Acromegaly

Diagnosis, comorbidity management, surgery, medical therapy, radiotherapy, and special circumstances for adults with acromegaly.

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Acromegaly Clinical Practice Guideline
Katznelson et al. · JCEM 2014;99:3933-3951

GRADE · 1 · Strong For · 2 · Suggest For · 2- · Suggest Against · 3 · Strong Against · Ungraded

1 Diagnosis

1	Measure **IGF-1** in patients with typical clinical manifestations (acral/facial features). **Suggest (2)** IGF-1 even without typical features if sleep apnea, T2DM, debilitating arthritis, carpal tunnel syndrome, hyperhidrosis, or hypertension present.
3	**Against** relying on random GH levels to diagnose acromegaly; confirm elevated/equivocal IGF-1 with an **oral glucose load** — lack of GH suppression to <1 µg/L confirms diagnosis.
1	After biochemical diagnosis, obtain a pituitary **MRI** (imaging of choice; CT if MRI contraindicated/unavailable) to assess tumor size and parasellar extent. Suggest formal **visual field testing** if the tumor abuts the optic chiasm.

2 Comorbidities

2	Evaluate all patients for **hypertension, diabetes, cardiovascular disease, osteoarthritis, and sleep apnea**; monitor longitudinally and manage rigorously (ungraded).
2	Screen for **colon neoplasia** with colonoscopy at diagnosis; obtain a **thyroid ultrasound** if palpable nodularity.
1	Assess for **hypopituitarism** and replace hormone deficits.

3 Goals of Management

2	Target an **age-normalized IGF-1** and random **GH <1.0 µg/L** to signify biochemical control. Use the **same GH/IGF-1 assay** consistently in a given patient throughout management.

4 Surgery

1	**Transsphenoidal surgery** is primary therapy for most patients; consider repeat surgery for residual intrasellar disease.
2-	**Against** routine preoperative medical therapy to improve postop biochemical control — exception: SRL therapy for severe pharyngeal thickening/sleep apnea/high-output heart failure to reduce surgical risk.
2	**Surgical debulking** when parasellar disease makes total resection unlikely, to improve response to subsequent medical therapy.
2	**Postop:** measure IGF-1 and random GH ≥12 weeks after surgery (nadir GH after glucose load if GH >1); obtain imaging (MRI preferred) ≥12 weeks postop.

5 Medical Therapy

1	Medical therapy indicated for **persistent disease** after surgery.
2	Significant disease (moderate–severe symptoms, no mass effect) → **SRL or pegvisomant** as initial adjuvant. Modest IGF-1 elevation/mild symptoms → trial of a **dopamine agonist** (cabergoline).
2-	**Against** routine abdominal ultrasound for gallstones on SRL therapy (only if symptomatic); add pegvisomant or cabergoline if inadequate SRL response.
2	On **pegvisomant:** serial MRI for tumor size; monthly LFTs for 6 months then every 6 months, consider discontinuing if transaminases >3× ULN.
2	**SRL as primary therapy** if not curable by surgery, extensive cavernous sinus invasion without chiasmal compression, or poor surgical candidate.

6 Radiotherapy

2	**RT** for residual tumor after surgery when medical therapy is unavailable/unsuccessful/not tolerated; prefer **stereotactic RT** over conventional unless significant residual burden or chiasm proximity (exposure >8 Gy).
1	**Annual GH/IGF-1** reassessment off medication to monitor RT efficacy; annual hormonal testing post-RT for hypopituitarism/delayed effects.

7 Special Circumstances

1	**Gigantism** — use standard diagnostic/therapeutic approach as for adult-onset acromegaly.
2	**Pregnancy:** discontinue long-acting SRL/pegvisomant ~2 months before conception (bridge with short-acting octreotide if needed); withhold medical therapy during pregnancy except for tumor/headache control; serial visual field testing if macroadenoma; against routine GH/IGF-1 monitoring during pregnancy.

Katznelson L, Laws ER Jr, Melmed S, et al. Acromegaly: An Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab.* 2014;99(11):3933-3951.