Endocrine Disorders

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Learning Objectives

1. Identify the prevalence and clinical presentation of endocrine disorders, including diabetes mellitus, obesity, thyroid disorders, and sexual dysfunction, among older adults.

2. Evaluate the management of older adults with endocrine disorders compared to younger patients.

3. Assess the potential effects of major endocrine disorders on common comorbid diseases in older adults and on quality-of-life issues.

4. Critique major studies of diabetes mellitus that enrolled older adults regarding the studies’ application to clinical practice.

5. Develop a treatment plan appropriate for older adults with selected endocrine disorders.

Key Terms and Definitions

GRAVES’ DISEASE: An immune system disorder characterized by painful, red eyes due to inflammation. Eyelids and tissues around the eyes are swollen with the eyeballs bulging out of their sockets.

HEMOGLOBIN A\textsubscript{1c} (HbA\textsubscript{1c}): A minor component of hemoglobin to which glucose is bound. HbA\textsubscript{1c} is also referred to as glycated hemoglobin; it provides a measure of glucose control over the past 3 months.

HORMONE THERAPY (HT): A term, along with menopausal hormone therapy, that describes the hormones used to treat menopausal symptoms. In the past, this therapy was called hormone replacement therapy. The newer term reflects the fact that the estrogen and progestin concentrations are not returned to premenopausal levels.

MACROVASCULAR COMPLICATIONS: Diseases of the larger blood vessels resulting in atherosclerotic vascular disease.
**Introduction**

The endocrine system affects almost every organ in the body physiologically. It regulates glucose and thyroid metabolism, maintains muscle and skeletal mass and normal gonadal functioning, and has many other roles. Similar to other systems, the endocrine system may undergo diverse changes due to aging. The best recognized age-related endocrine change occurs within the hypothalamic-pituitary-adrenal axis with the onset of menopause in middle-aged women. The secretion of growth hormone and the serum concentration of insulin-like growth factor may decrease with age. The secretion of dehydroepiandrosterone from the adrenal cortex may also decline with advancing age, and older adults may have greater variability in serum cortisol concentrations throughout a 24-hour period. Although the secretion of other hormones may differ in older versus younger adults, whether the differences are truly age-related or are due instead to disease-related processes is difficult to establish. Endocrine diseases such as diabetes mellitus and thyroid disorders together affect about 12% of Americans. This chapter will focus on diabetes mellitus, obesity, thyroid disorders, sexual dysfunction, and other endocrine diseases in older adults.

**Diabetes Mellitus**

**Etiology, Epidemiology, and Clinical Presentation in Older Adults**

According to the Centers for Disease Control and Prevention, the prevalence of diabetes has risen to almost 27% of people 65 and older. Because its prevalence increases with advancing age, diabetes will become even more common with the aging of the American population. Interestingly, nondiabetic patients have been noted to have higher hemoglobin A1c (HbA1c) levels as they age. The HbA1c levels have been reported to increase 0.012% per year. Also, the prevalence of diabetes continues to rise among minority groups. Among older adults with diabetes, about 40% were diagnosed at 65 or older. Patients with type 1 diabetes have increased their life expectancy and, as a result, more older adults will have type 1 diabetes in the near future. Case reports of older adults diagnosed with type 1 diabetes have been published, although the true prevalence of type 1 diabetes in the older adults remains uncertain.

An estimated 35% of adults have prediabetes, and this estimate increases to more than 50% in individuals over 65 years of age.