INDICATIONS FOR TESTING
Clinical suspicion of GHD

ORDER
IGF-1 measurement with z score

Identified organic GHD
WITH
≥3 hormone deficiencies
AND
low IGF-1 (z score < -2)

Organic disease
WITH
0, 1, or 2 hormone deficiencies
AND
low IGF-1 (z score < 0)

History of hypothalamic-pituitary tumors, surgery, cranial irradiation, traumatic brain injury, subarachnoid hemorrhage, ischemic stroke, or central nervous system infection

High suspicion
AND
low IGF-1 (z score < 0)

PERFORM
Stimulation testing
(GST, ITT, or macimorelin test)

Other results

Low suspicion
AND
normal IGF-1 (z score ≥ 0)

Observe

GST:
- Peak GH ≤ 3 ng/mL (patient with normal weight or overweight with high pretest probability of GHD)
- Peak GH ≤ 1 ng/mL (overweight patient with low pretest probability or obese patient)

ITT: Peak GH ≤ 5.0 ng/mL

Macimorelin test: Peak GH ≤ 2.8 ng/mL

GHD confirmed

Treat with rhGH

ORDER
IGF-1 measurement with z score at 1- to 2-mo intervals until maintenance dose is achieved

Monitor at 6- to 12-mo intervals

ORDER
IGF-1 measurement with z score
AND
fasting glucose, hemoglobin A1c, fasting lipid, serum free T4, and cortisol or cosynotropin testing as appropriate

Abbreviations
GH Growth hormone
GHD Growth hormone deficiency
GST Glucagon stimulation test
IGF-1 Insulin-like growth factor 1
ITT Insulin tolerance test
rhGH Recombinant human growth hormone

References