree sunburn
    D) Severely burned areas
    E) Tinea pedis
    Ans: B, D
    Feedback:
    A nurse may apply a topical enzyme to a client with chronic dermal ulcers or severely burned areas. Topical enzymes are not used for widespread psoriasis, first-degree sunburn, or tinea pedis.

14. A nurse is applying a topical agent that aids in the removal of dead soft tissue by hastening the reduction of proteins into simpler substances. Which of the following might the nurse be applying? Select all that apply.
    A) Bacitracin (Baci-Rx)
    B) Papain and urea (Accuzyme)
    C) Vidarabine (Ara-A)
    D) Collagenase (Santyl)
    E) Anthralin (Miconal)
    Ans: B, D
    Feedback:
    Topical enzymes, like papain and urea (Accuzyme) and collagenase (Santyl), aid in the removal of dead soft tissue by hastening the reduction of proteins into simpler substances.

15. A nurse administering collagenase (Santyl) topically to a client must be certain not to use which of the following products that can inactivate the enzymes in collagenase (Santyl)? Select all that apply.
    A) Detergents
    B) Water
    C) Iodine
    D) Silver
    E) Mercury
    Ans: A, D, E
    Feedback:
    A nurse administering collagenase (Santyl) topically to a client must be certain not to use detergents or products containing heavy metals, like mercury and silver, which can inactivate the enzymes in collagenase (Santyl).

16. The nurse is applying topical collagenase to a client. The nurse would assess the client for which of the following as a possible adverse reaction? Select all that apply.
    A) Mild pain
    B) Urticaria
    C) Numbness
    D) Pruritus
    E) Dermatitis
    Ans: A, C, E
    Feedback:
    Possible adverse reactions associated with the topical administration of collagenase (Santyl) include mild, transient pain; possible numbness; and dermatitis.

17. A nurse is preparing to administer a keratolytic based on the understanding that this drug is used to treat which of the following skin disorders? Select all that apply.
    A) Psoriasis
    B) Warts
    C) Acne vulgaris
    D) Seborrheic keratoses
    E) Corns
    Ans: B, D, E
    Feedback:
    Keratolytics are used to treat the following skin disorders: warts, calluses, corns, and seborrheic keratoses.

18. A client is to receive topical masoprocol. The nurse alerts the client to the possibility of which of the following as an adverse reaction? Select all that apply.
    A) Mild pain
    B) Scaling
    C) Numbness
    D) Flu-like syndrome
    E) Dry skin
    Ans: B, D, E
    Feedback:
    Adverse reactions related to the topical administration of masoprocol (Actinex) include transient burning sensation, rash, dry skin, scaling, and flu-like syndrome.

19. After teaching a group of nursing students about the use of salicylic acid (Duofilm), the instructor determines that the teaching was successful when the students identify which of the following as a contraindication? Select all that apply.
    A) Genital warts
    B) Facial warts
    C) Mucous membrane warts
    D) Moles
    E) Birthmarks
    Ans: A, B, C, D, E
    Feedback:
    The use of salicylic acid (Duofilm) is contraindicated in the following situations: on moles, birthmarks, warts with hair growing from them, genital or facial warts, warts on mucous membranes, or infected skin.

20. A nurse is reviewing topical drugs. The nurse demonstrates understanding of the information when the nurse identifies which drug as temporarily inhibiting the conduction of impulses from sensory nerve fibers? Select all that apply.
    A) Bacitracin (Baci-Rx)
    B) Papain and urea (Accuzyme)
    C) Lidocaine (Xylocaine)
    D) Dibucaine (Nupercainal)
    E) Anthralin (Miconal)
    Ans: C, D
    Feedback:
    Topical local anesthetics, like lidocaine (Xylocaine) and dibucaine (Nupercainal), are examples of topical drugs that temporarily inhibit the conduction of impulses from sensory nerve fibers.

21. A client is prescribed topical benzocaine. The nurse would monitor the client for which of the following as a possible adverse reaction?
    A) Stinging, tenderness, and sloughing
    B) Erythema, flaking, and dryness
    C) Transient burning sensation
    D) Oiliness or dryness of hair
    Ans: A
    Feedback:
    The nurse should monitor for stinging, tenderness, and sloughing in the client as adverse reactions to benzocaine. Erythema, flaking, and dryness are adverse reactions to masoprocol. A transient burning sensation is an adverse reaction to collagenase. Oiliness or dryness of the hair is an adverse reaction to selenium sulfide.

22. The primary health care provider has prescribed dexamethasone sodium phosphate for a client being treated for immunologic skin disorder. Assessment of which of the following would lead the nurse to suspect that the client is experiencing an adverse reaction to the drug?
    A) Redness or mild scaling
    B) Allergic contact dermatitis
    C) Dermatitis and irritation
    D) Photosensitivity
    Ans: B
    Feedback:
    The nurse should monitor for allergic contact dermatitis as an adverse reaction to dexamethasone sodium phosphate. Redness or mild scaling and photosensitivity are adverse reactions to hexachlorophene. Dermatitis and irritation are adverse reactions to povidone–iodine.

23. Chlorhexidine gluconate is being used in a client for preoperative skin preparation. Which of the following if noted would alert the nurse to a possible adverse reaction?
    A) Taste perversion
    B) Headache
    C) Deafness
    D) Mild erythema
    Ans: C
    Feedback:
    The nurse should monitor for deafness as an adverse reaction to the use of chlorhexidine gluconate. Taste perversion, headache, and mild erythema are adverse reactions to penciclovir.

24. A nurse is caring for a client who has been prescribed lidocaine viscous to be used for pain control of the oral mucosa. Which of the following instructions regarding the intake of food should the nurse give the client?
    A) Drink plenty of water along with food.
    B) Avoid intake of heavy and fibrous food.
    C) Ensure the food is not too hot or cold.
    D) Do not eat food for 1 hour after use.
    Ans: D
    Feedback:
    When lidocaine viscous is used for oral anesthesia to control pain, the nurse instructs the client not to eat food for 1 hour after use because local anesthesia of the mouth or throat may impair swallowing and increase the possibility of aspiration. The nurse need not instruct the client to drink plenty of water along with food, avoid intake of heavy and fibrous food, or ensure the food is not too hot or cold as these are not relevant with oral anesthesia.

25. Which of the following would be most important to include in the preadministration assessment of a client who is receiving topical therapy for a skin disorder? Select all that apply.
    A) Size of the area affected
    B) Appearance of the lesions
    C) Report of pain or burning
    D) Client's weight
    E) Blood pressure
    Ans: A, B, C
    Feedback:
    The preadministration assessment involves a visual inspection and palpation of the involved area(s). The areas of involvement, including the size, color, and appearance, are carefully measured and documented. The appearance of the skin lesions, such as rough and itchy patches, cracks between the toes, and sore and reddened areas, is noted so treatment can begin with an accurate database. A specific description is important so that changes indicating worsening or improvement of the lesions can be readily identified. Measuring the client's weight or blood pressure would not be important.

26. A client is prescribed a topical corticosteroid. Which of the following would be appropriate for the nurse to do?
    A) Clean the area with an antiseptic before applying the drug.
    B) Apply the topical corticosteroid sparingly.
    C) Place a sterile cloth over the area of application.
    D) Rub the application into the skin vigorously.
    Ans: B
    Feedback:
    Before drug application, the area is washed with soap and warm water unless the primary health care provider directs otherwise. Topical corticosteroids are usually ordered to be applied sparingly. The primary health care provider also may order the area of application to be covered or left exposed to the air. If covered, a dressing, not sterile cloth, would be used. The medication should be rubbed in gently.

27. When developing the plan of care for a client with a skin lesion requiring topical therapy, which nursing diagnosis would the nurse most likely identify?
    A) Acute Pain
    B) Risk for Infection
    C) Impaired Skin Integrity
    D) Disturbed Body Image
    Ans: C
    Feedback:
    Although all the nursing diagnoses apply, the most likely nursing diagnosis would be Impaired Skin Integrity due to the presence of a skin lesion and need for treatment.

28. A client is prescribed topical clindamycin therapy. The nurse instructs the client and family about possible systemic effects. The nurse determines that the teaching was successful when they state that they should contact the primary health care provider immediately if which of the following occur? Select all that apply.
    A) Stomach cramps
    B) Severe diarrhea
    C) Bloody stools
    D) Burning
    E) Pruritus
    Ans: A, B, C
    Feedback:
    Topical clindamycin can be absorbed in sufficient amounts to cause systemic effects. If severe diarrhea, stomach cramps, or bloody stools occur, the client should contact the primary health care provider immediately.

29. A nurse is instructing a client about how to apply the topical medication prescribed. Which of the following would the nurse identify as an appropriate way to remove the drug from the container? Select all that apply.
    A) Finger cot
    B) Clean finger
    C) Tongue blade
    D) Gauze pad
    E) Cotton swab
    Ans: A, C, D, E
    Feedback:
    The nurse should instruct the client to use a finger cot, tongue blade, gauze pad, or cotton swab to remove the drug from the container and then apply it to the skin.

30. After teaching a group of nursing students about topical drugs for skin disorders, the instructor determines that the teaching was successful when the students identify which of the following as used to prevent institutional outbreaks of methicillin-resistant *Staphylococcus aureus* (MRSA)?
    A) Bacitracin
    B) Mupirocin
    C) Retapamulin
    D) Clindamycin
    Ans: B
    Feedback:
    Mupirocin is applied to the nasal mucosa to reduce the risk of institutional outbreaks of MRSA. Bacitracin is used for relief of skin infections and to prevent infections with minor cuts and burns. Retapamulin is used to treat impetigo due to staphylococcus or streptococcus. Clindamycin is used to treat acne vulgaris.

1. A nurse is educating a client on the use of Acetasol HC otic drops, which contain hydrocortisone, acetic acid, propylene glycol, sodium, and benzethonium chloride. While educating the client, the nurse integrates knowledge that the preparation exerts the action of which of the following? Select all that apply.
   A) Antifungal
   B) Corticosteroid
   C) Antibacterial
   D) Analgesic
   E) Anesthetic
   Ans: A, B, C
   Feedback:
   Acetasol HC contains a corticosteroid (hydrocortisone); acetic acid and benzethonium provide antifungal and antibacterial action.

2. A nurse is preparing to administer Auralgan Otic drops, which contain benzocaine, antipyrine, and glycerin. The nurse understands that these drops provide which type of action? Select all that apply.
   A) Antifungal
   B) Corticosteroid
   C) Emollient
   D) Analgesic
   E) Local anesthetic
   Ans: C, D, E
   Feedback:
   Auralgan Otic contains a local anesthetic (benzocaine), an emollient (glycerin), and an analgesic (antipyrine).

3. After teaching a group of nursing students about otic preparations, the instructor determines that the teaching was successful when the students match which ingredient to its correct action? Select all that apply.
   A) Antipyrine – decongestant
   B) Benzocaine – local anesthetic
   C) Hydrocortisone – corticosteroid
   D) Carbamide peroxide – antimicrobial
   E) Acetic acid – antimicrobial
   Ans: B, C, E
   Feedback:
   The following ingredients found in miscellaneous otic preparations are correctly matched with their action: benzocaine – local anesthetic, hydrocortisone – corticosteroid, and acetic acid – antimicrobial. Antipyrine is an analgesic; carbamide peroxide aids in removing cerumen.

4. A nurse is teaching a client about the use of Auralgan Otic. The nurse would inform the client about which of the following as a possible adverse reaction? Select all that apply.
   A) Irritation
   B) Headache
   C) Pruritus
   D) Burning
   E) Congestion
   Ans: A, C, D
   Feedback:
   A nurse educating a client on the use of Auralgan Otic should advise the client of the following adverse reactions: irritation, pruritus, and burning.

5. A client would like to use carbamide peroxide (Debrox) to remove cerumen from the ears and asks the nurse if this is okay. In which of the following situations should this drug not be used? Select all that apply.
   A) Before ear surgery
   B) Perforated eardrum
   C) Congestion
   D) Ear drainage
   E) Dizziness
   Ans: B, D
   Feedback:
   Drugs like Debrox (carbamide peroxide), used to remove cerumen, are not used if ear discharge, drainage, pain, or irritation is present; if the eardrum is perforated; or after ear surgery.

6. Before administering an otic preparation, which of the following would the nurse be responsible for during the preadministration assessment? Select all that apply.
   A) Documentation of a description of any drainage
   B) Examination of the outer structures of the earlobe
   C) Examination of the inner structures of the ear
   D) Documentation of a description of visible cerumen
   E) Examination of the skin around the ear
   Ans: A, B, D, E
   Feedback:
   During preadministration assessment before administering an otic preparation, the nurse is responsible for the following: examination of the outer structures of the ear (earlobe and the skin around the ear) and documentation of a description of any drainage or visible cerumen. The primary health care provider examines the ear's external and internal structures.

7. When assessing an infant for a possible ear infection, which of the following behaviors would the nurse note? Select all that apply.
   A) Change in behavior
   B) Nasal drainage
   C) Irritability
   D) Ear tugging
   E) Fever
   Ans: A, C, D, E
   Feedback:
   When assessing the infant, the nurse would look for ear tugging, change in behavior, crying, fussing or irritability, or fever.

8. The nurse should question a client complaining of ear pain about which of the following during the assessment? Select all that apply.
   A) Tinnitus
   B) Feeling of fullness in the ear
   C) Dizziness
   D) Drowsiness
   E) Change in hearing
   Ans: A, B, C, E
   Feedback:
   The nurse should question a client complaining of ear pain about the following: presence of tinnitus or dizziness, changes in hearing, and feeling of fullness in the ear.

9. Which of the following are important points for the nurse to remember when administering an otic preparation to a client? Select all that apply.
   A) Have client tilt head downward.
   B) Warm the otic preparation prior to administration.
   C) Straighten the ear canal.
   D) Never insert the dropper tip into the ear canal.
   E) Insert a piece of cotton loosely into the ear canal to prevent the drug from flowing out.
   Ans: B, C, D, E
   Feedback:
   The following are important points for the nurse to remember when administering an otic preparation to a client: have the client lie on his or her side or tilt his or her head with the infected ear facing the ceiling; warm the otic preparation prior to administration; straighten the ear canal; insert a piece of cotton loosely into the ear canal to prevent the drug from flowing out; and never insert the dropper tip into the ear canal.

10. After teaching a group of nursing students about otic preparations, the instructor determines that the teaching was successful when the group identifies which of the following preparations as being used to aid in the removal of cerumen? Select all that apply.
    A) Cipro HC otic
    B) Floxin otic
    C) Debrox
    D) Acetasol HC
    E) Cerumenex
    Ans: C, E
    Feedback:
    Carbamide peroxide (Debrox) and triethanolamine polypeptide (Cerumenex) are otic preparations used to aid in the removal of cerumen.

11. A nurse is teaching a client who is prescribed eye drops as treatment for glaucoma. The nurse emphasizes the importance of therapy to reduce intraocular pressure to prevent which of the following? Select all that apply.
    A) Nerve damage
    B) Headache
    C) Visual loss
    D) Blindness
    E) Corneal tears
    Ans: A, C, D
    Feedback:
    Increased intraocular pressure can lead to optic nerve damage, visual loss, and blindness.

12. A client is receiving multiple ophthalmic drugs. Which of the following ophthalmic preparations would the nurse administer to the client for the purpose of treating increased intraocular pressure? Select all that apply.
    A) Brimonidine (Alphagan)
    B) Apraclonidine (Iopidine)
    C) Tobramycin (TobraDex)
    D) Ofloxacin (Ocuflox)
    E) Ganciclovir (Vitrasert)
    Ans: A, B
    Feedback:
    Brimonidine (Alphagan) and apraclonidine (Iopidine) are ophthalmic preparations used to treat increased intraocular pressure.

13. A client is diagnosed with a bacterial ocular infection. Which of the following would the nurse most likely administer if prescribed? Select all that apply.
    A) Brimonidine (Alphagan)
    B) Gatifloxacin (Zymar)
    C) Tobramycin (TobraDex)
    D) Betaxolol (Betoptic)
    E) Natamycin (Natacyn)
    Ans: B, C
    Feedback:
    Gatifloxacin (Zymar) and tobramycin (TobraDex) are antibiotic ophthalmic preparations used to treat bacterial infections. Brimonidine is used to decrease intraocular pressure. Betaxolol is used to treat chronic open-angle glaucoma. Natamycin is an antifungal agent.

14. A nurse is preparing to administer the ophthalmic drug ketorolac (Acular). The nurse understands that this drug can be used to treat which of the following ocular problems? Select all that apply.
    A) Bacterial infection
    B) Increased intraocular pressure
    C) Postoperative pain after cataract surgery
    D) Relief of ocular itching
    E) During ocular surgery to prevent miosis
    Ans: C, D, E
    Feedback:
    Ophthalmic NSAIDs, like ketorolac (Acular), are used to treat pain and inflammation after cataract surgery, for the relief of ocular itching, and during eye surgery to prevent miosis.

15. The nurse should discuss which of the following adverse reactions with a client prior to the administration of a drug to treat glaucoma? Select all that apply.
    A) Ocular burning
    B) Headache
    C) Numbness
    D) Tearing
    E) Blurred vision
    Ans: A, B, D, E
    Feedback:
    The nurse should discuss the following adverse reactions with a client prior to the administration of drugs used to treat glaucoma: locally in or near the eye—burning and stinging, headache, blurred vision, tearing, foreign body sensation, ocular allergic reactions, and ocular itching.

16. The nurse should discuss which of the following adverse reactions with a client prior to the administration of dexamethasone (Maxidex)? Select all that apply.
    A) Increased intraocular pressure
    B) Headache
    C) Numbness
    D) Ptosis
    E) Cataract formation
    Ans: A, D, E
    Feedback:
    The nurse should discuss the following adverse reactions with a client prior to the administration of an ophthalmic corticosteroid, like dexamethasone (Maxidex): increased intraocular pressure with optic nerve damage, loss of visual acuity, cataract formation, delayed wound healing, secondary ocular infection, exacerbation of corneal infections, dry eyes, ptosis, blurred vision, discharge, ocular pain, foreign body sensation, and pruritus.

17. The ophthalmic preparation erythromycin (Ilotycin) is contraindicated in clients with which of the following? Select all that apply.
    A) Gonorrheal infection of the eye
    B) Varicella infection of the eye
    C) Fungal infection of the eye
    D) Epithelial herpes simplex keratitis of the eye
    E) Mycobacterial infection of the eye
    Ans: B, C, D, E
    Feedback:
    Antibiotic ophthalmic preparations, like erythromycin (Ilotycin), are contraindicated in clients with the following: epithelial herpes simplex keratitis, varicella, mycobacterial, and fungal infections of the eye.

18. A client is diagnosed with springtime allergic conjunctivitis. The nurse would expect which of the following to be prescribed? Select all that apply.
    A) Brimonidine (Alphagan)
    B) Gatifloxacin (Zymar)
    C) Betaxolol (Betoptic)
    D) Pemirolast (Alamast)
    Ans: D
    Feedback:
    Mast cell stabilizers, like nedocromil (Alocril) and pemirolast (Alamast), are ophthalmic drugs useful in a client who has allergic conjunctivitis during the spring.

19. A nurse is caring for a patient who is prescribed 1% hydrocortisone/4.71 mg neomycin (Coly-Mycin S Otic) for bacterial infections of the external auditory canal. Which of the following instructions should be followed by the nurse administering the otic solution?
    A) When the patient is upright, remove the solution running out of the ear with gauze.
    B) After instilling the drops, insert a cotton piece deep into the ear to keep the drops in.
    C) Keep the patient lying on the untreated side for 30 minutes after instilling the drops.
    D) Insert the applicator or dropper tip sufficiently to reach into the external auditory canal.

    Ans: A

    Feedback:

    Once the patient is upright, the solution running out of the ear may be gently removed with gauze. A piece of cotton can be loosely inserted into the ear canal, but it should never be inserted deeply because if inserted too deeply it may cause increased pressure within the ear canal. The patient is kept lying on the untreated side after the medication is instilled for approximately 5 minutes to facilitate the penetration of the drops into the ear canal. The nurse should not insert the applicator or dropper tip anywhere into the ear or allow the tip to become contaminated.

20. A patient with open-angle (chronic) glaucoma has been prescribed brimonidine tartrate to lower intraocular pressure (IOP). After administering the drug, the nurse should monitor which of the following in the patient as a local effect of brimonidine tartrate?
    A) Allergic lip reactions
    B) Foreign body sensation
    C) Deposits in the cornea
    D) Brow ache and headache

    Ans: B

    Feedback:

    Although side effects are usually mild, treatment with brimonidine tartrate includes local effects like foreign body sensation, ocular hyperemia, burning and stinging, headache, visual blurring, ocular allergic reactions, and ocular pruritus. Allergic lip reactions, deposits in the cornea, brow ache, and headache are the transient local reactions to sympathomimetic drugs.

21. Trifluridine is being administered to a patient who is being treated for epithelial keratitis. The nurse caring for this patient should know that which of the following is a local reaction to trifluridine?
    A) Edema of the eyes
    B) Loss of visual acuity
    C) Cataract formation
    D) Delayed wound healing
    Ans: A
    Feedback:
    Trifluridine is an antiviral drug, and administration of antiviral ophthalmics may cause local reactions such as edema of the eyes or eyelids, irritation, pain, pruritus, inflammation, foreign body sensation, and corneal clouding. Loss of visual acuity, cataract formation, and delayed wound healing are the local adverse reactions associated with the administration of corticosteroid ophthalmic preparations like dexamethasone phosphate and are not related to the administration of trifluridine.

22. A client is admitted to the health care facility with acute glaucoma. After administering the prescribed ophthalmic drugs, the nurse continues to assess the client for pain relief at which frequency?
    A) Every hour
    B) Every 2 hours
    C) Every 3 hours
    D) Every 4 hours
    Ans: B
    Feedback:
    Clients admitted for treatment of acute glaucoma should be assessed every 2 hours for relief of pain. Pain in the eye may indicate increased intraocular pressure.

23. A client receiving ophthalmic drugs reports blurred vision. He tells the nurse, “I almost fell yesterday.” The nurse identifies which nursing diagnosis?
    A) Risk for Infection
    B) Risk for Injury
    C) Acute Pain
    D) Anxiety
    Ans: B
    Feedback:
    The client's complaint of blurred vision and his report of almost falling support the nursing diagnosis of Risk for Injury. Risk for Infection would be appropriate if the client had an infection or did not correctly instill the eyedrops, contaminating the container and/or solution. Acute Pain would be more appropriate if the client complained of pain either from the disorder or as an adverse effect. Although the client may be anxious, there is no evidence to support it.

24. After teaching a client how to administer eye drops, the nurse determines that additional teaching is needed when the client states which of the following? Select all that apply.
    A) "I'll check to make sure the solution is clear."
    B) "I'll drop the solution into the nasal side of the lower eye sac."
    C) "I'll be sure not to touch the tip of the dropper to the eye."
    D) "I'll check the label to make sure it reads for "ophthalmic use"
    Ans: B
    Feedback:
    When administering eye drops, the client should check the label to make sure the preparation is for ophthalmic use and it is clear. The client should drop the solution into the middle of the lower conjunctival sac, not directly on the eyeball. The tip should not come into contact with the eye to prevent contamination.

25. A client is prescribed two ophthalmic drugs that are to be administered at about the same time each day. The nurse instructs the client to separate the drug administration by which amount of time?
    A) 1 to 2 minutes
    B) 3 to 5 minutes
    C) 5 to 10 minutes
    D) 10 to 15 minutes
    Ans: C
    Feedback:
    If more than one topical ophthalmic drug is being used, the nurse would instruct the client to administer the drugs at least 5 to 10 minutes apart.

26. After teaching a group of nursing students about various ophthalmic drugs, the instructor determines that the teaching was successful when the students identify which of the following as a carbonic anhydrase inhibitor?
    A) Pilocarpine
    B) Brinzolamide
    C) Latanoprost
    D) Unoprostone isopropyl
    Ans: B
    Feedback:
    Brinzolamide is a carbonic anhydrase inhibitor. Pilocarpine is a miotic, direct-acing cholinesterase inhibitor. Latanoprost and unoprostone isopropyl are prostaglandin agonists.

27. A client is prescribed an otic agent to promote cerumen removal. Which of the following would the nurse include in the teaching plan? Select all that apply.
    A) Insert a cotton swab into the ear canal at least once a day.
    B) Do not use the drug if there is ear drainage.
    C) Use the drug for no more than 4 days.
    D) Call your primary health care provider if dizziness occurs.
    E) After the treatment, do not flush the ear with warm water to remove remaining wax.

    Ans: B, C, D

    Feedback:

    The nurse would instruct the client not to insert anything into the ear canal, such as a cotton swab; not to use the drug if there is ear drainage; to use the drug for no more than 4 days; to call the primary health care provider if dizziness occurs; and to remove any wax remaining after the treatment by gently flushing the ear with warm water using a soft rubber bulb syringe.

1. The use of an infusion pump or controller still requires nursing supervision and frequent monitoring of the IV infusion to monitor for signs of infiltration. Assessment of which of the following at the infusion site would lead the nurse to suspect that infiltration is occurring? Select all that apply.
   A) Edema
   B) Necrosis
   C) Burning
   D) Itching
   E) Redness
   Ans: A, E
   Feedback:
   It is important for the nurse to monitor frequently for signs of infiltration while an infusion pump is in use. The signs of infiltration include edema and redness at the infusion site.

2. A physician orders normal saline for a client to replace lost fluids due to poor oral intake. The order is for 1000 mL normal saline to be infused over a period of 6 hours. If the drop factor is 20 drops/mL, the nurse would set the IV flow rate at _____.
   Ans: 56 drops/min
   Feedback:
   1000 mL/6 hours = 166.7 mL/hr
   166.7 mL/hr × 1 hr/60 min = 2.8 mL/min
   2.8 mL/min × 20 = (55.5) or 56 drops/min

3. A physician orders normal saline for a client to replace lost fluids due to poor oral intake. The order is for 1000 mL D5W to be infused over a period of 4 hours. If the drop factor is 5 drops/mL, the nurse would determine the IV flow rate to be _____.
   Ans: 21 drops/min
   Feedback:
   1000 mL/4 hours = 250 mL/hr
   250 mL/hr × 1 hr/60 min = 4.17 mL/min
   4.17 mL/min × 5 = (20.8) or 21 drops/min

4. A physician orders levofloxacin (Levaquin) for a client to treat infection. The order is for levofloxacin (Levaquin) 500 mg/100 mL to be infused over a period of 1 hour. The IV infusion set has a drop factor of 10 drops/mL. The nurse would set the infusion flow rate at _____.
   Ans: 17 drops/min
   Feedback:
   100 mL/1 hour = 100 mL/hr
   100 mL/hr × 1 hr/60 min = 1.67 mL/min
   1.67 mL/min × 10 = (16.7) or 17 drops/min

5. A physician orders levofloxacin (Levaquin) for a client to treat infection. The order is for levofloxacin (Levaquin) 1000 mg/50 mL to be infused over a period of 1 hour. The IV infusion set delivers 15 drops/mL. The nurse would set the infusion rate at _____.
   Ans: 13 drops/min
   Feedback:
   50 mL/1 hour = 50 mL/hr
   100 mL/hr × 1 hr/60 min = 0.83 mL/min
   0.83 mL/min × 15 = (12.5) or 13 drops/min

6. A nurse is assessing a client receiving a continuous IV infusion. The nurse suspects that the client is developing fluid overload based on assessment of which of the following? Select all that apply.
   A) Weight loss
   B) Decreased blood pressure
   C) Distended neck veins
   D) Rapid breathing
   E) Hypernatremia
   Ans: C, D
   Feedback:
   Signs of fluid overload include headache, weakness, blurred vision, behavioral changes, weight gain, isolated muscle twitching, hyponatremia, rapid breathing, wheezing, coughing, rise in blood pressure, distended neck veins, elevated central venous pressure, and convulsions.

7. A client has developed electrolyte imbalances. The nurse understands that which of the following would most likely contribute to the client's current situation? Select all that apply.
   A) Vomiting
   B) Constipation
   C) Surgery
   D) Drug administration
   E) Diagnostic tests
   Ans: A, C, D, E
   Feedback:
   The following can result in electrolyte imbalances in a client: vomiting, diarrhea, surgery, drug administration, and diagnostic tests.

8. The primary health care provider prescribes potassium to be replaced IV. When reviewing the client's medication history, the nurse determines that the underlying reason for this order is most likely the administration of which of the following drugs? Select all that apply.
   A) Furosemide (Lasix)
   B) Enalaprilat (Vasotec)
   C) Bumetanide (Bumex)
   D) Ceftriaxone (Rocephin)
   E) Spironolactone (Aldactone)
   Ans: A, C
   Feedback:
   The administration of loop diuretics, like furosemide (Lasix) and bumetanide (Bumex), causes the excretion of water and potassium and can result in the need for IV fluid replacement of potassium.

9. A nurse suspects a client may have hypocalcemia based on assessment of which of the following? Select all that apply.
   A) Hypoactive reflexes
   B) Positive Homan's sign
   C) Positive Trousseau's sign
   D) Positive Chvostek's sign
   E) Tetany
   Ans: C, D, E
   Feedback:
   Signs and symptoms of hypocalcemia include hyperactive reflexes, carpopedal spasm, perioral paresthesias, positive Trousseau's and Chvostek's signs, muscle twitching, muscle cramps, tetany, laryngospasm, cardiac arrhythmias, nausea, vomiting, anxiety, confusion, emotional lability, and convulsions.

10. After teaching a group of nursing students about electrolyte imbalances, the instructor determines that the teaching was successful when the group identifies which of the following as indicative of hypercalcemia? Select all that apply.
   A) Constipation
   B) Oliguria
   C) Polydipsia
   D) Bone pain
   E) Anorexia
   Ans: A, C, D, E
   Feedback:
   Signs and symptoms of hypercalcemia include anorexia, nausea, vomiting, lethargy, bone tenderness or pain, polyuria, polydipsia, constipation, dehydration, muscle weakness and atrophy, stupor, coma, and cardiac arrest.

11. A nurse suspects a client receiving an infusion of magnesium may be developing hypermagnesemia based on assessment of which of the following? Select all that apply.
    A) Drowsiness
    B) Diaphoresis
    C) Hypertension
    D) Absent deep tendon reflexes
    E) Impaired respiration
    Ans: A, B, D, E
    Feedback:
    Signs and symptoms of hypermagnesemia include lethargy, drowsiness, impaired respiration, flushing, diaphoresis, hypotension, and weak or absent deep tendon reflexes.

12. A nurse suspects a client receiving an infusion of potassium to replace losses due to diuretic therapy may be developing hyperkalemia. Which of the following signs or symptoms would a nurse observe? Select all that apply.
    A) Anxiety
    B) Cardiac arrhythmias
    C) Hypertension
    D) Decreased bowel sounds
    E) Paresthesias
    Ans: A, B, E
    Feedback:
    The following are signs or symptoms a nurse would observe in a client with hyperkalemia: irritability, anxiety, listlessness, mental confusion, nausea, diarrhea, abdominal distress, GI hyperactivity, paresthesias, weakness and heaviness of the legs, flaccid paralysis, hypotension, cardiac arrhythmias, and ECG changes.

13. A nurse suspects a client receiving an infusion of normal saline may have hypernatremia based on assessment of which of the following? Select all that apply.
    A) Fever
    B) Dry skin
    C) Thirst
    D) Polyuria
    E) Weight gain
    Ans: A, B, C, E
    Feedback:
    Signs and symptoms of hypernatremia include fever; hot, dry skin; sticky mucous membranes; rough, dry tongue; edema; weight gain; intense thirst; excitement; restlessness; agitation; and oliguria or anuria.

14. A client has been experiencing severe vomiting. The nurse notifies the primary health care provider based on the suspicion that the client may be developing hyponatremia. Which of the following would support the nurse's suspicion? Select all that apply.
    A) Increased skin turgor
    B) Hypotension
    C) Bradycardia
    D) Anxiety
    E) Cold, clammy skin
    Ans: B, D, E
    Feedback:
    Signs and symptoms of hyponatremia include clammy skin, decreased skin turgor, apprehension, confusion, irritability, anxiety, hypotension, postural hypotension, tachycardia, headache, tremors, convulsions, abdominal cramps, nausea, vomiting, and diarrhea.

15. A nurse administering potassium to a client should monitor the client closely for signs of hyperkalemia if the client is concomitantly taking which of the following medications? Select all that apply.
    A) Lisinopril (Prinivil)
    B) Metoprolol (Lopressor)
    C) Spironolactone (Aldactone)
    D) Furosemide (Lasix)
    E) Hydrochlorothiazide
    Ans: A, C
    Feedback:
    A nurse administering potassium to a client should monitor the client closely for signs of hyperkalemia if the client is concomitantly taking the following medications: ACE inhibitors (lisinopril) and potassium-sparing diuretics, such as spironolactone.

16. A client who is prescribed digoxin (Lanoxin) is receiving electrolyte replacement therapy. The nurse would monitor the client for signs of digoxin toxicity if which of the following electrolytes is administered?
    A) Sodium
    B) Potassium
    C) Magnesium
    D) Phosphorous
    Ans: B
    Feedback:
    The nurse should monitor a client taking digoxin (Lanoxin) for signs of digoxin toxicity if potassium is being given.

17. A client is prescribed normal saline as an IV infusion. Based on the nurse's understanding of the drug, the nurse would administer the infusion cautiously to a client with which of the following? Select all that apply.
    A) Hypoproteinemia
    B) Urinary tract infection
    C) Edema
    D) Hepatic impairment
    E) Renal impairment
    Ans: A, C, E
    Feedback:
    The nurse must monitor clients with the following conditions particularly closely during the administration of normal saline because sodium should be used cautiously in these clients: surgical clients and clients with circulatory insufficiency, hypoproteinemia, edema, urinary tract obstruction, congestive heart failure, or renal impairment.

18. A client is receiving an IV infusion containing calcium. The nurse would monitor the client for which of the following as a possible adverse reaction? Select all that apply.
    A) Tingling
    B) Chalky taste
    C) Numbness
    D) Vein irritation
    E) Dry skin
    Ans: A, B, D
    Feedback:
    When administering calcium IV, the client may experience irritation of the vein, tingling, a metallic or chalky taste, and "heat waves."

19. The nurse should review a client's medical history prior to the administration of plasma protein factors as their administration is contraindicated in clients with which of the following? Select all that apply.
    A) Allergy to albumin
    B) Severe anemia
    C) Cardiac failure
    D) Cardiopulmonary bypass
    E) Dialysis
    Ans: A, B, C, D
    Feedback:
    The nurse should review a client's medical history prior to the administration of plasma protein factors as their administration is contraindicated in the following situations: clients with allergic reaction to albumin, severe anemia, cardiac failure, or normal or increased intravascular volume or clients on cardiopulmonary bypass.

20. After teaching a group of nursing students about plasma expanders, the instructor determines that the teaching was successful when the students identify which of the following as an example? Select all that apply.
    A) Normal saline
    B) Hetastarch
    C) Dextran
    D) D5W
    E) Albuminar/Buminate
    Ans: B, C
    Feedback:
    The following are examples of plasma expanders: hetastarch (Hespan), low-molecular-weight dextran (Dextran 40), and high-molecular-weight dextran (Dextran 75).

21. A nurse is assigned to care for a client who has received albumin intravenously. The nurse understands that which of the following reasons has prompted the administration of plasma protein fractions to the client?
    A) The client must have lost a lot of blood volume due to severe hemorrhage.
    B) The client must have poor wound-healing abilities with a high risk of infection.
    C) The client must be experiencing a condition in which plasma alone is lost.
    D) The client must be experiencing hypovolemic shock due to trauma.
    Ans: D
    Feedback:
    Plasma protein fractions are used in clients to treat hypovolemic shock that occurs as a result of burns, trauma, surgery, and infections or in conditions where shock is not currently present but likely to occur. It is also used in the case of hypoproteinemia, as might be seen in clients with nephrotic syndrome and hepatic cirrhosis, as well as other diseases or disorders. When a client loses a lot of blood volume due to severe hemorrhage or when a client is experiencing a condition in which plasma alone is lost, the client is administered plasma intravenously. Protein substrates like amino acid preparations are administered to clients with poor wound-healing abilities.

22. A nurse is caring for a client who is receiving electrolyte replacement therapy IV. When assessing the client's condition, the nurse observes signs of extravasation at the needle site. Which of the following would the nurse do next?
    A) Stop the current infusion and restart the infusion in another vein.
    B) Monitor the client's condition for signs of dizziness.
    C) Stop the IV infusion temporarily.
    D) Monitor the client's vital signs every 5 minutes.
    Ans: A
    Feedback:
    On observing extravasation at the needle site, the nurse should restart the IV infusion in another vein. The nurse need not monitor the client's condition for any signs of dizziness since dizziness is not known to occur in the client due to extravasation at the needle site. The nurse need not stop the IV infusion into the client's vein temporarily in case of extravasation. The nurse should monitor the client's vital signs as ordered or at intervals determined by the client's clinical condition, but the client's vital signs need not be constantly monitored every 5 minutes in the case of an extravasation since it will cause no major changes in blood pressure, pulse, or respiratory rate.

23. A nurse is assigned to care for a client who is receiving IV fat emulsions. The nurse reviews the client's history and identifies the need to administer the fat emulsion cautiously based on which of the following?
    A) The client has a pulmonary disorder.
    B) The client is allergic to eggs.
    C) The client has acute pancreatitis.
    D) The client has a vitamin deficiency.
    Ans: A
    Feedback:
    When caring for a client who is to receive IV fat emulsions, the nurse should know that IV fat emulsions are to be used cautiously if the client has a pulmonary disorder, severe liver impairment, anemia, and blood coagulation disorders. The solution is a pregnancy category C drug and is also used cautiously during pregnancy and lactation. IV fat emulsions are contraindicated if the client is allergic to eggs or has a condition that interferes with normal fat metabolism such as acute pancreatitis. Alcohol dextrose solutions and not IV fat emulsions are used cautiously in clients with a vitamin deficiency.

24. A nurse is caring for a client who has been prescribed potassium. From the client's health history, the nurse understands that the client has also been taking salt substitutes. Which of the following conditions should the nurse monitor for in this client, occurring due to the interaction of the salt substitutes with potassium?
    A) Severe hemolytic reactions
    B) Elevated serum potassium levels
    C) Acute dehydration
    D) Severe hyperkalemia
    Ans: D
    Feedback:
    The nurse should monitor the client's condition for signs and symptoms of severe hyperkalemia, which occurs due to the interaction of potassium with salt substitutes. Concurrent use of potassium with angiotensin-converting enzyme (ACE) inhibitors may result in an elevated serum potassium level. The interaction of potassium with salt substitutes does not cause acute dehydration or severe hemolytic reactions. These are conditions that contraindicate the use of potassium in clients.

25. A client is prescribed bicarbonate. The client's medication history reveals that the client is also taking fluoroquinolones. The nurse would be alert for the development of which of the following due to an interaction of these two drugs?
    A) Respiratory alkalosis
    B) Severe abdominal pain
    C) Increased risk of crystalluria
    D) Renal impairment
    Ans: C
    Feedback:
    The nurse should monitor the client's condition for an increased risk of crystalluria as a result of the interaction of fluoroquinolones and bicarbonate. The interaction of bicarbonate and fluoroquinolones does not cause respiratory alkalosis, severe abdominal pain, or renal impairment. These conditions contraindicate the use of bicarbonate.

26. A nurse is caring for a client who is receiving ammonium chloride. The nurse would be alert for the development of which of the following as a possible adverse reaction?
    A) Depressed reflexes
    B) Muscle weakness
    C) Circulatory collapse
    D) Metabolic acidosis
    Ans: D
    Feedback:
    The nurse should monitor the client's condition for metabolic acidosis as an adverse reaction to ammonium chloride. Muscle weakness, circulatory collapse, and depressed reflexes are adverse reactions associated with the administration of magnesium.

27. A nurse is caring for a client prescribed dextran IV. The nurse would observe the client for which of the following as a possible adverse reaction?
    A) Cyanosis
    B) Wheezing
    C) Hyperlipidemia
    D) Hypercoagulability
    Ans: B
    Feedback:
    Dextran administration may result in allergic reactions, which are evidenced by urticaria, hypotension, nausea, vomiting, headache, dyspnea, fever, tightness of the chest, and wheezing. Therefore, the nurse should monitor the client for wheezing. Cyanosis, hyperlipidemia, and hypercoagulability are adverse reactions observed when fat emulsions are used.

28. A nurse is preparing to initiate IV access for a client who is prescribed IV fluid therapy. After selecting the site, which of the following would the nurse do next?
    A) Place a tourniquet above the selected site.
    B) Cleanse the site according to facility policy.
    C) Insert the needle while pulling the skin taut.
    D) Check for blood flow.
    Ans: A
    Feedback:
    When a site has been selected for venipuncture, the nurse places a tourniquet above the selected vein, then cleanses the site according to facility policy. The vein fills (distends) and then the skin is pulled taut (to anchor the vein and the skin) and the needle is inserted into the vein bevel up, and at a low angle to the skin. Blood should immediately flow into the syringe if the needle is properly inserted into the vein.

29. A client is at risk for hypercalcemic syndrome. The primary health care provider prescribes additional therapy to combat this syndrome. Which of the following would the nurse expect to be prescribed? Select all that apply.
    A) Sodium chloride
    B) Potassium
    C) Furosemide
    D) Magnesium
    E) Bicarbonate
    Ans: A, C
    Feedback:
    To combat hypercalcemic syndrome, the primary health care provider may prescribe IV sodium chloride and a potent diuretic such as furosemide. When used together, these two drugs markedly increase calcium renal clearance and reduce hypercalcemia.

30. A client is prescribed total parenteral nutrition due to weight loss secondary to cancer treatment. The nurse would most likely identify which nursing diagnosis as the priority?
    A) Risk for Injury
    B) Imbalanced Nutrition: Less Than Body Requirements
    C) Deficient Fluid Volume
    D) Risk for Decreased Cardiac Output
    Ans: B
    Feedback:
    The need for total parenteral nutrition would support the nursing diagnosis of Imbalanced Nutrition: Less Than Body Requirements to help promote weight gain and nutritional stability. Risk for Injury would be appropriate if the client was experiencing weakness or muscular cramping that could lead to falls. Deficient Fluid Volume may be appropriate, but this would not be the most likely nursing diagnosis for this client experiencing weight loss. Risk for Decreased Cardiac Output would be appropriate if the client was receiving electrolyte replacements, such as potassium.

31. A nurse is teaching a client about his prescribed potassium replacement therapy. The client is to continue taking the drug orally at home. After teaching the client about this therapy, the nurse determines that additional teaching is needed when the client states which of the following?
    A) "I'll take the drug immediately after a meal."
    B) "I need to drink a full glass of water when I take the drug."
    C) "If I have trouble swallowing the drug, I can crush it."
    D) "If the pharmacy gives me a liquid form, I can mix it in cold water or juice."
    Ans: C
    Feedback:
    When given orally, potassium may cause GI distress. Therefore, it is given immediately after meals or with food and a full glass of water. Oral potassium must not be crushed or chewed. If a liquid form is used, the client should mix and dissolve the liquid in cold water or juice.

32. A nurse is administering IV fluid and electrolyte therapy to a client. The nurse reviews the client's laboratory test results. Which result would the nurse immediately report to the primary health care provider?
    A) Calcium 4.7 mEq/L
    B) Magnesium 2.0 mEq/L
    C) Potassium 2.1 mEq/L
    D) Sodium 140 mEq/L
    Ans: C
    Feedback:
    The nurse would report a potassium level of 2.1 mEq/L because this indicates hypokalemia. A calcium level of 4.7 mEq/L, magnesium level of 2.0 mEq/L, and sodium level of 140 mEq/L are within normal ranges.