

Endocrinology, Diabetes and Metabolism
Howard University Hospital

Overview and Rationale

Endocrinology is the diagnosis and care of disorders of the endocrine system. The principal endocrine problems handled by the general internist include goiter, thyroid nodules, thyroid dysfunction, diabetes mellitus, hyper- and hypocalcaemia, adrenal cortex hyper- and hypo function, endocrine hypertension, gonadal disorders, hyper- and hyponatremia, certain manifestations of pituitary tumors, disorders of mineral metabolism, and hyperlipidemias. Obesity is not strictly an endocrine disorder but is considered part of the spectrum of endocrinology because it frequently enters into the differential diagnosis of endocrine disease and is a major element in the management of non-insulin-dependent diabetes. Prevention efforts focus on complications of hyperlipidemias, obesity, thyroid dysfunction, and diabetes mellitus, and on endocrinologic side effects of pharmacologic glucocorticoids and other medications.

The general internist must be able to evaluate and manage common endocrine disorders and refer appropriately. He or she must also be able to evaluate and identify the endocrinologic implications of abnormal serum electrolytes, hypertension, fatigue, and other nonspecific presentations. The general internist plays a key role in managing endocrine emergencies, particularly those encountered in the intensive care unit, including diabetic ketoacidosis and hyperosmolar nonketotic stupor, severe hyper- and hypocalcaemia, and Addisonian crisis.

Goals

- 1) to acquire the knowledge, skills and attitude to effectively assess and manage the patient with endocrine needs

Objectives: At the end of the rotation the resident should be able to

- 1) demonstrate the ability to evaluate and fully investigate and evaluate basic and clinical science questions in endocrinology and metabolism
- 2) demonstrate the ability to manage ambulatory and hospitalized patients who may be suffering from a wide range of endocrine disorders.

Rotation Description and Lines of Responsibility

The endocrine rotation is a four rotation offered at Howard university Hospital comprising both an outpatient and inpatient consultative experiential educational experience. The attending physician is responsible for all clinical, educational and administrative activities during this rotation. Residents will also interact with fellows doing subspecialty training in endocrinology. The fellow is responsible for supervising the clinical and academic activities of the resident and reports to and is supervised by the attending physician.

The resident will initially independently assess and evaluate inpatient consultations from the clinical services at HUH. The resident is responsible for collecting and collating all laboratory and radiological data and the subsequent completion of the consult data base. Cases are presented to the attending physicians during daily bedside teaching rounds. Teaching rounds are patient-base discussions which are evidence-based and involve all aspects of the care of the patient including clinical, diagnostic, therapeutic aspects of care.

Residents will also attend the outpatient endocrine clinics. These include the general endocrine clinic and the specialty clinics, such as the diabetic clinic. Resident will assess and follow new and established patients in the clinic under the direct supervision and mentorship of the attending physician assigned to the clinic. The resident will be exposed to the outpatient management of common endocrine disorders and to appreciate the natural history of these disorders.

Teaching Methods

Core Lectures: A series of lectures covering core elements in endocrine diseases will be given throughout the year. Residents are required to attend these lectures. The pathophysiology conference and Grand Rounds are the main conferences where these lectures are given.

Teaching Rounds: Daily teaching rounds are given. These are led by the attending physician and are bedside patient base discussions and demonstrations that involve all aspects of patient care.

Didactics are facilitated and mentored by the attending physician and take place during rounds on a daily basis. Topic includes the following;

- Adrenal disorders
 - Hypercortisolism
 - Hypoadrenocortisolism, acute
 - Hypoadrenocortisolism, chronic
- Bone disorders
 - Osteopenia/osteoporosis
 - Paget's disease of bone
- Diabetes mellitus (see also Nephrology)
 - Diabetic ketoacidosis
 - Type 1
 - Type 2
- Metabolic disorders
 - Hyperosmolar state
 - Hypoglycemia
 - Hyponatremia/hypermnatremia
- Lipid disorders
- Obesity
- Panhypopituitarism
- Parathyroid disorders
 - Hypercalcemia

- Hyperparathyroidism
- Hypocalcaemia
- Reproductive/sexual disorders
 - Change in sexual function
 - Galactorrhea
 - Hirsutism/virilization
 - Hypogonadism, female menopause
 - Hypogonadism, male gonadal failure
 - Menstrual disorders
- Thyroid disorders
 - Enlarged thyroid (goiter, nodule)
 - Hyperthyroidism
 - Hypothyroidism

Procedure Skills

- Dexamethasone suppression test (overnight)
- Home blood glucose monitoring
- ACTH stimulation test

Primary Interpretation of Tests

- None specific to the discipline

Ordering and Understanding Tests

- Bone mineral analysis (densitometry)
- Fasting and standardized postprandial serum glucose concentrations
- Glycohemoglobin or serum fructosamine concentration
- Imaging studies of the sella turcica
- Microalbuminuria
- Serum alkaline phosphatase activity (for Paget's disease of bone)
- Serum and urine ketone concentrations (quantitative or qualitative)
- Serum and urine osmolalities
- Serum gonadotropin concentrations (follicle-stimulating hormone, luteinizing hormone)
- Serum lipid profile
- Serum phosphate concentration
- Serum prolactin concentration
- Serum testosterone concentration
- Serum thyroid function tests
- Thyroid scanning and ultrasound
- Urinary calcium, phosphate, uric acid excretion
- Urinary sodium, potassium excretion
- Urine metanephrine, VMA (vanillylmandelic acid), and total catecholamine levels

Evaluation Methods

Residents are evaluated by faculty in a summative manner at the end of the rotation using a global rating form.

Faculty are evaluated in an anonymous fashion by residents using a global rating form. These forms are submitted to the program director's office.

The rotation is evaluated using a global rating form completed by the resident at the end of the rotation.

Reading List