

## Chapter 42, Thyroid and Antithyroid Drugs

1. A client with thyrotoxicosis is prescribed levothyroxine. The nurse would **prioritize** which finding on assessment?
  - A) Tachycardia
  - B) Agranulocytosis
  - C) Loss of hair
  - D) Skin rash

Answer: A

Rationale: The nurse should monitor for tachycardia, palpitations, headache, nervousness, insomnia, diarrhea, vomiting, weight loss, fatigue, sweating, and flushing as adverse reactions after administering levothyroxine to a client with thyrotoxicosis. Agranulocytosis, loss of hair, and skin rash are not the adverse reactions to levothyroxine; they are adverse reactions found in a client receiving methimazole.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 574, Summary Drug Table

2. A nurse is preparing to administer levothyroxine to a client who is also prescribed citalopram. The nurse predicts which assessment finding may occur in this client?
  - A) Prolonged bleeding
  - B) Decreased effectiveness of the thyroid drug
  - C) Increased risk of paresthesias
  - D) Increased risk of hypoglycemia

Answer: B

Rationale: The nurse should monitor for a decreased effectiveness of the thyroid drug as the result of the interaction with selective serotonin reuptake inhibitors (SSRIs) such as citalopram. When the client is receiving oral anticoagulants with thyroid hormones, the client is at risk of prolonged bleeding. Increased risk of hypoglycemia occurs when oral hypoglycemics and insulin are administered with thyroid hormones to the client. The nurse should observe for paresthesias as one of the adverse reactions in a client receiving antithyroid drugs.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 569, Contraindications and Precautions

3. A nurse is preparing to administer liothyronine to a client with chronic thyroiditis. The nurse determines the drug needs to be administered cautiously after noting which disorder in the client's medical history?
- A) Upper respiratory tract infection
  - B) Diabetes
  - C) Elevated body temperature
  - D) Cardiac disease

Answer: D

Rationale: The nurse should be cautious about existing conditions such as cardiac disease and also cautious about lactating clients before administering liothyronine to clients with chronic thyroiditis. The nurse need not be cautious about administering liothyronine to clients with an upper respiratory tract infection, diabetes, or elevated body temperature. The nurse should be cautious about clients contracting an upper respiratory tract infection on administering antithyroid drugs. A client with diabetes may experience an increase in diabetes while undergoing thyroid hormone replacement therapy. The nurse should observe for elevated body temperature while managing the needs of a client administered thyroid hormones.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 569, Contraindications and Precautions

4. A nurse is teaching a client about the thyroid hormone replacement therapy which has been prescribed. The nurse determines the teaching session is successful when the client indicates which time to take the drug?
- A) Before bedtime
  - B) Just before dinner
  - C) After lunch
  - D) Before breakfast

Answer: D

Rationale: The nurse should inform the client undergoing thyroid hormone replacement therapy to take the drug in the morning before breakfast. These drugs should be taken on an empty stomach to ensure proper absorption.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning  
Reference: p. 572, Thyroid Supplement

5. A health care provider has prescribed methimazole for an elderly client with hyperthyroidism who lives alone. Which potential nursing diagnosis should the nurse **prioritize** for this client?
- A) Disturbed thought processes related to adverse drug reactions
  - B) Risk for ineffective health management
  - C) Risk for infection related to adverse drug reactions
  - D) Risk for impaired skin integrity related to adverse reactions

Answer: B

Rationale: The nurse should prioritize risk for ineffective health management for this client. The client with hyperthyroidism may be concerned with the results of medical treatment and with the problem of taking the drug at regular intervals around the clock. Risk for infection related to adverse drug reactions and risk for impaired skin integrity related to adverse reactions could also be appropriate for this client receiving antithyroid drugs; however, not the priority. Disturbed thought processes may apply for a client receiving ACTH.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 10, Risk for Ineffective Health Management

6. A client with hyperthyroidism, who is prescribed methimazole, reports a skin rash to the nurse. Which instruction should the nurse **prioritize** when assessing the client?
- A) Offer suggestions to alter the drug schedule.
  - B) Instruct the client to avoid applying lubricants.
  - C) Instruct the client to use soap sparingly.
  - D) Check if discoloration of the hair occurs.

Answer: C

Rationale: The nurse should instruct the client to use soap sparingly, if at all, and apply soothing creams or lubricants until the rash subsides. The dosing may need to be changed and the rash should be reported immediately to the health care provider. The nurse need not offer suggestions to alter the drug schedule, instruct the client to avoid applying lubricants, or check if discoloration of hair occurs.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Teaching/Learning

Reference: p. 10, Risk for Impaired Skin Integrity

7. A client diagnosed with hyperthyroidism has been prescribed propylthiouracil. After administering the drug, which assessment finding should the nurse **prioritize**?
- A) Skin rash
  - B) Tachycardia
  - C) Nervousness
  - D) Constipation

Answer: A

Rationale: The adverse reactions to propylthiouracil include paresthesias, numbness, headache, skin rash, nausea, vomiting, and agranulocytosis. Tachycardia, nervousness, and vomiting are the adverse reactions associated with the thyroid hormone levothyroxine sodium ( $T_4$ ).

Question format: Multiple Choice

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 10, Risk for Impaired Skin Integrity

8. A client presents to the emergency department with an apparent reaction to recently started thyroid therapy. Which assessment finding would lead the nurse to question that this client is experiencing a thyroid storm?
- A) Memory impairment
  - B) Cold intolerance
  - C) Constipation
  - D) Altered mental status

Answer: D

Rationale: Some clients will experience an increase in hyperthyroidism rather than decrease during therapy. When these symptoms occur rapidly, it is termed a thyrotoxic crisis or thyroid storm. It is characterized by high fever, extreme tachycardia, and altered mental status. Memory impairment, cold intolerance, and constipation are the manifestations of myxedema, which is a severe form of hypothyroidism.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Physiological Adaptation

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

Reference: p. 571, Preadministration Assessment

9. A nurse has administered levothyroxine to a client for hypothyroidism. The nurse determines the client is responding appropriately to the therapy based on which assessment finding?
- A) Increased appetite
  - B) Swollen neck
  - C) Excessive sweating
  - D) Flushing

Answer: A

Rationale: The nurse should assess for signs of therapeutic responses, which include increased appetite, weight loss, mild diuresis, an increased pulse rate, and decreased puffiness of the face, hands, and feet. Swollen neck, sore throat, and cough may occur after 2–3 days of administering radioactive iodine. Sweating and flushing are the adverse reactions to thyroid hormones.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 571, Ongoing Assessment

10. A health care provider has prescribed a medication for a client who is diagnosed with euthyroid goiter. The nurse would expect to administer which drug?
- A) Levothyroxine
  - B) Methimazole
  - C) Propylthiouracil
  - D) Sodium iodide

Answer: A

Rationale: Euthyroid goiter is treated with thyroid hormones, such as levothyroxine. Methimazole, propylthiouracil, and sodium iodide are used to treat hyperthyroidism.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 569, Thyroid Hormones

11. A nurse is providing care for a client diagnosed with thyroid cancer. Which drug would the nurse anticipate being prescribed for the client?
- A) Iodine 131
  - B) Methimazole
  - C) Propylthiouracil
  - D) Liothyronine

Answer: A

Rationale: Radioactive iodine ( $^{131}\text{I}$ ) is used for the treatment of hyperthyroidism and cancer of the thyroid. Methimazole and propylthiouracil are used to manage hyperthyroidism. Liothyronine is used to treat hypothyroidism.

Question format: Multiple Choice

Chapter: 42

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 574, Summary Drug Table

12. The nursing instructor is teaching a session on the thyroid and its hormones. The instructor determines the class is successful when the students correctly choose which hormone(s) as originating in the thyroid gland? Select all that apply.
- A) Thyroid-stimulating hormone
  - B) Adrenocorticotrophic hormone
  - C) Thyroxine
  - D) Prolactin
  - E) Triiodothyronine

Answer: C, E

Rationale: Thyroxine and triiodothyronine are hormones secreted by the thyroid gland. The anterior pituitary secretes thyroid-stimulating hormone. Prolactin and adrenocorticotrophic hormone are secreted by the pituitary gland.

Question format: Multiple Select

Chapter: 42

Learning Objective: 1

Cognitive Level: Remember

Client Needs: Physiological Integrity: Physiological Adaptation

Integrated Process: Teaching/Learning

Reference: p. 2, Introduction

13. A client presents to the clinic for a routine visit. The nurse suspects the client is experiencing hypothyroidism based on which assessment finding(s)? Select all that apply.
- A) Elevated body temperature
  - B) Weight gain
  - C) Bradycardia
  - D) Hypertension
  - E) Sleepiness

Answer: B, C, E

Rationale: The signs and symptoms of hypothyroidism include decreased metabolism; cold intolerance; low body temperature (not elevated); weight gain; bradycardia; hypotension (not hypertension); lethargy; sleepiness; pale, cool, dry skin; face appearing puffy; coarse hair; thick, hard nails; heavy menses; fertility problems; and low sperm count.

Question format: Multiple Select

Chapter: 42

Learning Objective: 1

Cognitive Level: Apply

Client Needs: Physiological Integrity: Physiological Adaptation

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

Reference: p. 568, Table 42.1 Signs and Symptoms of Thyroid Dysfunction

14. A nurse is preparing to teach a client about levothyroxine. The nurse will point out which factor(s) about this drug to the client during the teaching session? Select all that apply.
- A) Equivalent to all other thyroid hormone replacement drugs
  - B) More uniform potency than other thyroid hormone replacement drugs
  - C) Twice-daily dosing necessary
  - D) Relatively inexpensive
  - E) Less frequent laboratory monitoring required

Answer: B, D

Rationale: Levothyroxine is the drug of choice for hypothyroidism. It is relatively inexpensive, requires once-daily dosing, and has a more uniform potency than do other thyroid hormone replacement drugs. Laboratory monitoring will remain the same for all thyroid therapies to ensure adequate response to therapy.

Question format: Multiple Select

Chapter: 42

Learning Objective: 2

Cognitive Level: Understand

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 569, Thyroid Hormones

15. A client presents to the health care provider's office with reports of worsening hypothyroidism symptoms in spite of taking the prescribed levothyroxine. When questioned about medication changes, the client tells the nurse that they were recently prescribed an antidepressant by another health care provider. Which antidepressant(s) does the nurse suspect the client has started? Select all that apply.
- A) Amitriptyline
  - B) Quetiapine
  - C) Sertraline
  - D) Fluoxetine
  - E) Topiramate

Answer: C, D

Rationale: Selective serotonin reuptake inhibitors (SSRIs), such as sertraline and fluoxetine, can decrease the effectiveness of levothyroxine, leading to the reappearance of hypothyroidism symptoms in clients previously controlled on a dose of levothyroxine. Other categories of antidepressants such as amitriptyline (tricyclic antidepressant) will increase the effectiveness of the thyroid drug. There are no apparent interactions between levothyroxine and quetiapine (antipsychotic) or topiramate (anticonvulsant).

Question format: Multiple Select

Chapter: 42

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 569, Interactions

16. A client prescribed treatment for atrial fibrillation is now prescribed levothyroxine for hypothyroidism. The nurse prepares to monitor the client for increased cardiac dysfunction if the client is prescribed which current medication(s)? Select all that apply.
- A) Lisinopril
  - B) Digoxin
  - C) Diltiazem
  - D) Metoprolol
  - E) Warfarin

Answer: B, D

Rationale: A client with a heart condition controlled on digoxin and metoprolol must be monitored closely by the nurse for worsening atrial fibrillation if levothyroxine is initiated due to decrease effectiveness of digoxin and  $\beta$ -blockers (metoprolol). There are no recognized reactions when lisinopril (ACE inhibitor) or diltiazem (calcium channel blocker) are used with thyroid replacements. The use of warfarin (anticoagulant) with levothyroxine may result in prolonged bleeding.

Question format: Multiple Select

Chapter: 42

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 569, Interactions

17. A nurse is completing an assessment on a 70-year-old client suspected of having a thyroid dysfunction. The nurse will question which finding(s) as an indication before starting any thyroid treatment? Select all that apply.
- A) Constipation
  - B) Confusion
  - C) Unsteady gait
  - D) Decreased visual acuity
  - E) Cold intolerance



Answer: B, C, E

Rationale: Hypothyroidism may be confused with symptoms associated with aging, such as depression, cold intolerance, weight gain, confusion, or unsteady gait. These symptoms should be thoroughly evaluated before thyroid treatment is started. Constipation and decreased visual acuity are not related to hypothyroidism.

Question format: Multiple Select

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Physiological Adaptation

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

Reference: p. 571, Preadministration Assessment

18. The nurse is performing the ongoing assessment of a client taking levothyroxine. The nurse predicts the client is experiencing a therapeutic response based on which assessment finding(s)? Select all that apply.
- A) Weight loss
  - B) Mild diuresis
  - C) Increased appetite
  - D) Increased mental activity
  - E) Decreased pulse rate

Answer: A, B, C, D

Rationale: Signs of therapeutic response to levothyroxine include weight loss; mild diuresis; increased appetite; increased (not decreased) pulse rate; decreased puffiness of face, hands, and feet; and client report of increased mental activity and increased sense of well-being.

Question format: Multiple Select

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 571, Ongoing Assessment

19. A nurse is preparing to teach a client and caregivers about levothyroxine. Which instruction(s) should the nurse **prioritize** giving the client? Select all that apply.
- A) Therapy is lifelong.
  - B) Drug is taken in the evening.
  - C) Neck swelling and tenderness is expected after initiating therapy.
  - D) Do not skip a dose unless advised to do so.
  - E) Changing brands of the drug is okay.

Answer: A, D, E

Rationale: A nurse educating a client and their family about levothyroxine includes the following: therapy is lifelong, dose is taken in the morning before breakfast, and the client should not change brands of the drug without consulting the health care provider. The client should also notify the health care provider if headache, nervousness, palpitations, diarrhea, excessive sweating, heat intolerance, chest pain, increased pulse rate, or any unusual physical change or event occurs. Twice weekly weights are required if the client is taking methimazole or propylthiouracil. Tenderness and swelling of the neck, sore throat, and cough may occur in 2–3 days after the nuclear medicine department administers radioactive iodine to a client.

Question format: Multiple Select

Chapter: 42

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Teaching/Learning

Reference: p. 573, Thyroid Hormone

20. When teaching a client about the prescribed levothyroxine therapy, the nurse determines that the teaching was successful when the client states that they will contact the primary health care provider if which symptom(s) occurs? Select all that apply.
- A) Constipation
  - B) Palpitations
  - C) Excessive diaphoresis
  - D) Significant weight changes
  - E) Chest pain

Answer: B, C, D, E

Rationale: The client taking levothyroxine should contact the primary health care provider if any of the following occur: headache, nervousness, palpitations, diarrhea (not constipation), excessive diaphoresis, heat intolerance, chest pain, increased pulse rate, significant weight changes, or any unusual physical change or event.

Question format: Multiple Select

Chapter: 42

Learning Objective: 4

Cognitive Level: Analyze

Client Needs: Physiological Integrity: Pharmacological Therapies

Integrated Process: Teaching/Learning

Reference: p. 573, Thyroid Hormone

21. A nurse is providing care to a client with hyperthyroidism. Which treatment modalit(ies) would the nurse anticipate being used? Select all that apply.
- A) Levothyroxine
  - B) Methimazole
  - C) Radioactive iodine
  - D) Propylthiouracil

E) Subtotal thyroidectomy

Answer: B, C, D, E

Rationale: Methimazole, propylthiouracil, radioactive iodine, and subtotal thyroidectomy are treatment modalities used in the treatment of clients with hyperthyroidism. Levothyroxine is used for hypothyroidism, and this client will likely be prescribed it if the thyroid tissue is eradicated by either the radioactive iodine or subtotal thyroidectomy.

Question format: Multiple Select

Chapter: 42

Learning Objective: 4

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 574, Summary Drug Table

22. The nurse is caring for a client who was administered radioactive iodine ( $^{131}\text{I}$ ). Which assessment finding(s) should the nurse **prioritize** on the ongoing assessment? Select all that apply.
- A) Agranulocytosis
  - B) Exfoliative dermatitis
  - C) Hypoprothrombinemia
  - D) Seizures
  - E) Stroke

Answer: A, B, C

Rationale: The nurse should monitor a client receiving radioactive iodine ( $^{131}\text{I}$ ) for severe reactions including agranulocytosis, exfoliative dermatitis, hypoprothrombinemia, granulocytopenia, and drug-induced hepatitis. Seizures and stroke are not recognized as a severe reaction to radioactive iodine.

Question format: Multiple Select

Chapter: 42

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 570, Severe System Reactions

23. A client who is receiving warfarin has been prescribed medication for a thyroid issue. The nurse will monitor for potential signs of bleeding if which drug(s) is initiated? Select all that apply.
- A) Propylthiouracil
  - B) Desiccated thyroid
  - C) Sodium iodine
  - D) Methimazole
  - E) Liothyronine

Answer: A, B, D, E

Rationale: All of the thyroid hormone replacements such as levothyroxine, liothyronine, liotrix, and desiccated thyroid and antithyroid preparations such as methimazole and propylthiouracil can increase the risk for bleeding when clients are also administered warfarin.

Question format: Multiple Select

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

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

Reference: p. 569, Interactions

24. A health care provider has ordered an iodine procedure for a client with thyroid dysfunction. What should the nurse **prioritize** in the preadministration assessment for the client? Select all that apply.
- A) Allergy history
  - B) Weight
  - C) Pulse
  - D) Blood glucose
  - E) Temperature

Answer: A, B, C, E

Rationale: The nurse's preadministration assessment for the client should include vital signs (blood pressure, respiratory rate, pulse, and temperature), allergy history, weight, and notation regarding the outward symptoms of the hyperthyroidism. The blood glucose is not necessary for this situation.

Question format: Multiple Select

Chapter: 42

Learning Objective: 3

Cognitive Level: Apply

Client Needs: Physiological Integrity: Reduction of Risk Potential

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

Reference: p. 571, Preadministration Assessment

25. After teaching a client who is prescribed methimazole, the nurse determines that the teaching was effective when the client states which point(s)? Select all that apply.
- A) "I need to take the drug around the clock."
  - B) "I should call my primary health care provider if I have a fever."
  - C) "I can use any over-the-counter medications if I need to."
  - D) "I might have some tenderness and swelling of my neck."
  - E) "I don't need to monitor my weight like I did before."

Answer: A, B

Rationale: The client taking methimazole should take the drug as prescribed around the clock and call the primary health care provider if they develop fever, sore throat, cough, easy bleeding or bruising, headache, or a general feeling of malaise. The client also needs to check with the prescriber before using any nonprescription drugs and monitor their weight twice a week, notifying the primary health care provider if there is any sudden weight gain or loss. Tenderness and swelling would be noted if the client received radioactive iodine for a procedure.

Question format: Multiple Select

Chapter: 42

Learning Objective: 4

Cognitive Level: Analyze

Client Needs: Physiological Integrity: Reduction of Risk Potential

Integrated Process: Teaching/Learning

Reference: p. 573, Methimazole and Propylthiouracil

26. A nurse is preparing to administer levothyroxine to a client. Which sign(s) or symptom(s) would the nurse expect to document on the preadministration assessment? Select all that apply.
- A) Nervousness
  - B) Anorexia
  - C) Coarse hair
  - D) Cold intolerance
  - E) Tachycardia

Answer: B, C, D

Rationale: Levothyroxine is used to treat hypothyroidism manifested by anorexia, coarse hair, cold intolerance, lethargy, and bradycardia (not tachycardia). Nervousness and tachycardia are possible adverse reactions to levothyroxine and would be evident on the ongoing assessment after therapy had started.

Question format: Multiple Select

Chapter: 42

Learning Objective: 2

Cognitive Level: Apply

Client Needs: Physiological Integrity: Pharmacological Therapies

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

Reference: p. 568, Table 42.1 Signs and Symptoms of Thyroid Dysfunction