

Detailed Answer Key

ATI Pharmacology Practice

1. A nurse is caring for a client who has heart failure and a prescription for digoxin 125 mcg PO daily. Available is digoxin PO 0.25 mg/tablet. How many tablets should the nurse administer per dose? (Round the answer to the nearest tenth. Use a leading zero if it applies. Do not use a trailing zero.)

0.5 tablet(s)

Correct Rationale: Ratio and Proportion

STEP 1: What is the unit of measurement the nurse should calculate? tablet STEP 2: What is the dose the nurse should administer? Dose to administer= Desired 125 mcg STEP 3: What is the dose available? Dose available = Have 0.25 STEP 4: Should the nurse convert the units of measurement? Yes (mcg does not equal mg) $1 \text{ mg}/1000 \text{ mcg} = x \text{ mg}/125 \text{ mcg}$

$X = 0.125 \text{ mg}$

STEP 5: What is the quantity of the dose available? 1 tablet STEP 6: Set up an equation and solve for X. $\text{Have}/\text{Quantity} = \text{Desired}/X$ $0.25 \text{ mg}/1 \text{ tablet} = 0.125 \text{ mg}/X \text{ tablet}$ $X = 0.5$

STEP 7: Round if necessary. STEP 8: Reassess to determine whether the amount to administer makes sense. If there are 0.25 mg/tab and the provider prescribed 0.025 mg, it makes sense to administer 1/2 tab. The nurse should administer digoxin 1/2 tab PO daily.

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Dimensional Analysis

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STEP 6: Set up an equation and solve for X. $X = \text{Quantity}/\text{Have} \times \text{Conversion}$

$(\text{Have})/\text{Conversion}(\text{Desired}) \times \text{Desired}/X \text{ tablet} = 1 \text{ tablet}/0.25 \text{ mg} \times 0.125 \text{ mg}/X = 0.5$

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it makes sense to administer 1/2 tab. The nurse should administer digoxin 1/2 tab PO

daily.

2. A nurse is planning to apply a transdermal analgesic cream prior to inserting an IV for a preschool-age child. Which of the following actions should the nurse plan to take? (Select all that apply.)

- A. Spread the cream over the lateral surface of both forearms.
- B. Apply to intact skin.
- C. Apply the medication an hour before the procedure begins.
- D. Cleanse the skin prior to procedure.
- E. Use a visual pain rating scale to evaluate effectiveness of the treatment.

Rationale: Spread the cream over the lateral surface of both forearms is incorrect. The nurse should apply the smallest amount of cream to the smallest area required to reduce the risk for systemic toxicity. Systemic effects of the anesthetic include bradycardia, heart block, and seizures.

Apply to intact skin is correct. The nurse should apply cream over intact skin to reduce the risk for systemic toxicity. The nurse should wear gloves while applying the cream to reduce the risk of absorbing the anesthetic.

Apply the medication an hour before the procedure begins is correct. The nurse should allow 30 min to 1 hr for the topical analgesic to take effect.

Cleanse the skin prior to procedure is correct. Apply the topical analgesic to clean skin to

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increase absorption.

Use a visual pain rating scale to evaluate effectiveness of the treatment is correct. A child's response and understanding of pain depends on the child's age and stage of development. A preschooler might be unable to describe pain due to a limited vocabulary. Use a visual scale (FACES or OUCHER Scale) with faces or colors to assess evaluate the effectiveness of the treatment.

3. A nurse is providing instructions about bowel cleansing with polyethylene glycol-electrolyte solution (PEG) for a client who is going to have a colonoscopy. Which of the following information should the nurse include?

A. "To prevent dehydration, drink an additional liter of fluid during preparation time."

Rationale: Dehydration does not occur with PEG. No additional fluid intake is necessary.

B. "Expect bowel movements to begin 3 hr following completion of solution."

Rationale: Bowel movements begin about 1 hr following the first dose.

C. "Abdominal bloating might occur."

Rationale: While PEG is well-tolerated, adverse effects include nausea, bloating, and abdominal discomfort.

D. "Drink 400 mL every hour until bowel movements are clear."

Rationale: The client should ingest the full solution by drinking 250 mL to 300 mL every 10 minutes over 2 to 3 hr.

4. A nurse is preparing to administer amoxicillin 30 mg/kg/day divided equally every 12 hr to a toddler who weighs 33 lb. Available is amoxicillin 200 mg/5 mL suspension. How many mL should the nurse administer? (Round the answer to the nearest tenth. Use a leading zero if it applies. Do not use a trailing zero.)

5.6 mL

Correct Rationale: Follow these steps for the preliminary conversions:STEP 1: What is the unit of measurement the nurse should calculate? mgSTEP 2: Set up an equation and solve for X. $\text{mg} \times \text{kg/day} = \text{X}30 \text{ mg} \times 15 \text{ kg/day} = 450 \text{ mg}$ STEP 3: Round if necessary.STEP 4: Reassess to determine whether the amount makes sense. If the prescription reads 30 mg/kg/day to divide equally every 12 hr and the toddler weighs 15 kg, it makes sense to give 450 mg/day, or 225 mg every 12 hr.Ratio and ProportionSTEP 1: What is the unit of measurement the nurse should calculate? mLSTEP 2: What is the dose the nurse should administer? Dose to administer = Desired 225 mgSTEP 3: What is the dose available? Dose available = Have 200 mgSTEP 4: Should the nurse convert the units of measurement? NoSTEP 5: What is the quantity of the dose available? 5 mLSTEP 6: Set up an equation and solve for X. $\text{Have/Quantity} = \text{Desired/X}200 \text{ mg/5 mL} = 225 \text{ mg/X mL} = 5.625 \text{ mL}$ STEP 7: Round if necessary. $5.625 = 5.6 \text{ mL}$ STEP 8: Reassess to determine whether the amount to give makes sense. If there is 200 mg/5 mL and the prescription reads 225 mg, it makes sense to give 5.6 mL. The nurse should administer amoxicillin oral solution 5.6 mL PO every 12 hr.Desired Over HaveSTEP 1: What is the unit of measurement the nurse should calculate? mLSTEP 2: What is the dose the nurse should

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5. A nurse is caring for a 4-year-old child who is resistant to taking medication. Which of the following strategies

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should the nurse use to elicit the child's cooperation?

- A. Offer the child a choice of taking the medication with juice or water.

Rationale: While taking the medicine is not a choice, the child can decide what kind of fluid to take with the medication. This gives the preschool-aged child a sense of control over a stressful situation and increases the child's ability to cope.

- B. Tell the child it is candy.

Rationale: It is unsafe to tell a child that medicine is candy. Telling this to a child can lead to an increased risk of accidental poisoning.

- C. Hide the medication in a large dish of ice cream.

Rationale: When mixing a medication with food, the nurse should mix it in a small amount to increase the chance the child will take it.

- D. Tell the child he will have to have a shot instead.

Rationale: It is unacceptable to threaten any client. This is considered assault.

6. A nurse is caring for a client who has active pulmonary tuberculosis (TB) and a new prescription for IV rifampin. The nurse should instruct the client that they should expect to experience which of the following manifestations while taking this medication?

- A. Constipation

Rationale: Rifampin does not cause constipation. More common gastrointestinal effects are diarrhea and nausea.

- B. Black-colored stools

Rationale: It is most commonly iron supplements that cause stools to turn black, not rifampin.

- C. Staining of teeth

Rationale: Teeth may be stained from taking liquid iron preparations, not from taking rifampin.

- D. Red-colored urine

Rationale: Rifampin is used in combination with other medicines to treat TB. Rifampin will cause the urine, stool, saliva, sputum, sweat, and tears to turn reddish-orange to reddish-brown.

7. A nurse is caring for a client who has difficulty swallowing medications and is prescribed enteric-coated aspirin PO once daily. The client asks if the medication can be crushed to make it easier to swallow. Which of the following responses should the nurse provide?

- A. "Crushing the medication might cause you to have a stomachache or indigestion."

Rationale: The pill is enteric-coated to prevent breakdown in the stomach and decrease the possibility of GI

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distress. Crushing the pill destroys that protection.

B. "Crushing the medication is a good idea, and I can mix it in some ice cream for you."

Rationale: Crushing the pill will destroy the enteric coating, and the client should be advised against this. The client should be told not to break, crush, or chew enteric-coated tablets.

C. "Crushing the medication would release all the medication at once, rather than over time."

Rationale: Crushing the pill will destroy the enteric coating, and the client should be advised against this, but the enteric coating does not prevent the release of medication. Sustained release preparations disburse the medication over time.

D. "Crushing is unsafe, as it destroys the ingredients in the medication."

Rationale: Many medications can safely be crushed to make them easier to swallow. The client should check with his provider for information about which medications can be safely crushed.

8. A nurse is caring for a client who has congestive heart failure and is taking digoxin daily. The client refused breakfast and is complaining of nausea and weakness. Which of the following actions should the nurse take first?

A. Check the client's vital signs.

Rationale: It is possible that the client's nausea is secondary to digoxin toxicity. By obtaining vital signs, the nurse can assess for bradycardia, which is a symptom of digoxin toxicity. The nurse should withhold the medication and call the provider if the client's heart rate is less than 60 bpm.

B. Request a dietitian consult.

Rationale: While the dietitian might be able to assist the client with making appropriate food choices, this is not the first action the nurse should take.

C. Suggest that the client rests before eating the meal.

Rationale: While this intervention might be appropriate, this is not the first action the nurse should take.

D. Request an order for an antiemetic.

Rationale: While this intervention might relieve the client's nausea, this is not the first action the nurse should take.

9. A nurse is caring for four clients for whom she has to administer oral medications in the morning. The nurse should administer which of the following medications before breakfast?

A. Alendronate

Rationale: The client must take alendronate first thing in the morning on an empty stomach and wait at least 30 minutes before eating, drinking, or taking other medications.

B. Digoxin

Rationale:

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Digoxin treats hearts failure and dysrhythmias. While it is important that the client get the morning dose in a timely manner, the nurse does not have to administer it before a meal.

C. Mycostatin mouthwash

Rationale: Any mouthwash or rinse is most effective after a meal.

D. Divalproex

Rationale: Divalproex, an anticonvulsant, helps control seizures and treats the manic phase of bipolar disorder. The client should take the dose on time, but not necessarily before a meal.

10. A nurse is caring for a client who has bipolar disorder and has been taking lithium for 1 year. Before administering the medication, the nurse should check to see that which of the following tests have been completed?

A. Thyroid hormone assay

Rationale: Thyroid testing is important because long-term use of lithium may lead to thyroid dysfunction.

B. Liver function tests

Rationale: LFTs must be monitored before and during valproic acid therapy, not lithium therapy.

C. Erythrocyte sedimentation rate

Rationale: This is not a necessary test related to lithium therapy.

D. Brain natriuretic peptide

Rationale: Brain natriuretic peptide (BNP) is not a necessary test related to lithium therapy. The BNP is used to monitor heart failure.

11. A nurse is caring for a client who has thrombophlebitis and is receiving heparin by continuous IV infusion. The client asks the nurse how long it will take for the heparin to dissolve the clot. Which of the following responses should the nurse give?

A. "It usually takes heparin at least 2 to 3 days to reach a therapeutic blood level."

Rationale: The effects of heparin begin within minutes. This response does not accurately answer the client's question.

B. "A pharmacist is the person to answer that question."

Rationale: Contacting the pharmacist is not the appropriate answer for the nurse to give.

C. "Heparin does not dissolve clots. It stops new clots from forming."

Rationale: This statement accurately answers the client's question.

D. "The oral medication you will take after this IV will dissolve the clot."

Rationale:

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This is not a correct response. Warfarin, a PO medication that is often started after the client has been on heparin, does not dissolve clots.

12. A nurse is providing discharge teaching to a client who has asthma and new prescriptions for cromolyn and albuterol, both by nebulizer. Which of the following statements by the client indicates an understanding of the teaching?

A. "If my breathing begins to feel tight, I will use the cromolyn immediately."

Rationale: Cromolyn, a leukotriene modifier, is used for prophylaxis treatment of asthma, not acute attacks. Albuterol, a short acting bronchodilator, should be used for the treatment of acute bronchospasms.

B. "I will be sure to take the albuterol before taking the cromolyn."

Rationale: The client should always use the bronchodilator (albuterol) prior to using the leukotriene modifier (cromolyn). Using the bronchodilator first allows the airways to be opened, ensuring that the maximum dose of medication will get to the client's lungs.

C. "I will use both medications immediately after exercising."

Rationale: Both albuterol and cromolyn are used to prevent exercise-induced bronchospasm, but administration should be made prior, not after, exercising.

D. "I will administer the medications 10 minutes apart."

Rationale: Inhalations of different medications should be administered 2 to 5 minutes apart.

13. A nurse is completing a medication history for a client who reports using over-the-counter calcium carbonate antacid. Which of the following recommendations should the nurse make about taking this medication?

A. Decrease bulk in the diet to counteract the adverse effect of diarrhea.

Rationale: The major adverse effect of calcium carbonate is constipation. The nurse should recommend the client increase bulk in the diet.

B. Take the medication with dairy products to increase absorption.

Rationale: Taking calcium carbonate with milk predisposes the client to milk alkali syndrome, which is characterized by headache, confusion, nausea, vomiting, alkalosis, and hypercalcemia.

C. Reduce sodium intake.

Rationale: Clients who take aluminum hydroxide, not calcium carbonate, antacids should be advised against excessive sodium intake in the diet.

D. Drink a glass of water after taking the medication.

Rationale: Calcium carbonate is a dietary supplement used when the amount of calcium taken in the diet is not enough. Calcium carbonate may also be used as an antacid to relieve heartburn, acid indigestion, and stomach upset. The client should drink a full glass of water after taking an

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antacid to enhance its effectiveness.

14. A nurse is caring for a client who has deep vein thrombosis and has been on heparin continuous infusion for 5 days. The provider prescribes warfarin PO without discontinuing the heparin. The client asks the nurse why both anticoagulants are necessary. Which of the following statements should the nurse make?

- A. "Warfarin takes several days to work, so the IV heparin will be used until the warfarin reaches a therapeutic level."

Rationale: Heparin and warfarin are both anticoagulants that decrease the clotting ability of the blood and help prevent thrombosis formation in the blood vessels. However, these medications work in different ways to achieve therapeutic coagulation and must be given together until therapeutic levels of anticoagulation can be achieved by warfarin alone, which is usually within 1 to 5 days. When the client's PT and INR are within therapeutic range, the heparin can be discontinued.

- B. "I will call the provider to get a prescription for discontinuing the IV heparin today."

Rationale: Discontinuing the IV heparin is not indicated at this time.

- C. "Both heparin and warfarin work together to dissolve the clots."

Rationale: Neither medication dissolves clots that have already formed.

- D. "The IV heparin increases the effects of the warfarin and decreases the length of your hospital stay."

Rationale: Neither medication increases the effects of the other.

15. A nurse is providing teaching to a client who has asthma and a new prescription for inhaled beclomethasone. Which of the following instructions should the nurse provide?

- A. Check the pulse after medication administration.

Rationale: Beclomethasone, an inhaled glucocorticoid, does not cause cardiac side effects.

- B. Take the medication with meals.

Rationale: Oral, not inhaled, glucocorticoids should be administered with food.

- C. Rinse the mouth after administration.

Rationale: Use of glucocorticoids by metered dose inhaler can allow a fungal overgrowth in the mouth. Rinsing the mouth after administration can lessen the likelihood of this complication.

- D. Limit caffeine intake.

Rationale: Caffeine does not interact with beclomethasone and is not contraindicated.

16. A nurse is caring for a 2-year-old child who has seizures and is receiving phenytoin in suspension form. Which of

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the following actions should the nurse take before administering each dose?

- A. Shake the container vigorously.

Rationale: A suspension form of medication refers to one in which the particles of medication are mixed with, but not dissolved in, a fluid. It is important for the nurse to shake the container that contains the suspension because the child can be under-medicated if the medication is not evenly distributed.

- B. Be sure the child has not eaten within the hour.

Rationale: Phenytoin is a gastric irritant. It should be given with or immediately after a meal to decrease gastric upset.

- C. Perform mouth care.

Rationale: Mouth care is not necessary prior to every dose.

- D. Check the child's blood pressure.

Rationale: When giving the oral form of phenytoin, this action is not necessary.

17. A nurse caring for a client who has hypertension and asks the nurse about a prescription for propranolol. The nurse should inform the client that this medication is contraindicated in clients who have a history of which of the following conditions?

- A. Asthma

Rationale: Propranolol, a beta-blocker, is contraindicated in clients who have asthma because it can cause bronchospasms. Propranolol blocks the sympathetic stimulation, which prevents smooth muscle relaxation.

- B. Glaucoma

Rationale: Beta-blockers are contraindicated in clients who have cardiogenic shock, but are not contraindicated in a client who has glaucoma.

- C. Depression

Rationale: Beta-blockers are contraindicated in clients who have AV heart block, but are not contraindicated in clients who have depression.

- D. Migraines

Rationale: Beta-blockers are used for prophylactic treatment of migraine headaches.

18. A nurse is teaching a client who has a new prescription for colchicine to treat gout. Which of the following instructions should the nurse include?

- A. "Take this medication with food if nausea develops."

Rationale:

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The client should report manifestations of gastric toxicity such as nausea, vomiting, and diarrhea. The medication is discontinued for these effects.

- B. "Monitor for muscle pain."

Rationale: This medication can cause rhabdomyolysis. The client should monitor and report muscle pain.

- C. "Expect to have increased bruising."

Rationale: The client should report manifestations of thrombocytopenia such as bruising and bleeding, which are adverse effects of this medication.

- D. "Increase your intake of grapefruit juice."

Rationale: Grapefruit juice can interfere with the metabolism of this medication and increase the risk for toxicity.

19. A hospice nurse is caring for a client who has terminal cancer and takes PO morphine for pain relief. The client reports that he had to increase the dose of morphine this week to obtain pain relief. Which of the following scenarios should the nurse document as the explanation for this situation?

- A. The client not been taking the medication properly.

Rationale: The nurse should not document the client has not been taking the medication properly without further investigation. The client is able to tell the nurse that he had to increase the dose, which does not indicate taking the medication improperly.

- B. The client is experiencing episodes of confusion.

Rationale: The nurse should not document the client is experiencing confusion. The client is clearly able to tell the nurse that that he had to increase the dose to achieve pain relief. This does not indicate the client is confused.

- C. The client has become addicted to the medication.

Rationale: Addiction is the compulsive need for and use of a habit-forming substance, such as a narcotic. However, this client is not describing addiction, and addiction is not a concern when treating a terminal client who has cancer pain.

- D. The client developed a tolerance to the medication.

Rationale: The nurse should document that the client has developed a tolerance to the medication. Morphine is a narcotic analgesic used for the treatment of severe pain. Tolerance is an adverse effect of narcotic analgesics in which a larger dose is needed to produce the same response.

20. A nurse is caring for a client who has cancer and a new prescription for ondansetron to treat chemotherapy-induced nausea. For which of the following adverse effects should the nurse monitor?

- A. Headache

Rationale:

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Headache is a common adverse effect of ondansetron. Analgesic relief is often required.

B. Dependent edema

Rationale: Dependent edema is not an adverse effect of ondansetron.

C. Polyuria

Rationale: Urinary retention, not polyuria, is a common adverse effect of ondansetron.

D. Photosensitivity

Rationale: Photosensitivity is not an adverse effect of ondansetron.

21. A nurse is preparing to administer verapamil by IV bolus to a client who is having cardiac dysrhythmias. For which of the following adverse effects should the nurse monitor when giving this medication?

A. Hyperthermia

Rationale: Temperature is not affected by verapamil.

B. Hypotension

Rationale: Verapamil, a calcium channel blocker, can be used to control supraventricular tachyarrhythmias. It also decreases blood pressure and acts as a coronary vasodilator and antianginal agent. A major adverse effect of verapamil is hypotension; therefore, blood pressure and pulse must be monitored before and during parenteral administration.

C. Ototoxicity

Rationale: Verapamil is not toxic to the ear.

D. Muscle pain

Rationale: Verapamil does not cause muscle pain.

22. A nurse is caring for a client who has a fungal infection and has a new prescription for amphotericin B. Which of the following laboratory values should the nurse report to the provider before initiating the medication?

A. Sodium 140 mEq/L

Rationale: The sodium level is within the recommended reference range. It is not necessary to notify the provider before initiating the medication for this laboratory finding.

B. Potassium 4.5 mEq/L

Rationale: The potassium level is within the recommended reference range. It is not necessary to notify the provider before initiating the medication for this laboratory finding.

C. BUN 55 mg/dL

Rationale:

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This BUN level is above the expected reference range (10-20 mg/dL). Amphotericin B is nephrotoxic and is contraindicated if BUN is > 40mg/dL. The nurse should report this laboratory value to the provider before initiating the medication.

D. Glucose 120 mg/dL

Rationale: The glucose level is within the recommended reference range. It is not necessary to notify the provider before initiating the medication for this laboratory finding.

23. A nurse is assessing a client who is taking levothyroxine. The nurse should recognize that which of the following findings is a manifestation of levothyroxine overdose?

A. Insomnia

Rationale: Levothyroxine overdose will result in manifestations of hyperthyroidism, which include insomnia, tachycardia, and hyperthermia.

B. Constipation

Rationale: Constipation is a manifestation of hypothyroidism and indicates an inadequate dose of levothyroxine.

C. Drowsiness

Rationale: Drowsiness is a manifestation of hypothyroidism and indicates an inadequate dose of levothyroxine.

D. Hypoactive deep-tendon reflexes

Rationale: Hypoactive deep-tendon reflexes are manifestations of hypothyroidism and indicate an inadequate dose of levothyroxine.

24. A nurse is caring for a client who has streptococcal pneumonia and a prescription for penicillin G by intermittent IV bolus. 10 minutes into the infusion of the third dose, the client reports that the IV site itches and that he feels dizzy and short of breath. Which of the following actions should the nurse take first?

A. Stop the infusion.

Rationale: When using the airway, breathing, circulation approach to client care, the nurse should place the priority on stopping the infusion. The client is exhibiting signs of penicillin anaphylaxis and the first action that should be taken is to withdraw the medication.

B. Call the client's provider.

Rationale: The nurse should call the client's provider; however, another action is the priority.

C. Elevate the head of the bed.

Rationale: The nurse should elevate the head of the bed; however, another action is the priority.

D. Auscultate the client's breath sounds.

Rationale:

Detailed Answer Key ATI Pharmacology Practice

The nurse should auscultate the client's breath sounds; however, another action is the priority.

25. A nurse is caring for a client who has acute respiratory distress syndrome (ARDS), and requires mechanical ventilation. The client receives a prescription for pancuronium. The nurse recognizes that this medication is for which of the following purposes?

A. Decrease chest wall compliance

Rationale: Neuromuscular blocking agents, such as pancuronium, induce paralysis by relaxing skeletal muscles, which improves chest wall compliance.

B. Suppress respiratory effort

Rationale: Neuromuscular blocking agents, such as pancuronium, induce paralysis and suppress the client's respiratory efforts to the point of apnea, allowing the mechanical ventilator to take over the work of breathing for the client. This therapy is especially helpful for a client who has ARDS and poor lung compliance.

C. Induce sedation

Rationale: Neuromuscular blocking agents, such as pancuronium, induce paralysis and have no sedative effect at all. A sedative or analgesic should be prescribed as an adjunct to the pancuronium.

D. Decrease respiratory secretions

Rationale: Neuromuscular blocking agents, such as pancuronium, induce paralysis. An adverse effect of this medication is increased production of respiratory secretions.

26. A nurse in a substance abuse clinic is assessing a client who recently started taking disulfiram. The client reports having discontinued the medication after experiencing severe nausea and vomiting. Which of the following reasons should the nurse suspect to be a likely cause of the client's distress?

A. The client demonstrated an allergic response to the medication.

Rationale: An allergic response to disulfiram presents as dermatitis.

B. The client experienced a common side effect to the medication.

Rationale: Common side effects of disulfiram are drowsiness, headache, and a metallic aftertaste.

C. The client consumed alcohol while taking the medication.

Rationale: Disulfiram is given to clients who have a history of alcohol abuse. It produces a sensitivity to alcohol that results in a highly unpleasant reaction when the client ingests even small amounts of alcohol. When combined with alcohol, disulfiram produces nausea and vomiting.

D. The client took an overdose of the medication.

Rationale: An overdose might result in a severe reaction such as respiratory depression, cardiovascular collapse, arrhythmias, myocardial infarction, acute congestive heart failure, unconsciousness, convulsions, or death.

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27. A nurse is reviewing the medical record of a client who has been on levothyroxine for several months. Which of the following findings indicates a therapeutic response to the medication?

- A. Decrease in level of thyroxine (T4)

Rationale: If the dose of this medication has been adequate, the nurse should see an increase in the T4.

- B. Increase in weight

Rationale: If the dose of this medication has been adequate, the nurse should see a decrease in weight, as hypothyroidism causes a decrease in metabolism with weight gain.

- C. Increase in hr of sleep per night

Rationale: If the dose of this medication has been adequate, the nurse should see a decrease in the hr of sleep per night, as hypothyroidism causes sluggishness with increased hr of sleep.

- D. Decrease in level of thyroid stimulating hormone (TSH).

Rationale: In hypothyroidism, the nonfunctioning thyroid gland is unable to respond to the TSH, and no endogenous thyroid hormones are released. This results in an elevation of the TSH level as the anterior pituitary continues to release the TSH to stimulate the thyroid gland. Administration of exogenous thyroid hormones, such as levothyroxine, turns off this feedback loop, which results in a decreased level of TSH.

28. A nurse on an oncology unit is preparing to administer doxorubicin to a client who has breast cancer. Prior to beginning the infusion, the nurse verifies the client's current cumulative lifetime dose of the medication. For which of the following reasons is this verification necessary?

- A. An excess amount of doxorubicin can lead to myelosuppression.

Rationale: Myelosuppression is a common and life-threatening adverse reaction to doxorubicin that leads to leukopenia and thrombocytopenia. If platelet and WBC counts become too low, it might be necessary to hold or reduce doses of doxorubicin. However, myelosuppression is reversible and is not the reason for a lifetime cumulative dose limit.

- B. Exceeding the lifetime cumulative dose limit of doxorubicin might cause extravasation.

Rationale: Precautions should be taken to avoid extravasation of doxorubicin, as the medication is extremely irritating to tissues. However, extravasation is not the reason for a lifetime cumulative dose limit.

- C. An excess amount of doxorubicin can lead to cardiomyopathy.

Rationale: Doxorubicin is an antineoplastic antibiotic used in the treatment of various cancers. Irreversible cardiomyopathy with congestive heart failure can result from repeated doses of doxorubicin, and prolonged use can also cause severe heart damage, even years after the client has stopped taking it. The maximum cumulative dose a client should receive is 550 mg/m² or 450 mg/m² with a history of radiation to the mediastinum.

- D. Exceeding the lifetime cumulative dose limit of doxorubicin might produce red tinged urine and sweat.

Rationale:

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Red tinged urine and sweat is an adverse effect of doxorubicin that the client should be informed of. However, this is not a life threatening effect and is not the reason for a lifetime cumulative dose limit.

29. A nurse is taking a health history of a client who reports occasionally taking several over-the-counter medications, including an H2 receptor antagonist (H2RA). Which of the following outcomes indicates the H2RA is therapeutic?

- A. Relief of heartburn

Rationale: Histamine2 receptor antagonists are used to treat duodenal ulcers and prevent their return. In over-the-counter strengths, these medications, such as cimetidine and ranitidine, are used to relieve or prevent heartburn, acid indigestion, and sour stomach.

- B. Cessation of diarrhea

Rationale: This is not a therapeutic effect of taking H2RA.

- C. Passage of flatus

Rationale: This is not a therapeutic effect of taking H2RA.

- D. Absence of constipation

Rationale: This is not a therapeutic effect of taking H2RA.

30. A nurse is caring for a client who is taking naproxen following an exacerbation of rheumatoid arthritis. Which of the following statements by the client requires further discussion by the nurse?

- A. "I signed up for a swimming class."

Rationale: Daily exercise can relieve soreness caused by stiff, unused muscles and helps to maintain joint range of motion.

- B. "I've been taking an antacid to help with indigestion."

Rationale: NSAIDs, like naproxen, can cause serious adverse gastrointestinal reactions such as ulceration, bleeding, and perforation. Warning manifestations such as nausea or vomiting, gastrointestinal burning, and blood in the stool reported by the client require further investigation by the nurse. The client might be taking an antacid because he is experiencing one or more of these manifestations.

- C. "I've lost 2 pounds since my appointment 2 weeks ago."

Rationale: This rate of weight loss is acceptable and indicates that the client is aware that decreased weight will decrease joint stress.

- D. "The naproxen is easier to take when I crush it and put it in applesauce."

Rationale: Naproxen can be crushed or swallowed whole.

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31. A nurse is performing discharge teaching for a client who has seizures and a new prescription for phenytoin. Which of the following statements by the client indicates a need for further teaching?

A. "I will notify my doctor before taking any other medications."

Rationale: Many medication interactions can occur with phenytoin; therefore, the client's provider should be notified that the client is taking phenytoin.

B. "I have made an appointment to see my dentist next week."

Rationale: The client understands that phenytoin causes an overgrowth of the gums that makes dental monitoring important.

C. "I know that I cannot switch brands of this medication."

Rationale: The client understands that bioavailability varies with different brands, so no substitutions should be made.

D. "I'll be glad when I can stop taking this medicine."

Rationale: Phenytoin is an anticonvulsant used to treat various types of seizures. Clients on anticonvulsant medications commonly require them for lifetime administration, and phenytoin should not be stopped without the advice of the client's provider.

32. A nurse is teaching a client who has asthma about how to use an albuterol inhaler. Which of the following actions by the client indicates an understanding of the teaching?

A. The client holds his breath for 10 seconds after inhaling the medication.

Rationale: The medication should be retained in the lungs for a minimum of 10 seconds so the maximum amount of the dosage can be delivered properly to the airways. To use the inhaler, the client exhales normally just prior to releasing the medication, inhales deeply as the medication is released, then holds the medication in the lungs for approximately 10 seconds prior to exhaling.

B. The client takes a quick inhalation while releasing the medication from the inhaler.

Rationale: The client should take a slow and deep inhalation for 3 to 5 seconds while administering the medication.

C. The client exhales as the medication is released from the inhaler.

Rationale: Exhaling as the medication is released from the inhaler means that no medication will reach the client's bronchioles. The client should inhale slowly as the medication is released from the inhaler.

D. The client waits 10 min between inhalations.

Rationale: The client should wait approximately 20 to 30 seconds between inhalations of the same medication, and 2 to 5 minutes between inhalations of different medications for maximum benefit.

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33. A nurse is caring for a client who has heart failure and a prescription for digoxin. Which of the following statements by the client indicates an adverse effect of the medication?

A. "I can walk a mile a day."

Rationale: Improving the client's cardiac output, which in turn will improve the client's exercise tolerance, is a therapeutic response to digoxin.

B. "I've had a backache for several days."

Rationale: Backaches are not an adverse effect of digoxin.

C. "I am urinating more frequently."

Rationale: Improving the client's cardiac output, which in turn will increase blood flow to the kidneys and urination, is a therapeutic response to digoxin.

D. "I feel nauseated and have no appetite."

Rationale: Anorexia, nausea, vomiting, and abdominal discomfort are early signs of digoxin toxicity.

34. A nurse is caring for a client who has HIV-1 infection and is prescribed zidovudine as part of antiretroviral therapy. The nurse should monitor the client for which of the following adverse effects of this medication?

A. Cardiac dysrhythmia

Rationale: Zidovudine has no documented adverse effects on the heart.

B. Metabolic alkalosis

Rationale: Lactic acidosis, not metabolic alkalosis, is an adverse effect of zidovudine.

C. Renal failure

Rationale: Zidovudine is not known as a nephrotoxic agent.

D. Aplastic anemia

Rationale: Severe myelosuppression that results in anemia (decreased red blood cells), agranulocytosis (decreased white blood cells), and thrombocytopenia (decreased platelets) is a life-threatening adverse reaction to zidovudine therapy. Consequently, zidovudine must be used cautiously in clients already experiencing myelosuppression, and the client must be monitored with a CBC performed every few weeks for early detection of marrow failure, which may lead to aplastic anemia.

35. A nurse is providing teaching to a client who has oral candidiasis and a new prescription for nystatin suspension. Which of the following statements by the client indicates an understanding of the teaching?

A. "I will store the medication at room temperature."

Rationale:

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Nystatin oral suspension should be stored at room temperature.

- B. "I will take the medicine every morning on an empty stomach."

Rationale: The action of nystatin is local, and it is not absorbed through intact skin or mucous membranes. There is no reason to take the medication on an empty stomach.

- C. "I will spit the medication out after swishing it around my mouth."

Rationale: Nystatin must be swallowed to maximize the medication's local effects on the mucosal lining of the upper gastrointestinal tract.

- D. "I will only need to take this medication for a few days."

Rationale: Long-term therapy may be needed to clear candidiasis. The client should be instructed to complete the entire dose of medication.

36. A nurse is caring for a client who has chronic renal disease and is receiving therapy with epoetin alfa. Which of the following laboratory results should the nurse review for an indication of a therapeutic effect of the medication?

- A. The leukocyte count

Rationale: Epoetin alfa does not affect the leukocyte, or WBC, count.

- B. The platelet count

Rationale: An increase in platelets is not the therapeutic or desired effect of epoetin alfa.

- C. The hematocrit (Hct)

Rationale: Epoetin alfa is an antianemic medication that is indicated in the treatment of clients who have anemia due to reduced production of endogenous erythropoietin, which may occur in clients who have end-stage renal disease or myelosuppression from chemotherapy. The therapeutic effect of epoetin alfa is enhanced red blood cell production, which is reflected in an increased RBC, Hgb, and Hct.

- D. The erythrocyte sedimentation rate (ESR)

Rationale: Epoetin alfa does not affect the ESR, which is a measurement of inflammation.

37. A nurse is caring for a client who is prescribed warfarin therapy for an artificial heart valve. Which of the following laboratory values should the nurse monitor for a therapeutic effect of warfarin?

- A. Hemoglobin (Hgb)

Rationale: Warfarin does not affect the hemoglobin level.

- B. Prothrombin time (PT)

Rationale: This test is used to monitor warfarin therapy. For a client receiving full anticoagulant therapy, the PT should typically be approximately two to three times the normal value, depending on the

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indication for therapeutic anticoagulation.

C. Bleeding time

Rationale: This test is not used to monitor therapeutic anticoagulation. Abnormal bleeding time results are usually associated with platelet dysfunction.

D. Activated partial thromboplastin time (aPTT)

Rationale: This test is used to monitor heparin, not warfarin, therapy.

38. A nurse is reviewing a client's admission record. The nurse notes that there are prescriptions for several medications. Which of the following factors should the nurse recognize is of primary consideration when determining the schedule of administration?

A. Institutional policies regarding routine medication administration times

Rationale: The nurse should consider institutional policies regarding routine medication administration times; however, evidence-based practice indicates that the nurse should base medication administration times on another consideration.

B. Specific characteristics of the medications

Rationale: Evidence-based practice indicates that the specific characteristics of the medications be the primary consideration of scheduling administration times. The characteristics of each medication, including the indication, onset, durations of action, and potential adverse effects and interactions, primarily determine the schedule of administration. Although an institutional policy may require that all once daily medications be administered at 0800, the nurse should be aware that some classifications of medications should only be given at bedtime, or should only be given with food. Likewise, the client's preferences, as well as the availability of each medication from the pharmacy, play important but smaller roles in determining the schedule of administration.

C. Schedule of administration that the client follows at home

Rationale: The nurse should consider the schedule of administration that the client follows at home; however, evidence-based practice indicates that the nurse should base medication administration times on another consideration.

D. Time at which the medication can be available from the pharmacy

Rationale: The nurse should consider the time at which the medication can be available from the pharmacy; however, evidence-based practice indicates that the nurse should base medication administration times on another consideration.

39. A nurse in a provider's clinic is assessing a client who has cancer and a prescription for methotrexate PO. Which of the following actions should the nurse take when the client reports bleeding gums?

A. Explain to the client that this is an expected adverse effect.

Rationale: This is not an expected adverse effect of this medication.

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- B. Check the value of the client's current platelet count.

Rationale: The nurse should recognize that the bleeding is likely due to the adverse effect of the chemotherapy and needs to be evaluated further. Bleeding gums is a sign of thrombocytopenia (decreased platelet count) secondary to bone marrow suppression, which can be life-threatening in a client who is receiving chemotherapy.

- C. Instruct the client to use an electric toothbrush.

Rationale: The nurse should instruct the client to use a soft toothbrush if stomatitis is present.

- D. Have the client make an appointment to see the dentist.

Rationale: The nurse should instruct the client to practice good oral care. Having the client see a dentist is not the action the nurse should take to address the current problem.

40. A nurse in a public clinic is planning a health fair for older adult clients in the community. In teaching medication safety, which of the following foods should the nurse advise the clients to avoid when taking their prescriptions?

- A. Carbonated beverage

Rationale: While there are some medications that can interact with carbonated beverages, many recommend the client take the dose with a carbonated beverage. Therefore, the nurse should not include an across-the-board warning about carbonated beverages. Rather, the nurse should instruct the clients to check the recommendation for each medication that they take.

- B. Milk

Rationale: While there are some medications that can interact with milk, many recommend the client take the dose with milk. Therefore, the nurse should not include an across-the-board warning about milk. Rather, the nurse should instruct the clients to check the recommendation for each medication that they take.

- C. Orange juice

Rationale: While there are some medications that can interact with orange juice, many recommend the client take the dose with juice. Therefore, the nurse should not include an across-the-board warning about orange juice. Rather, the nurse should instruct the clients to check the recommendation for each medication that they take.

- D. Grapefruit juice

Rationale: There is a high rate of food-drug interactions between grapefruit juice and many medications frequently taken by older adults, especially lipid-lowering agents. It is thought that one or more of the chemicals (most likely flavonoids) in grapefruit juice alter the activity of specific enzymes (such as CYP3A4 and CYP1A2) in the intestinal tract. These enzymes decrease the rate at which medications enter the systemic circulation. This could allow a larger amount of these drugs to reach the bloodstream, resulting in increased drug levels and possibly toxicity.

41. A nurse is caring for a client who has developed gout. Which of the following medications should the nurse prepare to administer?

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A. Zolpidem

Rationale: Zolpidem is a sedative/hypnotic that is used for insomnia.

B. Alprazolam

Rationale: Alprazolam is a benzodiazepine that is prescribed to treat anxiety.

C. Spironolactone

Rationale: Spironolactone is an aldosterone antagonist that works as a potassium-sparing diuretic. It is prescribed to treat edema and hypertension.

D. Allopurinol

Rationale: Allopurinol is a xanthine oxidase inhibitor that reduces uric acid synthesis. The medication is prescribed to treat gout.

42. A nurse is caring for a client who has diabetes insipidus and is receiving vasopressin. The nurse should identify which of the following findings as an indication that the medication is effective?

A. A decrease in blood sugar

Rationale: Blood sugar level is not affected in diabetes insipidus.

B. A decrease in blood pressure

Rationale: Diabetes insipidus causes the loss of large amounts of urine, which can lead to hypotension. An increase (or at least no further decrease) in blood pressure would be the desired response to vasopressin.

C. A decrease in urine output

Rationale: The major manifestations of diabetes insipidus are excessive urination and extreme thirst. Vasopressin is used to control frequent urination, increased thirst, and loss of water associated with diabetes insipidus. A decreased urine output is the desired response.

D. A decrease in specific gravity

Rationale: An increase in specific gravity (indicating a more concentrated urine) would be the desired response of vasopressin.

43. A nurse is teaching a client who takes warfarin daily. Which of the following statements by the client indicates a need for further teaching?

A. "I have started taking ginger root to treat my joint stiffness."

Rationale: Ginger root can interfere with the blood clotting effect of warfarin and place the client at risk for bleeding. This statement indicates the client needs further teaching.

B. "I take this medication at the same time each day."

Rationale:

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The client should take warfarin at the same time each day to maintain a stable blood level.

C. "I eat a green salad every night with dinner."

Rationale: Green leafy vegetables are a good source of vitamin K, which can interfere with the clotting effects of warfarin. Clients who are taking warfarin do not need to restrict dietary vitamin K intake but rather should maintain a consistent intake of vitamin K in order to control the therapeutic effect of the medication.

D. "I had my INR checked three weeks ago."

Rationale: Clients who have been taking warfarin for more than 3 months should have their INR level checked every 2 to 4 weeks.

44. A nurse is assessing a client prior to administering a seasonal influenza vaccine. The client says he read about an influenza vaccine that is given as a nasal spray and wants to receive it. The nurse should recognize that which of the following findings is a contraindication for the client receiving the live attenuated influenza vaccine (LAIV)?

A. The client's age is 62.

Rationale: Clients must be between the ages of 2 and 49 to receive the LAIV; therefore, it is contraindicated for this client. Pregnancy and immunocompromised status are also contraindications.

B. The client smokes one pack of cigarettes a day

Rationale: Cigarette smoking is not a contraindication for receiving the LAIV.

C. The client has a history of myocardial infarction.

Rationale: A history of myocardial infarction is not a contraindication for receiving the LAIV.

D. The client has recently traveled to Europe.

Rationale: Recent travel to Europe is not a contraindication for receiving the LAIV.

45. A nurse is assessing a client prior to the administration of morphine. The nurse should recognize that which of the following assessments is the priority?

A. Pupil reaction

Rationale: The nurse should assess the client's pupils because morphine can cause miosis; however, another assessment is the priority.

B. Urine output

Rationale: The nurse should assess the client's urine output because morphine can cause urinary retention; however, another assessment is the priority.

C. Bowel sounds

Rationale:

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The nurse should assess the client's bowel sounds because morphine can cause constipation; however, another assessment is the priority.

- D. Respiratory rate

Rationale: When using the airway, breathing, circulation approach to client care, the nurse should determine the priority assessment is respiratory rate. Morphine can cause respiratory depression. The nurse should withhold the medication and notify the prescriber if the client has a respiratory rate less than 12/min.

46. A charge nurse is supervising a newly licensed nurse care for a client who is receiving a transfusion of packed RBC. The nurse suspects a possible hemolytic reaction. After stopping the blood transfusion, which of the following actions by the new nurse requires intervention by the charge nurse?

- A. The nurse initiates an infusion of 0.9% sodium chloride.

Rationale: When suspecting a hemolytic reaction, the nurse should maintain IV access and blood volume with an infusion of 0.9% sodium chloride.

- B. The nurse collects a urine specimen.

Rationale: When suspecting a hemolytic reaction, the nurse should obtain a urine specimen to assess for the presence of hemoglobin in the urine.

- C. The nurse sends a blood specimen to the laboratory.

Rationale: When suspecting a hemolytic reaction, the nurse should obtain a blood specimen from the client for laboratory analysis.

- D. The nurse starts the transfusion of another unit of blood product.

Rationale: When suspecting a hemolytic reaction, the nurse should immediately stop the transfusion of all blood products. The transfusion of additional products can increase the client's risk for further complication.

47. A nurse is assessing a client who is receiving a unit of packed red blood cells. Which of the following findings is a manifestation of acute hemolytic reaction?

- A. Client report of low back pain

Rationale: Manifestations of an acute hemolytic reaction include apprehension, tachypnea, hypotension, chest pain, and lower back pain.

- B. Client report of tinnitus

Rationale: Tinnitus is a manifestation of ototoxicity and is an adverse effect of aminoglycoside antibiotics.

- C. A productive cough

Rationale: A cough is a manifestation of circulatory overload.

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D. Distended neck veins

Rationale: Distended neck veins are a manifestation of circulatory overload.

48. A nurse is assessing an older adult client who is receiving digoxin. The nurse should recognize that which of the following findings is a manifestation of digoxin toxicity?

A. Anorexia

Rationale: Anorexia, vomiting, confusion, headache, and vision changes are manifestations of digoxin toxicity.

B. Ataxia

Rationale: Ataxia (lack of muscle coordination) is a manifestation of benzodiazepine toxicity.

C. Photosensitivity

Rationale: Digoxin toxicity causes halos around lights. Photosensitivity is a manifestation of NSAID toxicity.

D. Jaundice

Rationale: Jaundice is a manifestation of sulfonylurea toxicity.

49. A nurse is assessing a client who is receiving dopamine IV to treat left ventricular failure. Which of the following findings should indicate to the nurse that the medication is having a therapeutic effect?

A. Systolic blood pressure is increased

Rationale: When dopamine has a therapeutic effect, it causes vasoconstriction peripherally and increases systolic blood pressure.

B. Cardiac output is reduced

Rationale: A therapeutic effect of low-dose dopamine is increased cardiac output.

C. Apical heart rate is increased

Rationale: Tachycardia is an adverse effect, not a therapeutic effect, of dopamine.

D. Urine output is reduced

Rationale: A therapeutic effect of low-dose dopamine is increased urine output. Decreased urine output at high doses is an adverse effect of dopamine.

50. A nurse is assessing a client who is on long term omeprazole therapy. Which of the following findings should indicate to the nurse the medication is effective?

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A. Increased appetite

Rationale: Omeprazole does not increase appetite. Nausea is an adverse effect of this medication.

B. Regular bowel movements

Rationale: Omeprazole does not produce regular bowel movements. Diarrhea is an adverse effect of this medication.

C. Absence of headache

Rationale: Omeprazole does not treat headaches. Headaches are an adverse effect of this medication.

D. Reduced dyspepsia

Rationale: Omeprazole, a proton pump inhibitor, reduces gastric acid secretion and treats duodenal and gastric ulcers, prolonged dyspepsia, gastrointestinal reflux disease, and erosive esophagitis.
