

gland is oversecreting hormones, the patient needs medication to inhibit cortisol to treat hypertension and hypertension symptoms.

### Corticosteroid Medications

Glucocorticoid hormones available as medications are known as corticosteroids because their actions are identical to those of the naturally occurring hormones cortisone and cortisol. Chemically, these medications are steroids and are used as replacement therapy when these hormones are absent or diminished. Corticosteroid medications are used to treat Addison's disease, autoimmune diseases, inflammatory reactions, cerebral edema, dermatologic disorders, allergies, asthma, cancer, Crohn's disease, dermatitis, edema, rash, rheumatoid arthritis, rhinitis, shock, transplant rejection, and ulcerative colitis.

**Addison's disease** occurs when the adrenal cortex undersecretes glucocorticoid hormones. Patients with Addison's disease suffer from chronic fatigue that eventually worsens, muscle weakness, anorexia, nausea, vomiting, diarrhea, hypotension, hypoglycemia, sweating, irritability, and weight loss. The disease is treated with hydrocortisone USP tablets, a synthetic corticosteroid. If the level of aldosterone is also insufficient, it is replaced with oral doses of fludrocortisone acetate (Florinef).

In **Cushing's disease**, the adrenal cortex oversecretes the glucocorticoids mentioned earlier. Patients with Cushing's disease have symptoms similar to those of Addison's disease, except these patients suffer hypertension and hyperglycemia instead of hypotension and hypoglycemia. They also develop a fatty hump between their shoulders. Most patients have upper-body obesity and a rounded face, and women have excessive hair growth on their face, chest, abdomen, and thighs. Treatment is based on the cause of the excess production and may include surgery, irradiation, chemotherapy, and cortisol-inhibiting drugs such as metyrapone (Metopirone).

### Anabolic Steroids

Anabolic steroids are mainly composed of male hormones called androgens, which change the natural balance between tissue breakdown and building. They can be used to prevent muscle wasting in patients with AIDS or to help patients with severe trauma to rebuild tissue. Examples of anabolic steroids are oxandrolone (Oxandrin) and nandrolone decanoate. Side effects of these medications include aggressive behavior, rage, atherosclerosis, sterility, and liver cancer. Because of these side effects and because anabolic steroids are frequently abused by athletes trying to build muscle mass, they are Schedule III controlled substances.

## S U M M A R Y

- Components of the endocrine system produce hormones to control many of the body's functions.
- The endocrine system consists of the hypothalamus gland, pituitary gland, thyroid and parathyroid glands, pancreas, adrenal glands, pineal gland, and gonads.
- Disorders affecting this system can have profound implications for the health of the patient.
- Extremely high or extremely low hormone levels can cause various illnesses.
- Hormones from the thyroid and parathyroid glands regulate blood and bone calcium.
- Patients may need to take medications to suppress hormone secretion or hormone supplements to compensate for missing hormones.
- Hormone replacement therapy (HRT) to treat hypothyroidism consist of natural or synthetic hormones in oral doses.
- Medications to treat hyperthyroidism, which can lead to Graves' disease, include sodium iodide I-131 and other oral antithyroid drugs such as propylthiouracil or methimazole. Patients who do not respond to medication may need surgery (thyroidectomy).
- Pancreatic dysfunction causes two major problems that require medication. The first is the inability to digest food, and the second is the inability to regulate blood sugar.