

## Chapter 08, Antibacterial Drugs That Interfere With Protein Synthesis

1. A client has returned to the clinic for follow-up of an infection which is being treated with an aminoglycoside and reports ringing in the ears and dizziness. 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) Injury Risk

Answer: D

Rationale: The development of ototoxicity would lead the nurse to identify a nursing diagnosis of Injury Risk related to the effects of ototoxicity. Although the client's ringing in the ears could cause discomfort, the priority nursing diagnosis would be Injury Risk. There is no evidence of Impaired Comfort, Altered Thought Process, or Diarrhea.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 101, Nursing Diagnoses

2. A client is receiving iron therapy for anemia. The health care provider has ordered tetracycline for an infection. Which action 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.

Answer: C

Rationale: 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.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 101, Oral Administration

3. A client is prescribed demeclocycline. The nurse would teach the client to be alert for which signs or symptoms?
- A) Photosensitivity
  - B) Abdominal pain
  - C) Cramping
  - D) Blood dyscrasias

Answer: A

Rationale: Demeclocycline causes photosensitivity reactions. Abdominal pain and cramping are adverse reactions of macrolides. Blood dyscrasias are an adverse reaction of lincosamides.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Teaching/Learning

Reference: p. 95, Tetracyclines

4. A client who routinely takes antacids has been prescribed tetracycline. The nurse explains to the client that there is an increased risk of which effect related to this combination?
- A) Increased risk of bleeding
  - B) Increased action of neuromuscular blocking drugs
  - C) Increased profound respiratory depression
  - D) Decreased absorption of tetracycline

Answer: D

Rationale: 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.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 1

Cognitive Level: Understand

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 95, Tetracyclines

5. A nurse is preparing to administer lincosamide to a client. The nurse should examine the client's record to ensure which contraindication does not apply in this case?

- A) Children younger than 9 years
- B) Clients with preexisting liver disease
- C) Clients taking cisapride
- D) Clients with myasthenia gravis

Answer: C

Rationale: Lincosamide is contraindicated in clients taking cisapride. Tetracyclines are contraindicated in children younger than 9 years and pregnant women. Macrolides are contraindicated in clients with preexisting liver disease and clients with myasthenia gravis.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 99, Miscellaneous Drugs Inhibiting Protein Synthesis

6. A middle-aged client is to receive tetracycline for treatment of *H. pylori* infection, as well as continue with digoxin for a history of heart disease. The nurse will be prepared to monitor the client for which potential condition?
- A) Respiratory depression
  - B) Decreased effectiveness of tetracycline
  - C) Prolonged clotting times
  - D) Risk of digoxin toxicity

Answer: D

Rationale: When digoxin interacts with tetracyclines, the client 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.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 95, Tetracyclines

7. A client has been prescribed oral tetracycline for the treatment of acne. Which instruction must the nurse include in the client teaching plan?
- A) Take on an empty stomach.
  - B) Take along with a meal.
  - C) Take along with milk or fruit juice.
  - D) Take immediately after meals.

Answer: A

Rationale: 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.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 103, Educating the Client and Family

8. 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 solution?
- A) Normal saline
  - B) 0.45% sodium chloride
  - C) Dextrose 5% and water
  - D) Heparin

Answer: C

Rationale: Quinupristin/dalfopristin is irritating to the vein. After peripheral infusion, the vein should be flushed with 5% dextrose in water (D<sub>5</sub>W), because the drug is incompatible with saline or heparin flush solutions.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 99, Miscellaneous Drugs Inhibiting Protein Synthesis

9. A client, receiving linezolid, is fond of eating chocolates and drinking coffee. When teaching the client about this drug which adverse effect should the nurse point out presents the greatest risk to this client?
- A) Severe hypertension
  - B) Drowsiness
  - C) Nervousness
  - D) Nausea

Answer: A

Rationale: The nurse should inform the client that if tyramine found in chocolates and coffee interacts with linezolid, the client will develop an increased risk for severe hypertension. Tyramine-containing foods interacting with linezolid do not cause drowsiness, nervousness, or nausea.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Teaching/Learning

Reference: p. 99, Miscellaneous Drugs Inhibiting Protein Synthesis

10. A client who receives statin therapy for elevated lipid levels is to begin receiving daptomycin. Which laboratory value should the nurse prioritize?
- A) Creatine phosphokinase levels
  - B) Blood glucose levels
  - C) White blood cell count
  - D) International normalized ratio

Answer: A

Rationale: 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).

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 2

Cognitive Level: Analyze

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 99, Miscellaneous Drugs Inhibiting Protein Synthesis

11. After teaching a group of nursing students about indications for linezolid (Zyvox), the instructor determines a need for additional teaching when the students choose which disorder as an indication?
- A) Community-acquired pneumonia (CAP)
  - B) Vancomycin-resistant *Enterococcus faecium* (VREF)
  - C) Methicillin-resistant *Staphylococcus aureus* (MRSA)
  - D) Acute otitis media

Answer: D

Rationale: Linezolid is used in the treatment of vancomycin-resistant *Enterococcus faecium* (VREF), health care-acquired 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. Cephalosporins are more commonly used to treat acute otitis media.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 1

Cognitive Level: Understand

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 99, Miscellaneous Drugs Inhibiting Protein Synthesis

12. A client is scheduled for abdominal surgery and is ordered to receive neomycin. The client asks the nurse why this drug is prescribed. 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."

Answer: C

Rationale: Neomycin is 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 client. The drug has no effect on preventing blood clots postoperatively.

Question Format: Multiple Choice

Chapter: 8

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 96, Aminoglycosides

13. After teaching a group of students about tetracyclines, the instructor determines that the teaching was successful when the students choose which factor as a true statement? Select all that apply.
- A) Are broad-spectrum antibiotics
  - B) May cause permanent discoloration of the teeth in children
  - C) Can be used when penicillins are contraindicated
  - D) Are contraindicated in children younger than 6 years
  - E) Are used to treat Rocky Mountain spotted fever

Answer: A, B, C, E

Rationale: 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 unless absolutely necessary because these drugs may cause permanent yellow-gray-brown discoloration of the teeth.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 1

Cognitive Level: Understand

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 95, Tetracyclines

14. 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 chooses which reaction? Select all that apply.
- A) Photosensitivity
  - B) Hypoglycemia
  - C) Hypotension
  - D) Diarrhea
  - E) Stomatitis

Answer: A, D, E

Rationale: 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.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 95, Tetracyclines

15. A nurse is assessing 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 also taking which additional drug? Select all that apply.
- A) Digoxin
  - B) Phenytoin
  - C) Vancomycin
  - D) Warfarin
  - E) Carbamazepine

Answer: A, D

Rationale: 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.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 95, Tetracyclines

16. A nursing instructor determines a teaching session about aminoglycosides is successful when the students correctly choose which drugs belonging in this class of drugs? Select all that apply.
- A) Amikacin
  - B) Amoxicillin
  - C) Vancomycin
  - D) Kanamycin
  - E) Azithromycin

Answer: A, D

Rationale: 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.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 96, Aminoglycosides

17. A nurse is preparing to administer an aminoglycoside to a client. The nurse would be alert for the development of which potential toxicities? Select all that apply.
- A) Nephrotoxicity
  - B) Cardiotoxicity
  - C) Ototoxicity
  - D) Hepatotoxicity
  - E) Neurotoxicity

Answer: A, C, E

Rationale: 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.

Question Format: Multiple Select



Chapter: 8

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 96, Aminoglycosides

18. The nurse is assessing a client who is receiving gentamicin. Which findings should the nurse prioritize? Select all that apply.
- A) Proteinuria
  - B) Hematuria
  - C) Decreased urine output
  - D) Increased serum creatinine
  - E) Decreased fluid intake

Answer: A, B, C, D

Rationale: Proteinuria, hematuria, decreased urine output, increased serum creatinine, and increased blood nitrogen urea (BUN) are suggestive of nephrotoxicity. Decreased fluid intake would support dehydration.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 96, Aminoglycosides

19. A nurse is preparing to administer medications and notes several clients are to receive aminoglycosides. Which clients should the nurse clarify that they should receive this drug due to their history? Select all that apply.
- A) Preexisting hearing loss
  - B) Pregnancy
  - C) Parkinsonism
  - D) Diabetes
  - E) Hyperlipidemia

Answer: A, B, C

Rationale: The aminoglycosides are contraindicated in clients with preexisting hearing loss, myasthenia gravis, and parkinsonism and during lactation and pregnancy.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 96, Aminoglycosides

20. A nursing instructor is preparing a teaching plan for a group of nursing students about macrolide antibacterial drugs. Which factors would the instructor expect to include? Select all that apply.
- A) Broad-spectrum antibiotics
  - B) Contraindicated in clients with renal dysfunction
  - C) May cause visual disturbances
  - D) Can be used in clients allergic to penicillins
  - E) Can be used to treat acne vulgaris

Answer: A, C, D, E

Rationale: 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 preexisting liver disease.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 1

Cognitive Level: Understand

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 98, Macrolides

21. A nursing instructor is preparing to teach about clindamycin. Which disorders should the instructor point out as a potential contraindication and requires cautious use? Select all that apply.
- A) Seizure disorder
  - B) GI disorders
  - C) Myasthenia gravis
  - D) Diabetes
  - E) Hepatic impairment

Answer: B, C, E

Rationale: Clindamycin, a lincosamide, should be used cautiously in clients with a history of GI disorders, renal disease, liver impairment, or myasthenia gravis.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 1

Cognitive Level: Analyze

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 98, Precautions

22. 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 finding? 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

Answer: A, B, D, E

Rationale: 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.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 100, Ongoing Assessment

23. A nurse is preparing to administer lincomycin via IM injection. Which action 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 health care provider of any persistent localized reactions.

Answer: A, B, D, E

Rationale: 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 health care provider; rotates the injection sites; and records the site used for injection in the client's chart.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 101, Parenteral Administration

24. A client is being discharged with a prescription for linezolid. After teaching the client about this drug, the nurse determines that additional teaching is needed when the client explains to a family member that they can consume which food or drink without any risks? Select all that apply.
- A) Alcohol
  - B) Prunes
  - C) Aged cheese
  - D) Pepperoni
  - E) Broccoli

Answer: A, C, D

Rationale: 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 client.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 4

Cognitive Level: Analyze

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 99, Miscellaneous Drugs Inhibiting Protein Synthesis

25. A nursing instructor is preparing a class on various antibacterial drugs interfering with protein synthesis, with the discussion focusing on quinupristin/dalfopristin. Which medications would the instructor include as interacting with quinupristin/dalfopristin, thus increasing the risk for toxicity? Select all that apply.
- A) Lorazepam
  - B) Quinapril
  - C) Ritonavir
  - D) Atorvastatin
  - E) Tacrolimus

Answer: A, C, D

Rationale: 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.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 99, Miscellaneous Drugs Inhibiting Protein Synthesis

26. A client is ordered to receive neomycin as part of the treatment plan for hepatic coma. Which action 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

Answer: A, B

Rationale: During the early stages of hepatic coma, various changes in the level of consciousness may be seen. At times, the client may appear lethargic and respond poorly to commands. Because of these changes in the level of consciousness, the client may have difficulty swallowing, and a danger of aspiration is present. If the client 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 client has hepatic coma. The drug does not affect the client's respiratory function. There is no infection; therefore, there is no need for culture and sensitivity testing.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 100, Preadministration Assessment

27. A nurse suspects that a client receiving an aminoglycoside is developing neurotoxicity based on which assessment finding? Select all that apply.
- A) Paresthesias
  - B) Tingling around the mouth
  - C) Ringing in the ears
  - D) Vertigo
  - E) Muscle twitching

Answer: A, B, E

Rationale: 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.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 4

Cognitive Level: Analyze

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Clinical Problem-solving Process (Nursing Process)

Reference: p. 96, Aminoglycosides

28. A client is to receive tetracycline therapy at home. After teaching the client about foods to avoid when taking the drug, the nurse determines that the teaching was successful when the client explains he will avoid which foods? Select all that apply.
- A) Yogurt
  - B) Cheese
  - C) Calcium-fortified cereals
  - D) Citrus fruits
  - E) Green leafy vegetables

Answer: A, B, C

Rationale: The client 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.

Question Format: Multiple Select

Chapter: 8

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 95, Tetracyclines