

## General Endocrine Disorders: Review Questions

*Catherine Anastasopoulou, MD*

### QUESTIONS

Choose the single best answer for each question.

- Which of the following is the most specific test to diagnose acromegaly?**
  - Magnetic resonance imaging of the pituitary gland
  - Measurement of growth hormone (GH) levels during an oral glucose tolerance test
  - Measurement of insulin-like growth factor I serum levels
  - Measurement of random GH blood levels
  - An octreotide scan
- A 35-year-old woman with amenorrhea is found to have an enlarged pituitary gland. Her prolactin level is 80 ng/L (normal, less than 20 ng/L), and her thyrotropin level is 100  $\mu$ U/mL (normal, 0.5 to 4.5  $\mu$ U/mL). Which of the following is the best treatment option for this patient?**
  - Administration of bromocriptine
  - Administration of L-thyroxine
  - Irradiation of the pituitary gland
  - Resection of the pituitary gland
  - Use of oral contraceptives
- All of the following are considered part of multiple endocrine neoplasia type 2 syndrome EXCEPT:**
  - Hyperparathyroidism
  - Medullary thyroid carcinoma
  - Mucosal neuromas
  - Pheochromocytoma
  - Prolactinoma
- A previously healthy 45-year-old man is hospitalized in the intensive care unit for almost a month, following a car accident that caused serious head trauma. During evaluation of the patient for tachycardia, he was found to have a thyrotropin level of 0.3  $\mu$ U/mL (normal, 0.5 to 4.5  $\mu$ U/mL) and a serum thyroxine level of 1.2  $\mu$ g/dL (normal, 5 to 12  $\mu$ g/dL). What is the most likely diagnosis for this patient?**
  - Central hypothyroidism
  - Euthyroid sick syndrome
  - Hyperthyroidism
  - Pituitary apoplexy
  - Primary hypothyroidism
- Which of the following is the most common presentation of primary hyperparathyroidism?**
  - Asymptomatic hypercalcemia
  - Bone fracture
  - Kidney stones
  - Osteoporosis
  - Renal failure
- Which of the following is NOT a cause of hypertriglyceridemia?**
  - Acromegaly
  - Alcoholism
  - Diabetes mellitus
  - Estrogen therapy
  - Hypothyroidism

*(turn page for answers)*

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*Dr. Anastasopoulou is an endocrinologist in private practice, affiliated with Albert Einstein Medical Center and Pennsylvania Hospital, Philadelphia, PA.*

**EXPLANATION OF ANSWERS**

1. **(B) Measurement of growth hormone (GH) levels during an oral glucose tolerance test.** The most specific test to diagnose acromegaly is the measurement of GH levels during an oral glucose tolerance test (OGTT). GH is not suppressed during an OGTT in patients with acromegaly, whereas its secretion is suppressed in individuals without the disorder. Random levels of GH in the blood may vary and are not informative in the diagnosis of acromegaly. Magnetic resonance imaging and octreotide scanning are imaging studies used for localization purposes only. Measuring insulin-like growth factor I is also a good test to screen for acromegaly, but physicians must be sure that patients do not have conditions such as hypoproteinemia and are not pregnant or undergoing puberty.
2. **(B) Administration of L-thyroxine.** The best treatment for this patient is L-thyroxine, because she suffers from severe hypothyroidism. Amenorrhea is a symptom of hypothyroidism, especially in severe cases of the disorder, and can be accompanied by hyperprolactinemia and galactorrhea. The enlargement of the pituitary gland is secondary to the overproduction of thyrotropin, which is a response to decreased levels of thyroid hormone levels. When patients are treated with thyroid replacement therapy, all manifestations of hypothyroidism disappear, and treatment for hyperprolactinemia is unnecessary.
3. **(E) Prolactinoma.** Prolactinomas and other pituitary tumors are part of multiple endocrine neoplasia (MEN) type 1 syndrome. MEN type 2 syndromes are divided into types 2A and 2B. MEN type 2A includes hyperparathyroidism, pheochromocytoma, and medullary thyroid carcinoma; MEN type 2B includes pheochromocytoma, medullary thyroid carcinoma, and mucosal neuromas. It is important for physicians to recognize patients with these hereditary syndromes and to encourage all of the patients' family members to undergo appropriate screening for the disorder.
4. **(B) Euthyroid sick syndrome.** The patient has euthyroid sick syndrome and should not be treated for a thyroid problem. Patients with serious acute health problems can have abnormal values on thyroid tests (mainly decreased thyrotropin and normal or decreased serum thyroxine levels) that are temporary and normalize soon after general health status improves. In primary hypothyroidism, thyrotropin is elevated, and in hyperthyroidism, thyrotropin is suppressed and serum thyroxine is elevated. In central hypothyroidism and pituitary apoplexy, patients present with symptoms of panhypopituitarism, and thyrotropin levels could even be normal.
5. **(A) Asymptomatic hypercalcemia.** Patients with primary hyperparathyroidism are usually asymptomatic and are suspected of having the disease only after being found hypercalcemic on a routine check-up. In chronic and more severe cases, patients can present with osteoporosis, bone fractures, and a bone disease called osteitis fibrosa cystica. The kidneys can have nephrocalcinosis secondary to extensive calcifications. Other potential serious complications include lens calcifications, peptic ulcer disease, and pancreatitis.
6. **(E) Hypothyroidism.** Several conditions can be accompanied by high triglyceride levels, including diabetes mellitus, alcoholism, acromegaly, obesity, and the use of estrogen and glucocorticoid therapy. In most of these cases, the lipid levels can improve with the treatment of the primary disease, but sometimes the problem must be addressed early to avoid major complications (eg, pancreatitis, vascular disease). Hypothyroidism is usually accompanied by high cholesterol levels and less often by high triglyceride levels.

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