Growth hormone-related pathology

Somatotroph pituitary neuroendocrine tumor old term Somatotroph adenoma

Acromegaly is characterized by GH and IGF-1 hypersecretion, and GH and IGF-1 play important roles in regulating body composition and glucose homeostasis.

Growth hormone deficiency

see Growth hormone deficiency.

Excessive growth hormone (GH) is usually secreted by Somatotroph pituitary neuroendocrine tumors and causes gigantism in juveniles or acromegaly in adults.

The growth hormone test may be used to monitor response to acromegaly treatment.

Different tests are used to diagnose growth problems:

GHRH or GHRH-arginine stimulation (to help diagnose a lack of growth hormone)

Growth hormone stimulation test

IGF-1 levels

Oral glucose tolerance suppression (to help diagnose too much growth hormone)

Normal Results

The normal range for growth hormone levels is typically:

1 - 9 ng/mL (male)

1 - 16 ng/mL (female)

GH is released in pulses. A higher level may be normal if the blood was drawn during a pulse. A lower level may be normal if the blood was drawn around the end of a pulse.

Normal value ranges may vary slightly among different laboratories. Talk to your doctor about the meaning of your specific test results.

Co-secretion of growth hormone (GH) and prolactin (PRL) from a single pituitary neuroendocrine tumor is common. In fact, up to 25% of patients with acromegaly may have PRL co-secretion. The prevalence of acromegaly among patients with a newly diagnosed prolactinoma is unknown. Given the possibility of mixed GH and PRL co-secretion, the current recommendation is to obtain an insulin-like growth factor-1 (IGF-1) in patients with prolactinoma at the initial diagnosis. Long-term follow-up of IGF-1 is not routinely done [1)].

Growth-hormone staining pituitary neuroendocrine tumor

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Craniopharyngioma

A significant number of patients with craniopharyngioma are GH deficient. The safety of GH replacement in these subjects has not been established.

1)

Manuylova E, Calvi LM, Hastings C, Vates GE, Johnson MD, Cave WT Jr, Shafiq I. Late presentation of acromegaly in medically controlled prolactinoma patients. Endocrinol Diabetes Metab Case Rep. 2016;2016. pii: 16-0069. PubMed PMID: 27855229.