Chapter 40, Antidiabetic Drugs

1. A client with hyperinsulinism has been prescribed diazoxide. After administration, which adverse reaction should the nurse prioritize?
   A) Myalgia
   B) Tachycardia
   C) Flatulence
   D) Epigastric discomfort

   Answer: B

   Rationale: 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.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 2
   Cognitive Level: Apply
   Client Needs: Physiological Integrity: Pharmacological Therapies
   Integrated Process: Clinical Problem-solving Process (Nursing Process)
   Reference: p. 546, Summary Drug Table

2. A nurse is teaching a client about acarbose. The nurse determines the teaching is successful when the client correctly states which instruction to follow when administering the drug at home?
   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.

   Answer: C

   Rationale: Acarbose should be administered with the first bite of the meal. Glyburide needs to be administered 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.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 5
   Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 533, Alpha-Glucosidase Inhibitors

3. The nurse has administered glipizide and warfarin to a client. Which finding on assessment should the nurse prioritize?
   A) Increased risk of lactic acidosis
   B) Risk of acute renal failure
   C) Increased risk for bleeding
   D) Increased hypoglycemic effect

   Answer: D

   Rationale: The nurse should observe for increased hypoglycemic effect in the client as the effect of the interaction of sulfonylureas (glipizide) with the anticoagulants (warfarin), 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.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 2
   Cognitive Level: Apply
   Client Needs: Physiological Integrity: Reduction of Risk Potential
   Integrated Process: Clinical Problem-solving Process (Nursing Process)
   Reference: p. 534, Sulfonylureas

4. A nurse is caring for a client with diabetes mellitus who is receiving an oral antidiabetic drug. Which ongoing assessments should the nurse prioritize 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.

   Answer: B

   Rationale: 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.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 3
   Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 15, Ongoing Assessment

5. A nurse is preparing to administer insulin glargine to a client. What precaution should the nurse take when administering this drug?
   A) Administer glargine via IV route.
   B) Avoid mixing glargine with other insulins.
   C) Shake the vial vigorously before withdrawing insulin.
   D) Be sure the insulin has been refrigerated.

   Answer: B

   Rationale: 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.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 5
   Cognitive Level: Apply
   Client Needs: Physiological Integrity: Pharmacological Therapies
   Integrated Process: Clinical Problem-solving Process (Nursing Process)
   Reference: p. 538, Mixing Insulins

6. A nurse is preparing to administer insulin to the client. Which 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.

   Answer: A

   Rationale: 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.
   Question Format: Multiple Choice
   Chapter: 40

Learning Objective: 5
Cognitive Level: Apply
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 539, Rotating Injection Sites

7. A nurse has determined a client has developed a hypoglycemic reaction. Which interventions should the nurse perform if the client can adequately demonstrate swallowing and gag reflexes?
   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.

   Answer: D

   Rationale: 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.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 5
   Cognitive Level: Apply
   Client Needs: Physiological Integrity: Reduction of Risk Potential
   Integrated Process: Clinical Problem-solving Process (Nursing Process)
   Reference: p. 541, Acute Confusion

8. A nursing instructor is teaching a group of nursing students about type 2 diabetes. The instructor determines the session is successful when the students correctly choose which as a risk factor for individuals developing type 2 diabetes?
   A) Young age
   B) Regular exercise
   C) Obesity
   D) Polyuria

   Answer: C

   Rationale: The nurse informs the client that obesity is a risk factor associated with type 2 diabetes. Older, not younger age and minimal or no physical activity, not regular exercise are risk factors for type 2 diabetes. Polyuria is a symptom of diabetes and not a risk factor leading to type 2 diabetes.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 1
   Cognitive Level: Understand
   Client Needs: Physiological Integrity: Physiological Adaptation

Integrated Process: Teaching/Learning
Reference: p. 525, Introduction

9. A nurse is preparing to administer exenatide to a client with type 2 diabetes. The nurse will question this order if which condition is noted in the client's medical record?
   A) Diabetic ketoacidosis
   B) Kidney disease
   C) Severe heart failure
   D) Liver disease

   Answer: A

   Rationale: GLP-1 agonists are contraindicated in clients with diabetic ketoacidosis and type 1 diabetes. Thiazolidinediones are contraindicated in clients with severe heart failure and used with caution in clients with kidney disease, severe heart failure, and liver disease.
   Question Format: Multiple Choice
   Chapter: 40
   Learning Objective: 2
   Cognitive Level: Apply
   Client Needs: Physiological Integrity: Pharmacological Therapies
   Integrated Process: Clinical Problem-solving Process (Nursing Process)
   Reference: p. 531, Glucagon-like Peptide-1 Agonists

10. A client is administered insulin lispro at 8 AM. The nurse would be most alert for signs and symptoms of hypoglycemia at about which time?
    A) 8:15 AM
    B) 9 AM
    C) 10 AM
    D) 11 AM

    Answer: B

    Rationale: 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 AM. Onset of action occurs in 5 to 10 minutes, so the drug would begin being effective at this time.
    Question Format: Multiple Choice
    Chapter: 40
    Learning Objective: 3
    Cognitive Level: Apply
    Client Needs: Physiological Integrity: Reduction of Risk Potential
    Integrated Process: Clinical Problem-solving Process (Nursing Process)
    Reference: p. 544, Summary Drug Table

11. The nurse is assessing a client who was administered metformin and notes hyperventilation, nausea, and somnolence. The nurse determines which nursing diagnosis should be prioritized for this client?

A) Altered Breathing Pattern
B) Risk for Fluid Volume Deficit
C) Acute Confusion
D) Anxiety

Answer: A

Rationale: When taking metformin, the client is at risk for lactic acidosis manifested by unexplained hyperventilation, myalgia, malaise, GI symptoms, or unusual somnolence. Thus, a nursing diagnosis of Altered 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.
Question Format: Multiple Choice
Chapter: 40
Learning Objective: 4
Cognitive Level: Analyze
Client Needs: Physiological Integrity: Reduction of Risk Potential
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 524, Altered Breathing Pattern

12. A nurse is conducting a teaching session for a client newly diagnosed with type 2 diabetes on the importance of monitoring the blood glucose. The nurse determines additional teaching is necessary after the client makes which statement?
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."

Answer: A

Rationale: 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.
Question Format: Multiple Choice
Chapter: 40
Learning Objective: 5
Cognitive Level: Analyze
Client Needs: Physiological Integrity: Reduction of Risk Potential
Integrated Process: Teaching/Learning
Reference: p. 536, Obtaining a Blood Glucose Reading Using a Glucometer

13. A nurse is preparing a teaching session for a client who 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

Answer: B

Rationale: Miglitol is given three times a day with the first bite of the meal because food increases absorption. Longer-acting insulins may be given before breakfast or at bedtime depending on the health care provider's instructions. Lispro may be given 15 minutes before or immediately after a meal.
Question Format: Multiple Choice
Chapter: 40
Learning Objective: 5
Cognitive Level: Apply
Client Needs: Pharmacological Therapies
Integrated Process: Teaching/Learning
Reference: p. 533, Alpha-Glucosidase Inhibitors

14. The nurse is preparing a presentation for a local community group about diabetes. Which facts should the nurse include when explaining 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

Answer: B, C

Rationale: 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.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 1
Cognitive Level: Understand
Client Needs: Physiological Integrity: Physiological Adaptation
Integrated Process: Teaching/Learning
Reference: p. 525, Introduction

15. The nurse is assessing a client for risk factors associated with type 2 diabetes. Which findings would the nurse prioritize? Select all that apply.
A) Younger age
B) Impaired glucose tolerance
C) Caucasian race
D) Obesity

E) History of gestational diabetes

Answer: B, D, E

Rationale: 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).
Question Format: Multiple Select
Chapter: 40
Learning Objective: 1
Cognitive Level: Apply
Client Needs: Physiological Integrity: Physiological Adaptation
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 525, Introduction

16. A nurse is preparing to administer a long-acting insulin to a client. Which insulin might the nurse administer? Select all that apply.
A) Insulin aspart
B) Insulin lispro
C) Insulin glargine
D) Insulin detemir
E) Insulin glulisine

Answer: C, D

Rationale: Insulin glargine and insulin detemir are long-acting insulins with a duration of 24 hours. Insulin aspart, lispro, and glulisine are rapid-acting insulins.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 2
Cognitive Level: Understand
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 544, Summary Drug Table

17. After teaching an in-service presentation to a group of nurses about diabetes and insulin, the presenter determines that the session was successful when the group correctly chooses which insulins as rapid-acting? Select all that apply.
A) Insulin aspart
B) Isophane insulin suspension
C) Insulin glargine
D) Insulin detemir
E) Insulin glulisine

Answer: A, E

Rationale: Insulin aspart and insulin glulisine are rapid-acting insulins. Isophane insulin suspension is an intermediate-acting insulin. Insulin glargine and detemir are long-acting insulins.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 2
Cognitive Level: Analyze
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Teaching/Learning
Reference: p. 544, Summary Drug Table

18. A nurse is assessing a client receiving insulin glargine 20 units at bedtime. The nurse determines the insulin requirement may increase when preparing to administer which new drug? Select all that apply.
    A) Methylprednisolone
    B) Metoprolol
    C) Fenofibrate
    D) Estradiol
    E) Niacin

    Answer: A, D, E

    Rationale: Corticosteroids (methylprednisolone), estrogens (estradiol), and niacin are among the drugs that 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.
    Question Format: Multiple Select
    Chapter: 40
    Learning Objective: 2
    Cognitive Level: Apply
    Client Needs: Physiological Integrity: Pharmacological Therapies
    Integrated Process: Clinical Problem-solving Process (Nursing Process)
    Reference: p. 530, Box 40.1 Drugs That Alter Insulin Effectiveness

19. A nurse is preparing to administer a new drug to a client who also receives insulin detemir. Which medication might the nurse be administering which will result in a decreased insulin dosage? Select all that apply.
    A) Sulfamethoxazole/trimethoprim
    B) Metoprolol
    C) Fenofibrate
    D) Diltiazem
    E) Albuterol

    Answer: A, B, C

Rationale: 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.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 2
Cognitive Level: Apply
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 530, Box 40.1 Drugs That Alter Insulin Effectiveness

20. After administering insulin detemir to a client with diabetes, the nurse suspects that the client is developing hypoglycemia based on which assessment findings? Select all that apply.
A) Increased thirst
B) Increased urination
C) Headache
D) Confusion
E) Diaphoresis

Answer: C, D, E
Rationale: 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.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 3
Cognitive Level: Analyze
Client Needs: Physiological Integrity: Physiological Adaptation
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 529, Table 40.1 Hypoglycemia versus hyperglycemia

21. The nurse is conducting ongoing assessment of a client receiving insulin detemir. The nurse would question the effectiveness of the insulin based on which assessment findings? Select all that apply.
A) Increased thirst
B) Increased urination
C) Increased appetite
D) Confusion
E) Abdominal pain

Answer: A, B, E

Rationale: 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.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 3
Cognitive Level: Analyze
Client Needs: Physiological Integrity: Physiological Adaptation
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 529, Table 40.1 Hypoglycemia versus hyperglycemia

22. The nurse is preparing to administer insulin glargine to a client. Which actions will the nurse perform when preparing the insulin? Select all that apply.
A) Check the expiration date on the vial.
B) Shake the vial vigorously.
C) Check the health care provider'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.

Answer: A, C, D
Rationale: Prior to administering insulin glargine to a client, the nurse must complete the following preadministration steps: carefully check the health care provider'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 with any other insulin or solution because the insulin will not be effective.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 3
Cognitive Level: Apply
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 538, Preparing Insulin for Administration

23. The nurse monitoring a client receiving insulin glulisine notices the client has become confused, diaphoretic, and nauseated; and has a blood glucose of 60 mg/dL. Which emergent treatment would the nurse most likely give? Select all that apply.
A) Orange or other fruit juice
B) Glucose tablets
C) Insulin glargine
D) Hard candy
E) Insulin detemir

Answer: A, B, D

Rationale: 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.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 5
Cognitive Level: Apply
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 541, Acute Confusion

24. A nurse is teaching a client about the insulin product which has been prescribed. The nurse determines the session is successful when the client correctly chooses which insulin they will be using that acts by lowering the blood glucose by increasing the activity of the beta cells in the pancreas? Select all that apply.
A) Glyburide
B) Metformin
C) Pioglitazone
D) Glipizide
E) Acarbose

Answer: A, D

Rationale: Sulfonylureas, like glyburide and glipizide, help lower blood glucose by increasing the production of insulin by beta cells in the pancreas. The other drugs are oral antidiabetic drugs. Metformin is a biguanide. Pioglitazone is a thiazolidinediones. Acarbose is an alpha-Glucosidase Inhibitor.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 2
Cognitive Level: Apply
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 534, Sulfonylureas

25. After teaching a group of nursing students about antidiabetic drugs, the instructor determines that the teaching was successful when the students correctly choose which drugs as producing the glucose-lowering effects by delaying the digestion and absorption of carbohydrates in the intestine? Select all that apply.
A) Glimepiride
B) Metformin
C) Pioglitazone
D) Miglitol
E) Acarbose

Answer: D, E

Rationale: The alpha-glucosidase inhibitors, acarbose and miglitol, 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.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 2
Cognitive Level: Understand
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Teaching/Learning
Reference: p. 540, Alpha-Glucosidase Inhibitors

26. The nurse is preparing to teach a client with diabetes about the new antidiabetic medication the health care provider has prescribed. Which drug will the client be receiving if the nurse explains it produces its glucose-lowering effect by decreasing insulin resistance and increasing insulin sensitivity? Select all that apply.
    A) Rosiglitazone
    B) Metformin
    C) Pioglitazone
    D) Miglitol
    E) Acarbose

    Answer: A, C

    Rationale: The thiazolidinediones, rosiglitazone and pioglitazone, produce their glucose-lowering effect by decreasing insulin resistance and increasing insulin sensitivity. The alpha-glucosidase inhibitors, acarbose and miglitol, 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.
    Question Format: Multiple Select
    Chapter: 40
    Learning Objective: 2
    Cognitive Level: Apply
    Client Needs: Physiological Integrity: Pharmacological Therapies
    Integrated Process: Clinical Problem-solving Process (Nursing Process)
    Reference: p. 533, Thiazolidinediones

27. A nurse has administered glimepiride to a client with diabetes. Which findings on the ongoing assessment should the nurse prioritize? Select all that apply.
    A) Lactic acidosis
    B) Edema
    C) Hypoglycemia
    D) Heartburn
    E) Nausea

Answer: C, D, E

Rationale: Adverse reactions associated with sulfonylureas, like glimepiride, include hypoglycemia, anorexia, nausea, vomiting, epigastric discomfort, weight gain, heartburn, and various vague neurologic symptoms, such as numbness and weakness of the extremities. Lactic acidosis is a risk when clients are using metformin and have impaired kidneys. Thiazolidinediones should be used cautiously in clients with edema.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 3
Cognitive Level: Apply
Client Needs: Physiological Integrity: Pharmacological Therapies
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 545, Summary Drug Table

28. A client has been receiving metformin for several months arrives for a routine follow-up appointment reporting vague symptoms. Which assessment findings should the nurse prioritize? Select all that apply.
    A) Malaise
    B) Hypertension
    C) Tachypnea
    D) Abdominal pain
    E) Muscular pain

Answer: A, C, D, E

Rationale: The nurse should suspect lactic acidosis with findings of malaise, tachypnea, abdominal and muscular pain. Symptoms can also include dyspnea. The client is in danger of cardiovascular collapse if not recognized and treated quickly. Hypertension is not an indication of lactic acidosis.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 3
Cognitive Level: Analyze
Client Needs: Physiological Integrity: Reduction of Risk Potential
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 530, Biguanides

29. A nurse has administered glyburide to a client. The nurse predicts the client may experience a hypoglycemic event if which additional drug is also prescribed for this client? Select all that apply.
    A) Ranitidine
    B) Warfarin
    C) Digoxin
    D) Lithium
    E) Amitriptyline

Answer: A, B, E

Rationale: H_2 antagonists (ranitidine), anticoagulants (warfarin), and tricyclic antidepressants (amitriptyline), among others, can result in increased hypoglycemic effects of sulfonylureas (glyburide). Lithium will affect insulin's effect but not glyburide. Digoxin is not noted to adversely affect glyburide
Question Format: Multiple Select
Chapter: 40
Learning Objective: 2
Cognitive Level: Apply
Client Needs: Physiological Integrity: Reduction of Risk Potential
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 534, Sulfonylureas

30. A client is receiving glyburide. The nurse assesses the client for a decrease in the drug's effect if which additional drugs are initiated? Select all that apply.
A) Atenolol
B) Amlodipine
C) Phenytoin
D) Lithium
E) Levothyroxine

Answer: A, B, C, E

Rationale: Beta blockers (atenolol), calcium channel blockers (amlodipine), hydantoins (phenytoin), and thyroid agents (levothyroxine), among others, can result in decreased hypoglycemic effects of sulfonylureas (glyburide). Lithium can have an effect on insulin if given concomitantly.
Question Format: Multiple Select
Chapter: 40
Learning Objective: 2
Cognitive Level: Apply
Client Needs: Physiological Integrity: Reduction of Risk Potential
Integrated Process: Clinical Problem-solving Process (Nursing Process)
Reference: p. 534, Sulfonylureas