Chapter 51
Thyroid and Antithyroid Drugs

**Thyroid Drugs**
- Thyroid hormones increase:
  - Metabolic rate of tissues
  - Heart and respiratory rate
  - Body temperature; cardiac output
  - Oxygen consumption
  - Metabolism of fats, proteins, carbohydrates
- Iodine is an essential element for manufacture of T4 and T3

**Thyroid Drugs: Uses**
- Replacement therapy
- Euthyroid goiter
- Thyroid nodules and multinodular goiter
- Hashimoto’s disease (thyroiditis)
- Thyroid cancer

- Synthroid is drug of choice
Thyroid Drugs

Administration:
- Once a day, early AM, before breakfast
- Careful monitoring-dosage adjustments
- Primary adverse affect: sx of hyperthyroidism
  - Nervousness, anxiety, ↑ temp, tachycardia, HTN

Thyroid Drugs

- Contraindicated in patients with:
  - Known hypersensitivity to drug
  - Uncorrected adrenal cortical insufficiency
  - Thyrotoxicosis
- Used cautiously in patients:
  - With cardiac disease
  - During lactation

Thyroid Drugs Nursing Process

- Take vital signs and weigh patient before therapy starts
- Monitor vital signs as ordered and observe patient for signs of hyperthyroidism, which may signal excessive drug dosage
- Closely monitor: Patient with diabetes during thyroid hormone replacement therapy for signs of hyperglycemia – notify if problem occurs
- Observe patients who have cardiovascular disease and who take thyroid hormones
Thyroid Drugs Patient Education

- Replacement therapy is for life
- Do not alter the dose unless advised
- Take this drug in morning, before breakfast, unless advised to take it at different time of day
- Weigh yourself weekly and report any significant weight gain or loss
- Dosage of the drug may require periodic adjustments
- Periodic thyroid function tests needed

Antithyroid Drugs

- Inhibit manufacture of thyroid hormones

Uses:
- Hyperthyroidism
- Administered before surgery to temporarily return the patient to an euthyroid state
- Radioactive iodine used for treatment of hyperthyroidism and selected cases of cancer of the thyroid

Types:
- Methimazole (Tapazole)
- Propylthiouracil (PTU)
- Lugol’s solution + Tapazole or PTU

Antithyroid Drugs Adverse Reactions

Tapazole/PTU
- Agranulocytosis—most serious
  - Sore throat, skin rash, fever, HA

Strong Iodine Solutions
- Iodism: excessive iodine in body
  - Metallic taste, burning of mouth/throat, sore teeth & gums

Radioactive Iodine
- Bone marrow depression, anemia, leukopenia, thrombocytopenia, tachycardia
Antithyroid Drugs: Contraindications, Precautions, and Interactions

- Contraindicated in patients with hypersensitivity to drug or any constituent of drug
- Methimazole, propylthiouracil are used with caution during pregnancy because they can cause hypothyroidism in the fetus
- Potential for bleeding increases when antithyroid drugs are taken with oral anticoagulants

Antithyroid Drugs Nursing Process

- Take a careful allergy history, particularly to iodine or seafood if the patient is prescribed an iodine procedure
- Observe patient for adverse drug effects
- Signs or symptoms indicating adverse reaction related to decrease in blood cells: fatigue, fever, sore throat, easy bruising or bleeding, fever, cough, or any other signs of infection
- Monitor patient for signs of thyroid storm

Antithyroid Drugs Patient Education

- Radioactive iodine
  - Follow department of nuclear medicine directions regarding precautions to be taken
  - Thyroid hormone replacement therapy is necessary if hypothyroidism develops
  - Schedule necessary follow-up evaluations to review the thyroid gland and effectiveness of treatment