CME OUTFITTERS

SEEING THE UNSEEN

Early Recognition and Individualized Management of Acromegaly

This program is supported by an educational grant from Crinetics Pharmaceuticals.

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CME OUTFITTERS

This activity may include discussions of products or devices that are not currently labeled for use by the U.S. Food and Drug Administration (FDA).

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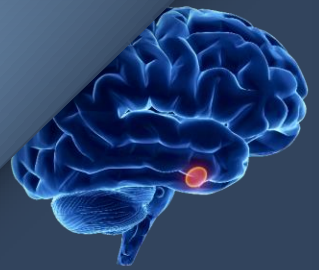
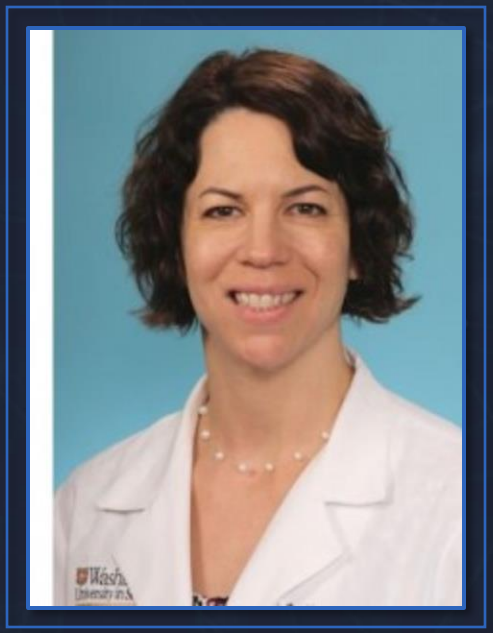
To Ask a Question

To submit a question, please go to the *Ask Question* tab at the bottom of the screen.





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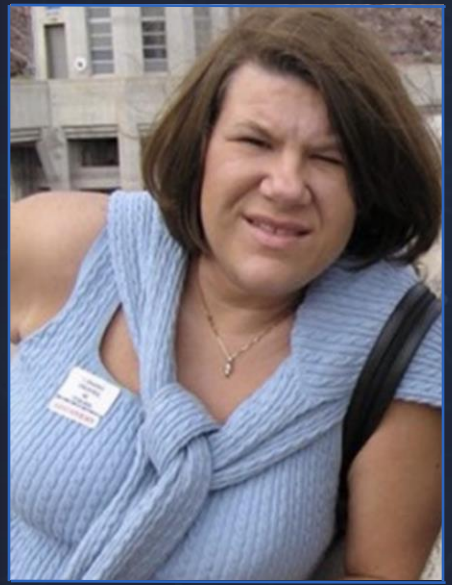

Jill Sisco

Patient Advocate
President,
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Disclosures

Dr. Silverstein reports the following financial relationships:

- *Consultant*: Camurus; Chiesi USA, Inc.; and Xeris Pharmaceuticals, Inc.
- *Research Support:* AbbVie Inc.; Ascendis Pharma; Bayer; Camurus; Debiopharm; Fractyl Health, Inc.; Recordati; and Sparrow Pharmaceuticals

Dr. Huang reports the following financial relationships:

- *Advisory Board:* Amryt Pharma; Camurus; Chiesi USA, Inc.; Crinetics Pharmaceuticals, Inc.; Neurocrine Biosciences, Inc.; Novo Nordisk; Recordati Rare Diseases, Inc.; and Xeris Pharmaceuticals, Inc.
- *Consultant:* Spruce Biosciences, Inc.
- *Research Support:* Amryt Pharma; Ascendis Pharma; AstraZeneca; Corcept Therapeutics Incorporated; Crinetics Pharmaceuticals, Inc.; MBX Biosciences; and Spruce Biosciences, Inc.
- *Speakers Bureau:* Amryt Pharma; Chiesi USA, Inc.; Neurocrine Biosciences, Inc.; and Recordati Rare Diseases, Inc.

Ms. Sisco reports the following financial relationships:

- *Consultant:* Camurus; Chiesi USA, Inc.; and Recordati Rare Diseases Inc.

All identified conflicts of interest have been mitigated.

CME OUTFITTERS

Disclosures

The following individuals have no financial relationships to disclose:

- Thai Nguyen, MD, MHA (Peer Reviewer)
- Jessica Giddens, DNP, APRN, FPMHNP-BC, RN-BC (Peer Reviewer)
- Felicia G. Oyedepo, MD (Planning Committee)
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- Sandra Caballero, PharmD (Planning Committee)
- Sharon Tordoff (Planning Committee)

All identified conflicts of interest have been mitigated.

CME OUTFITTERS

Audience Response

Which of the following is most likely to present as an early clinical sign of acromegaly?

A. Visual field defects
B. Hyperglycemia requiring insulin therapy
C. Enlargement of hands and feet
D. Congestive heart failure
E. Secondary amenorrhea

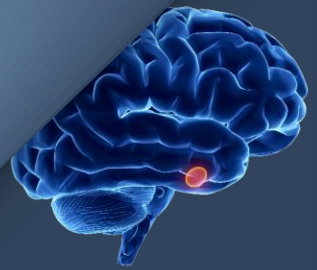
CME OUTFITTERS

1 LEARNING OBJECTIVE

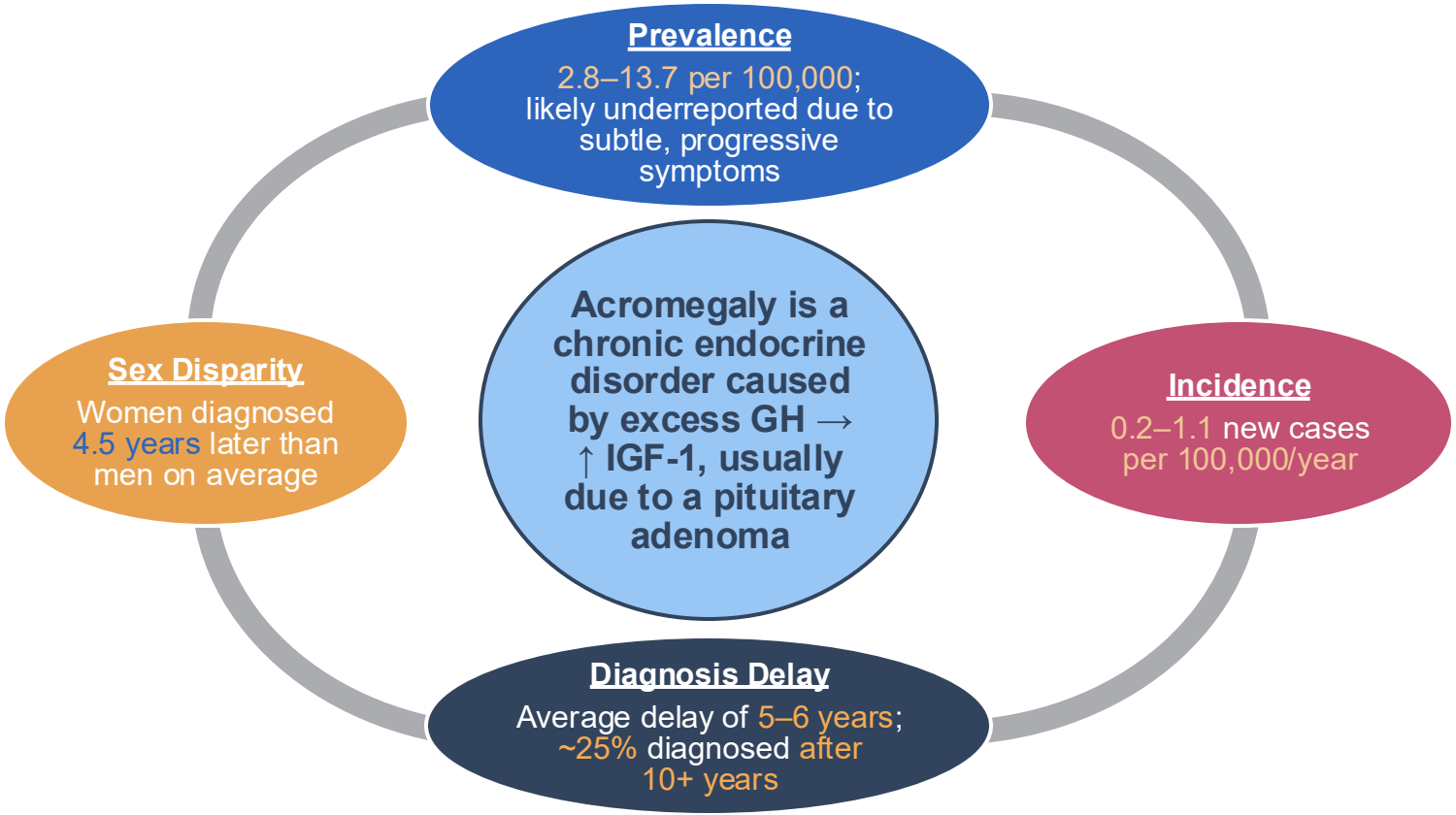
Integrate strategies aligned with guideline recommendations to diagnose acromegaly early in the disease course

What Do the Guidelines Say?

Diagnosis and Pathophysiology of Acromegaly



Definitions and Epidemiologic Insights



GH = growth hormone; IGF-1 = insulin-like growth factor 1.

Fleseriu M, et al. *Pituitary*. 2021;24(1):1-13. Fleseriu M, et al. *Lancet Diabetes Endo*. 2022;10(11):804-826.

CME OUTFITTERS

Risk Factors

Genetic

- Germline mutations in:
  - MENIN (MEN1)
  - CDKN1B (MEN4)
  - AIP (some FIPA)
  - PRKAR1A (Carney's complex)
  - GPR101 (X-linked acrogigantism)
- Family history of pituitary tumors
- Familial isolated pituitary adenoma

Non-genetic/Environmental

- Somatic *GNAS* mutations (up to 40% of GH-secreting tumors)
- Sporadic pituitary adenomas
- Hypothalamic or ectopic GHRH-secreting tumors
- Late referral patterns or access barriers

GNAS = guanine nucleotide binding protein, alpha stimulating activity polypeptide; GHRH = GH-releasing hormone.

Bogusławska A, et al. *J Clin Med*. 2021;10(7):1377. Sardella C, et al. *Eur J Endocrinol*. 2016;175(5):443-453. Dal J, et al. *Eur J Endocrinol*. 2016;175(3):181-190. Xiao T, et al. *Endocrine*. 2023;82(2):368-378.

CME OUTFITTERS

Burden of Disease

Delayed diagnosis is common, averaging 5.5 years

Nearly 25% of patients experiencing delays of 10 years or more

Delay leads to irreversible complications and increased mortality

Major comorbidities: CVD, diabetes, sleep apnea, arthritis

Psychosocial impacts: depression, stigma, isolation

CVD = cardiovascular disease.

CME OUTFITTERS

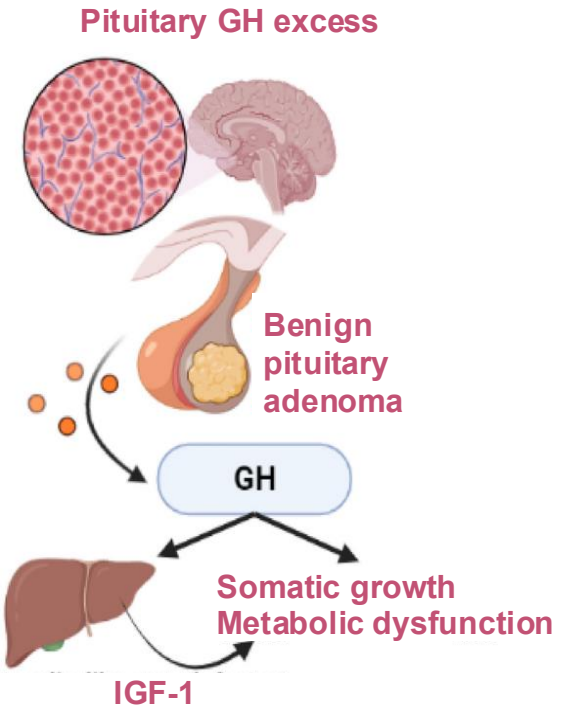
Pathophysiology and Etiology

Central GH Excess: 99% of Cases (pituitary origin)

- Source: GH-producing adenoma, carcinoma, or hyperplasia
- ↑ GH → ↑ IGF-1
- Leads to:
  - Systemic overgrowth
  - Metabolic dysfunction

Ectopic GH/GHRH Excess (<1%)

- Main cause: Tumors outside pituitary gland



Adapted from Alnaaim SA, et al. *Acta Neurol Belg*. 2024;124(3):755-766. Fleseriu, et al. *Lancet Diabetes Endcrinol*. 2022;10(11):804-826.

CME OUTFITTERS

Recognizing the Clinical Signs
Associated Comorbidities

Musculoskeletal/Structural

- Enlarged hands and feet
- Jaw malocclusion/prognathism
- Coarsened facial features
- Macroglossia
- Arthroplasty/joint pain
- Carpal tunnel syndrome
- Enlarged visceral organs (heart/liver)

Acral enlargement

Prognathism

Macroglossia

Enlarged visceral organs (heart, liver)

Dermatologic

- Oily skin
- Excess sweating (hyperhidrosis)
- Skin thickening
- Skin tags
- Arthroplasty/joint pain

Skin tags
Skin thickening
Excess sweating
Oily skin

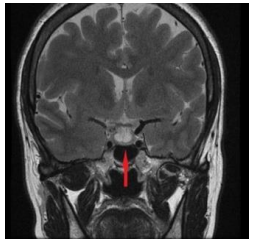
Fleseriu, et al. *Lancet Diabetes Endcrinol*. 2022;10(11):804-826. Katznelson L, et al. *J Clin Endocrinol Metab*. 2014;99(11):3933-3951. Sibeoni J, et al. *Eur J Endocrinol*. 2019;180(6):339-352. Colao A, et al. *Endocr Rev*. 2004;25(1):102-152. Abreu A, et al. *Pituitary*. 2016;19(4):448-457. Lotti F, et al. *J Sex Med*. 2015;12(5):1184-1193.

CME OUTFITTERS

Recognizing the Clinical Signs
Associated Comorbidities

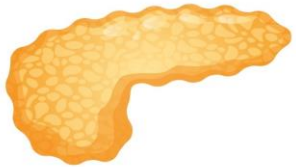
Neurologic/Endocrine
- Headache
- Fatigue
- Menstrual irregularities
- Erectile dysfunction
- Voice deepening

Headache, Fatigue



Respiratory/Sleep
- OSA

Metabolic/Cardiovascular
- Insulin resistance
- Hyperglycemia
- Diabetes mellitus



Oncologic/GI
- Colon polyps

Fleseriu, et al. *Lancet Diabetes Endcrinol*. 2022;10(11):804-826. Katznelson L, et al. *J Clin Endocrinol Metab*. 2014;99(11):3933-3951. Sibeoni J, et al. *Eur J Endocrinol*. 2019;180(6):339-352. Colao A, et al. *Endocr Rev*. 2004;25(1):102-152. Abreu A, et al. *Pituitary*. 2016;19(4):448-457. Lotti F, et al. *J Sex Med*. 2015;12(5):1184-1193.

CME OUTFITTERS

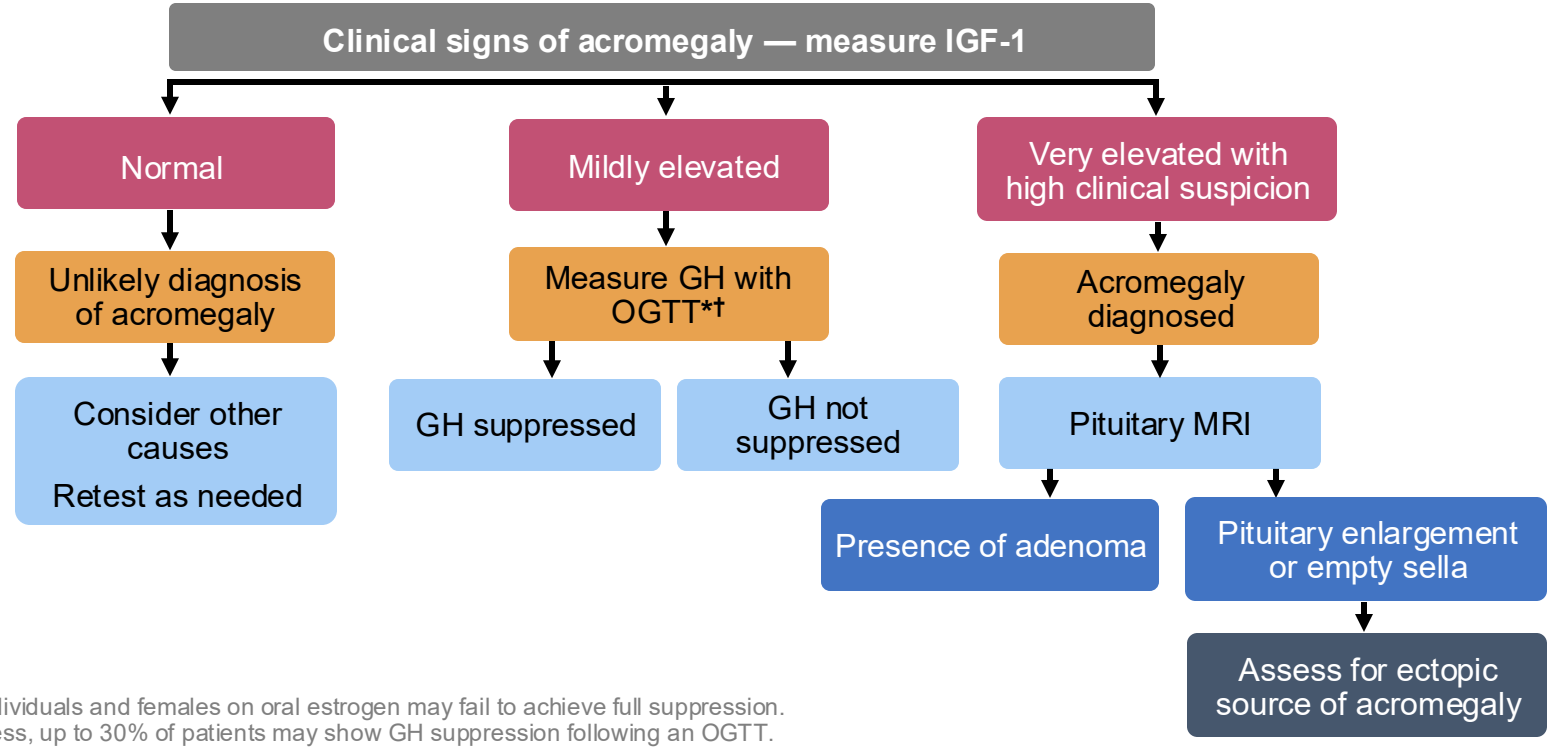
Why Are We Still Missing Acromegaly?

- Hallmark signs often go unnoticed due to insidious onset, but *early recognition can dramatically reduce long-term morbidity*
  - Underrecognized signs: joint pain, fatigue, subtle facial changes
- Delayed diagnosis leads to irreversible complications and increased mortality
- Longer diagnostic delays lead to development of irreversible comorbidities as well as increased mortality
- Slow evolution in diagnostic process

Liu S, et al. *J Investig Med*. 2018;66(3):653-660. Sibeoni J, et al. *Eur J Endocrinol*. 2019;180(6):339-352. Abreu A, et al. *Pituitary*. 2016;19(4):448-457. Clemmons DR. *Clin Chem*. 2011;57(4):555-559. Freda PU, et al. *J Clin Endocrinol Metab*. 2011;96(4):894-904. Schneider HJ, et al. *J Clin Endocrinol Metab*. 2011;96(7):2074-2080.

CME OUTFITTERS

Stepwise Diagnostic Approach



*Lean, healthy individuals and females on oral estrogen may fail to achieve full suppression.
†Despite GH excess, up to 30% of patients may show GH suppression following an OGTT.
MRI = magnetic resonance imaging; OGTT = oral glucose tolerance test.

Adapted from Fleseriu M, et al. *Lancet Diabetes Endocrinol*. 2022;10(11):804-826. Giustina A, et al. *Pituitary*. 2024;27(1):7-22. Katznelson L, et al. *Endocr Pract*. 2011;17(4):636-646. Katznelson L, et al. *J Clin Endocrinol Metab*. 2014;99(11):3933-3951.

CME OUTFITTERS

GH/IGF-1 and OGTT*† Interpretation

Reference Chart

Parameter	Interpretation
IGF-1 >1.3 x ULN (+ typical signs and symptoms of acromegaly)	Confirms diagnosis in presence of symptoms
GH suppression after OGTT <0.4 µg/L	Supports exclusion of acromegaly (BMI <25 kg/m²)
GH suppression after OGTT <0.2 µg/L	Supports exclusion of acromegaly (BMI ≥25 kg/m²)
Estrogen status	May cause GH resistance; pause 4 weeks before OGTT
Assay variability	Consider lab-specific reference ranges

*Lean, healthy individuals and females on oral estrogen may fail to achieve full suppression.
†Despite GH excess, up to 30% of patients may show GH suppression following an OGTT.
BMI = body mass index; ULN = upper limit of normal.

Giustina A, et al. *Pituitary*. 2024;27(1):7-22. Melmed S. *N Engl J Med*. 2020;382(10):937-950. Ribeiro-Oliveira A, et al. *Nat Rev Endocrinol*. 2012;8(10):605-611.

CME OUTFITTERS

Updated Guidelines: Diagnosis

Diagnosis

- IGF-1 >1.3 × ULN (+ typical signs and symptoms of acromegaly)
- GH via OGTT if IGF-1 is equivocal
- Repeat IGF-1 with same validated assay
- MRI to confirm pituitary adenoma
- Check prolactin (PRL) and other hormones in macroadenomas

Giustina A, et al. *Pituitary*. 2024;27(1):7-22. Giustina A, et al. *Rev Endocr Metab Disord*. 2020;21(4):667-678. Fleseriu M, et al. *Pituitary*. 2021;24(1):1-13.

CME OUTFITTERS

Case 1: Undiagnosed, 32-Year-Old Man

- A **32-year-old man** is referred to endocrinology by his primary care practitioner after a dentist noted changes in his jaw alignment during a routine exam
- The patient reports his voice has become deeper over the past year and he has had to upsize his shoes twice in the past 18 months
- He also complains of persistent fatigue and difficulty sleeping

- Progressive **underbite** and **facial changes** noted by others, with **increased shoe and ring size** over the past year
- **Medical history:** Hypertension, type 2 diabetes (2 years), obstructive sleep apnea (on CPAP), left ventricular hypertrophy
- **Physical exam findings:** Skin tags, frontal bossing, prognathism, macroglossia, enlarged hands/feet, thickened skin

- **Prolactin:** 29 ng/mL (reference: 4–15)
- **Total testosterone:** 92 ng/dL (low)
- **LH:** 1.3 IU/L (low)
- **FSH:** 1.6 IU/L (low-normal)

CPAP = continuous positive airway pressure; FSH = follicle-stimulating hormone; LH = luteinizing hormone.

Audience Response

What would be the most appropriate next step in evaluating this patient for suspected acromegaly?

A. Refer directly for transsphenoidal surgery
B. Order a pituitary MRI without contrast
C. Measure random growth hormone level
D. Measure IGF-1 concentration
E. Start octreotide therapy empirically
F. I'm not sure

CME OUTFITTERS

Faculty Discussion

What do these results tell us, and how should we act on them?

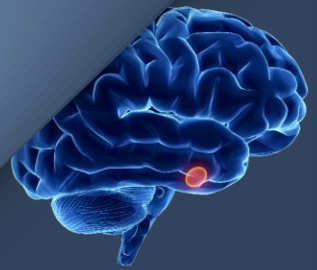
- Patient lab results
  - IGF-1: **782 ng/mL** (ULN: 282)
  - GH: **13.2 ng/mL** (ULN: 10)
- Patient impact
- Importance of guidelines

LEARNING OBJECTIVE 2

Assess the latest efficacy and safety data on current and emerging treatments for acromegaly, including novel oral therapies

Assessing the Landscape of Acromegaly Treatment

Current and Evolving Strategies



Current Management Pathway

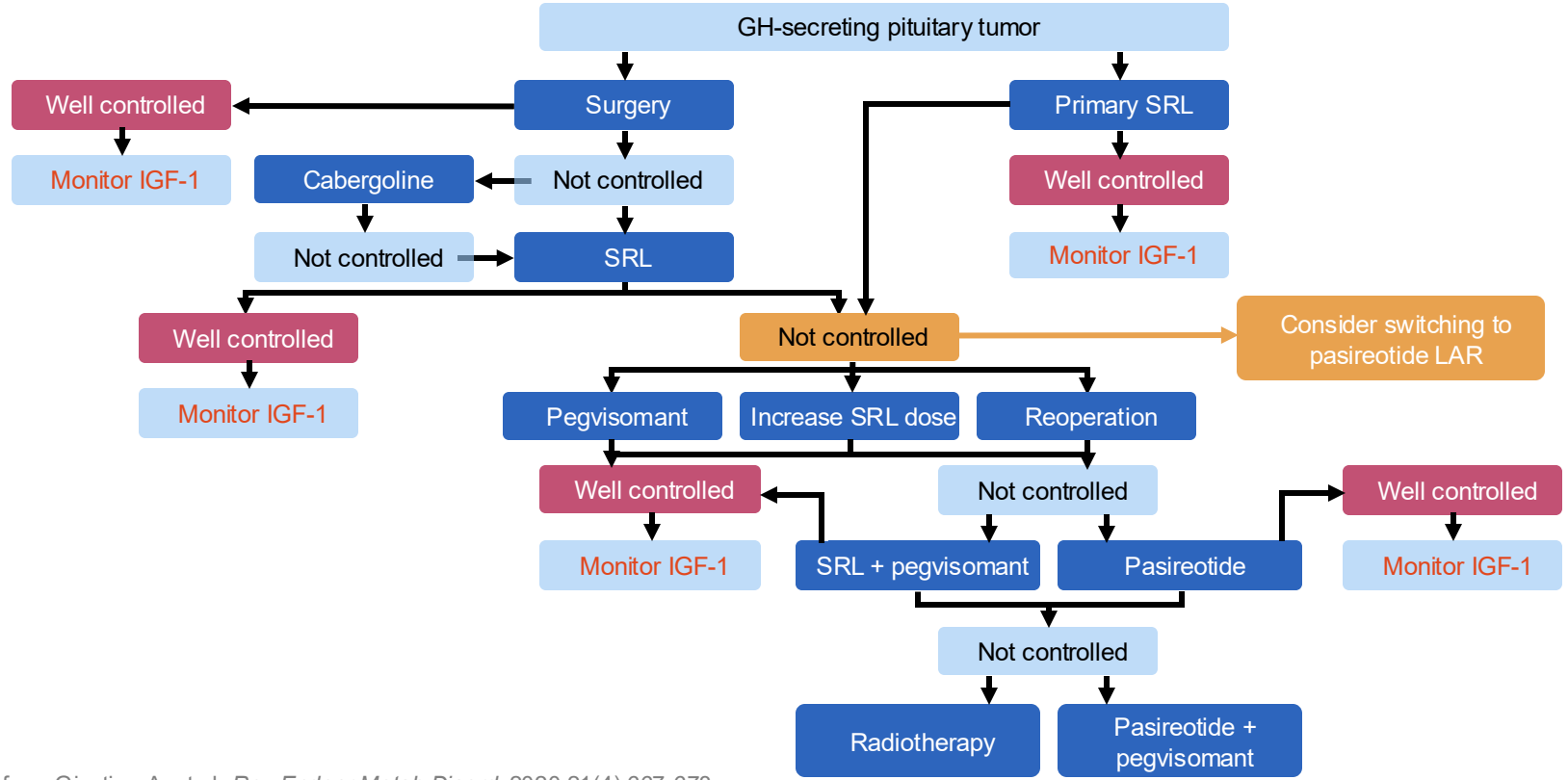
- Transsphenoidal surgery, if the patient is eligible and agrees with surgery
- If residual disease, surgery not feasible, or patient refuses surgery → **medical therapy**:
  - Long-acting somatostatin receptor ligands (SRLs):
    - Octreotide (IM and oral)
    - Lanreotide
    - Pasireotide
  - Dopamine agonist: cabergoline
  - GH receptor antagonist: pegvisomant
  - Radiotherapy
- Personalized therapy selection considers comorbidities, symptom burden, and patient preference

IM = intramuscular.

Katznelson L, et al. *J Clin Endocrinol Metab*. 2014;99(11):3933-3951. Giustina A, et al. *Pituitary*. 2011;14(2):125-133.

CME OUTFITTERS

Treatment Algorithm

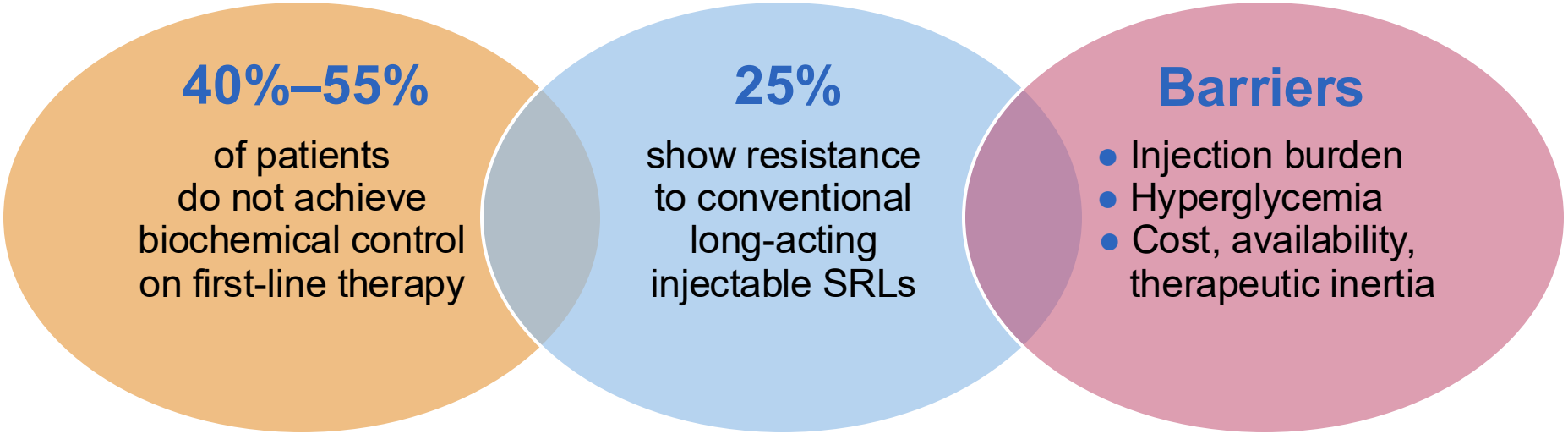


Adapted from Giustina A, et al. *Rev Endocr Metab Disord.* 2020;21(4):667-678.

CME OUTFITTERS

Treatment Gaps in Acromegaly

Challenges in Achieving Biochemical Control



Fleseriu M, et al. *Lancet Diabetes Endocrinol*. 2022;10(11):804-826. Giustina A, et al. *Pituitary*. 2011;14(2):125-133. Bonert V, et al. *J Clin Endocrinol Metab*. 2020;105(9):dgaa444. Antunes X, et al. *Expert Opin Pharmacother*. 2021;22(12):1615-1623. Pirchio R, et al. *Expert Opin Investig Drugs*. 2024;33(5):509-522. Lim DST, Fleseriu M. *Endocr Pract*. 2022;28(3):321-332.

CME OUTFITTERS

Injectable SRLs: Comparison of Key Attributes

Agent	Efficacy (IGF-1 control)	Dosing	Side Effects	Limitations
Octreotide	~55%*	IM every 4 weeks	GI upset, injection site reaction	Injection burden
Lanreotide	~55%*	Deep SC every 4 weeks	Similar to octreotide	Injection burden
Pasireotide	~20-30%†	IM every 4 weeks	↑ hyperglycemia, GI effects, secondary diabetes	Cost, ↑ glucose, requires diabetic prescription

*Verses placebo; treatment-naïve and pretreated patients.
†Efficacy varies by population; PAOLA trial showed 31.3% vs. 19.2% (pasireotide vs. octreotide) in treatment-naïve patients.
GI = gastrointestinal; SC = subcutaneous.

Gadelha MR, et al. *J Clin Endocrinol Metab*. 2022;107(2):297-308. Giustina A, et al. *Rev Endocr Metab Disord*. 2020;21(4):667-678.
Lanreotide [package insert]. https://www.accessdata.fda.gov/drugsatfda_docs/label/2021/215395s000lbl.pdf.
Octreotide delayed-release [package insert]. https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/208232s000lbl.pdf.
Pasireotide [package insert]. https://www.accessdata.fda.gov/drugsatfda_docs/label/2024/203255s011lbl.pdf.

CME OUTFITTERS

Other Medical Therapies: Cabergoline and Pegvisomant – Key Attributes

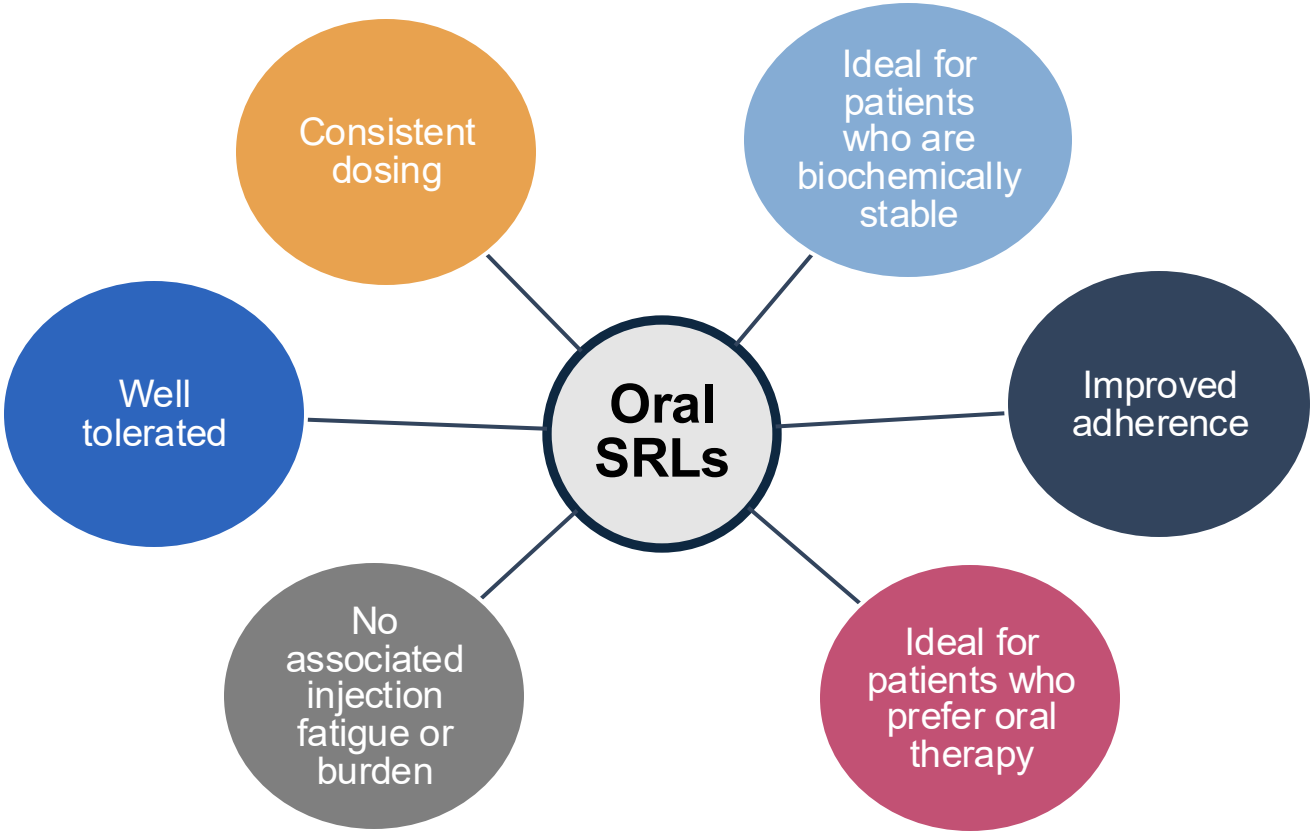
Agent	Efficacy (IGF-1 control)	Dosing	Side Effects	Limitations
Cabergoline	~30% (as monotherapy)	Oral, 0.5–3.5 mg/week	Nausea, dizziness, headache	Less effective as monotherapy
Pegvisomant	>90% in selected patients (monotherapy or combination therapy)	SC daily or weekly (dose-adjusted)	Injection site reaction, transaminase ↑	Requires liver monitoring; does not reduce tumor size

Shimon I. *Best Pract Res Clin Endocrinol Metab*. 2024;38(4):101887. Urwyler SA, et al. *Eur J Endocrinol*. 2024 Jan 17. [Epub ahead of print]. Pirchio R, et al. *J Endocrinol Invest*. 2023;46(5):1027-1038. Feola T, et al. *J Clin Endocrinol Metab*. 2019;104(7):2892-2902.

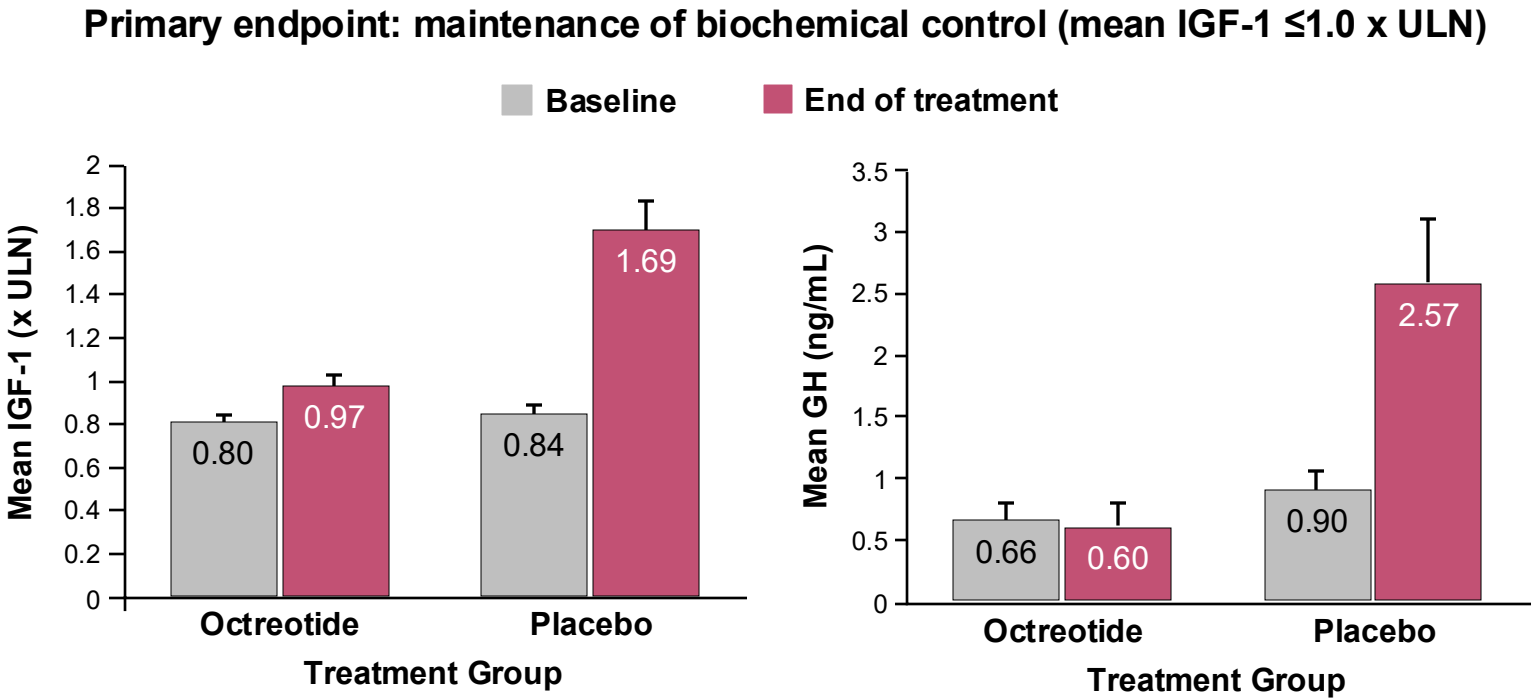
CME OUTFITTERS

Oral SRL Therapies: Rationale and Integration

Emerging Role in Patient-Centered Care



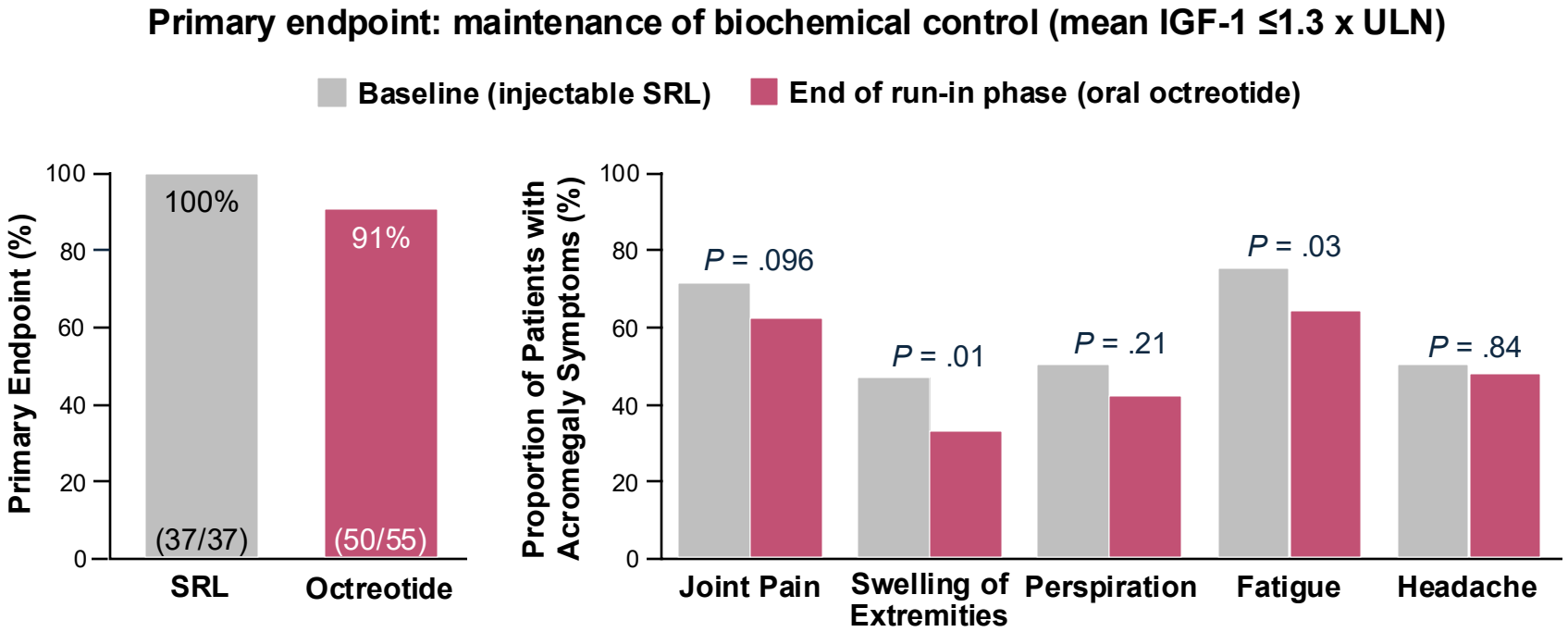
Oral Octreotide: Primary Endpoint from Phase III OPTIMAL



Samson SL, et al. *J Clin Endocrinol Metab*. 2020;105(10):e3785-e3797.

CME OUTFITTERS

Oral Octreotide: Primary Endpoint from Phase III MPOWERED



Uygur MM, et al. *touchREV Endocrinol*. 2024;20(1):37-42. Fleseriu. *Lancet Diabetes Endocrinol*. 2022;10:102.

CME OUTFITTERS

Paltusotine: Primary and Secondary Endpoints from Phase III PATHFNDR-2 Trials

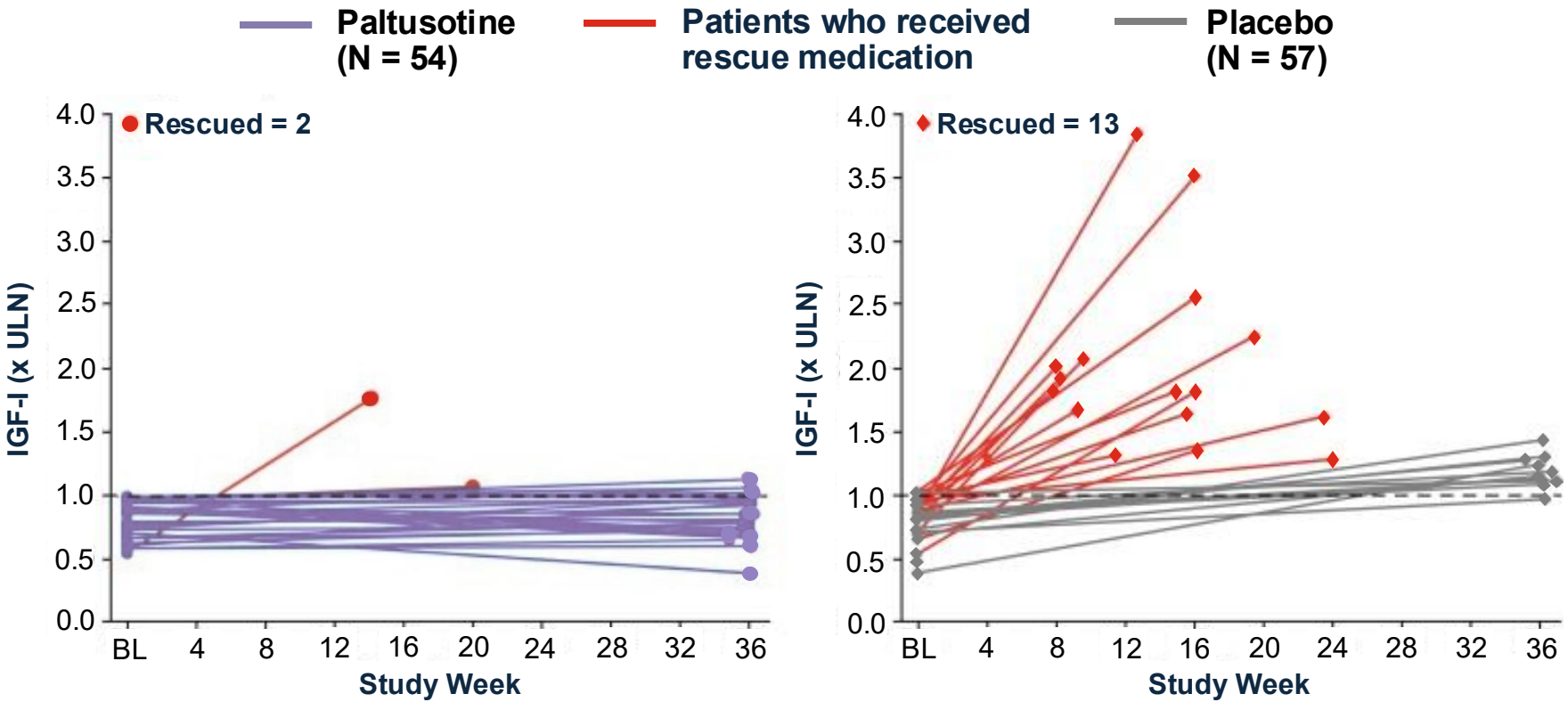
	Paltusotine (n = 54)	Placebo (n = 57)	*P* Value
Primary Endpoint:			
Proportion of participants* who achieved an IGF-1 level of ≤1.0 x ULN, % (n)	56% (30/54)	5% (3/57)	< .0001
Secondary Endpoints:			
Change from baseline in IGF-1 level (x ULN)	-0.82	0.09	< .0001
Proportion of participants who achieved IGF-1 level of <1.3 x ULN at EoR	67%	14%	< .0001
Change from baseline in Acromegaly Symptoms Diary (ASD) total score	-2.67	2.75	.004
Proportion of participants who achieved GH level of <1.0 ng/mL at EoR	57%	18%	< .0001

*Medically untreated patients.
EoR = end of randomized control phase.

Biller BM, et al. *J Endocr Soc*. 2024;8(Suppl 1):bvae163.1201. Gadelha MR, et al. *J Clin Endocrinol Metab*. 2024;110(1):228-237. Gadelha MR, et al. *Endocrine Abstracts*. 2023;94:P399.

CME OUTFITTERS

Paltusotine*: IGF-1 Levels from Phase III PATHFNDR-2



*Paltusotine is not currently FDA-approved for the treatment of acromegaly.
BL = baseline.

Biller BM, et al. *J Endocr Soc*. 2024;8(Suppl 1):bvae163.1201. Gadelha MR, et al. *J Clin Endocrinol Metab*. 2024;110(1):228-237. Gadelha MR, et al. *Endocrine Abstracts*. 2023;94:P399.

CME OUTFITTERS

Safety Profile of Oral SRLs*: Octreotide Capsules and Paltusotine†

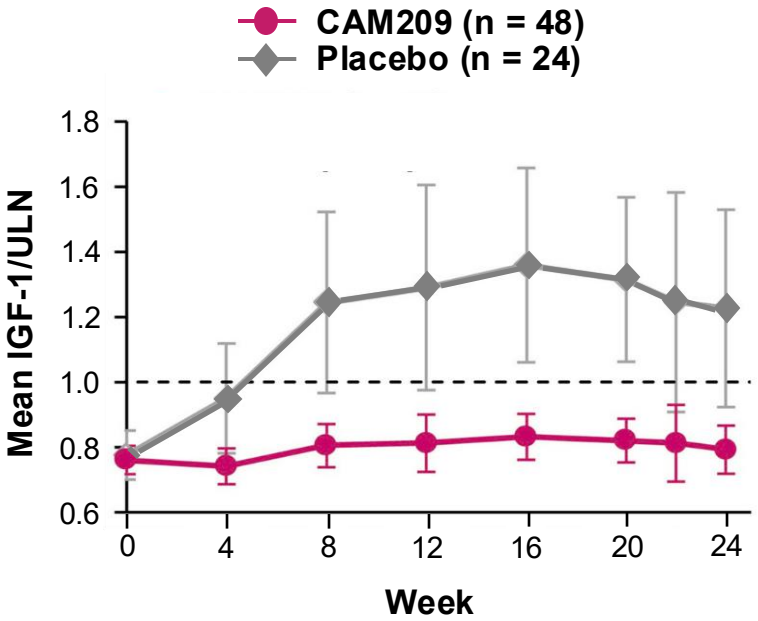
Agent	Most Common AEs	Serious AEs	Discontinuation Rate	Notable Considerations
Oral Octreotide	Nausea, diarrhea, abdominal pain, headache	Rare	~10–15% in trials	AE profile similar to injectable SRL; no injection site issues
Paltusotine (investigational)	GI effects (mild nausea, diarrhea), fatigue	None reported in Phase II–III	~5–7% in trials	Well tolerated overall; no hyperglycemia seen in PATHFNDR-1

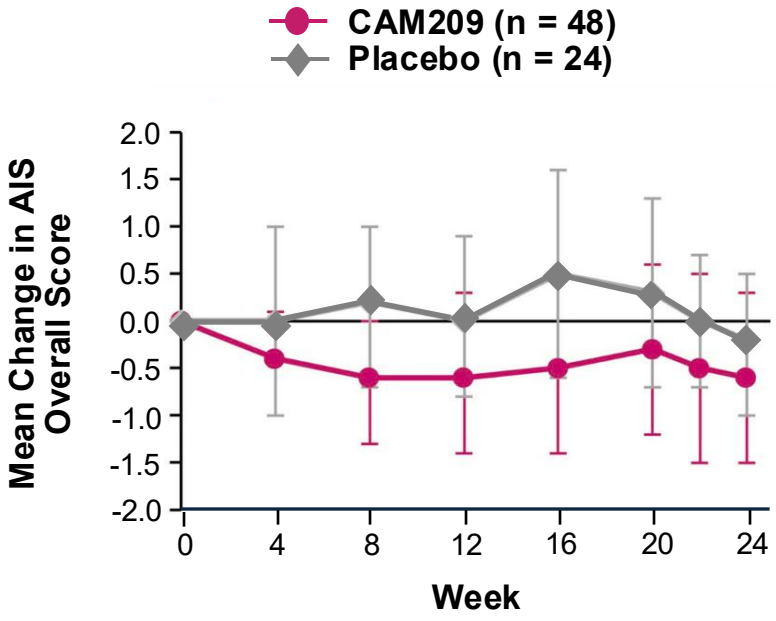
*Not a direct comparison.
†Paltusotine is not currently FDA-approved for the treatment of acromegaly.
AE = adverse event.

Remba-Shapiro I, et al. *Best Pract Res Clin Endocrinol Metab*. 2024;38(4):101888. Biller BM, et al. *J Endocr Soc*. 2024;8(Suppl 1):bvae163.1201. Gadelha MR, et al. *J Clin Endocrinol Metab*. 2024;110(1):228-237. Gadelha MR, et al. *Endocrine Abstracts*. 2023;94:P399. Uygur MM, et al. *touchREV Endocrinol*. 2024;20(1):37-42. Fleseriu M, et al. Endocrine Society (ENDO) Annual Meeting; 2024. Abstract No. MON-124.

CME OUTFITTERS

CAM2029*: Monthly SC Octreotide, Phase III Trial, ACROINNOVA 1





*Not currently FDA-approved for the treatment of acromegaly.
AIS = Acromegaly Index of Severity.
Ferone D, et al. *J Clin Endocrinol Metab*. 2024 Oct 8. [Epub ahead of print].

CME OUTFITTERS

Current Guideline Strategies to Overcome SRL Resistance: Individualized Combinations

Use pegvisomant in patients who fail to achieve control on first- or second-generation SRLs

Add cabergoline in patients not adequately controlled on first-line therapy

Consider combination therapy options:

- SRL + pegvisomant (e.g., in diabetes or tumor progression)
- SRL + cabergoline (for partial IGF-1 suppression)

Pasireotide may be effective in patients resistant to octreotide/lanreotide but requires glucose monitoring

Oral SRLs may be considered for patients with biochemical control on injectables who experience injection fatigue or adherence issues, though these are not currently used to overcome SRL resistance

Giustina A, et al. *Rev Endocr Metab Disord*. 2020;21(4):667-678. Fleseriu M, et al. *Lancet Diabetes Endocrinol*. 2022;10(11):804-826. Giustina A, et al. *Pituitary*. 2011;14(2):125-133. Bonert V, et al. *J Clin Endocrinol Metab*. 2020;105(9):dgaa444. Antunes X, et al. *Expert Opin Pharmacother*. 2021;22(12):1615-1623. Pirchio R, et al. *Expert Opin Investig Drugs*. 2024;33(5):509-522. Lim DST, Fleseriu M. *Endocr Pract*. 2022;28(3):321-332. Grasso LFS, et al. *Expert Opin Investig Drugs*. 2013;22(8):955-963. Remba-Shapiro I, et al. *Best Pract Res Clin Endocrinol Metab*. 2024;38(4):101888. Biller BM, et al. *J Endocr Soc*. 2024;8(Suppl 1):bvae163.1201. Gadelha MR, et al. *Endocrine Abstracts*. 2023;94:P399.

CME OUTFITTERS

Updated Guidelines

Diagnosis

- IGF-1 >1.3 × ULN (+ typical signs and symptoms of acromegaly)
- GH via OGTT if IGF-1 is equivocal
- Repeat IGF-1 with same validated assay
- MRI to confirm pituitary adenoma
- Check PRL and other hormones in macroadenomas

Treatment

- Surgery remains first line if the patient is eligible and agrees with surgery
- Long-acting SRLs = standard therapy
  - Octreotide
  - Lanreotide
  - Pasireotide
- Oral octreotide for long-term maintenance in patients who have responded to and tolerated octreotide or lanreotide
- Pegvisomant
- Cabergoline for mild disease or PRL co-secretion

Giustina A, et al. *Pituitary*. 2024;27(1):7-22. Giustina A, et al. *Rev Endocr Metab Disord*. 2020;21(4):667-678. Fleseriu M, et al. *Pituitary*. 2021;24(1):1-13.

Case 2: Selection of Therapy for 45-Year-Old Woman

- A **45-year-old woman** with confirmed acromegaly presents for follow-up
- Underwent transsphenoidal surgery 2 years ago for a macroadenoma but had **incomplete biochemical remission**
- Was initiated on long-acting **lanreotide** 90 mg every 4 weeks

- Reports **persistent fatigue**, **joint pain**, and **facial swelling**
- Complains about **injection discomfort** and **increased injection-site reactions**
- Admits occasionally **delaying injections** due to work-related travel
- **Comorbidities:** Type 2 diabetes (well controlled), osteoarthritis

- **IGF-1:** 397 ng/mL (ULN: 280)
- **GH (random):** 3.6 ng/mL
- MRI: **stable residual adenoma**, no optic involvement
- HbA1c: 6.5%
- LFTs: Normal

LFTs = liver function tests.

Audience Response

A 45-year-old woman with partial biochemical control on lanreotide reports fatigue and breakthrough symptoms. What is the most appropriate next step?

A. Switch to pasireotide
B. Add cabergoline
C. Increase lanreotide dose
D. Add pegvisomant
E. Switch to oral therapy
F. I’m not sure

CME OUTFITTERS

Faculty Discussion

How do we balance clinical targets with patient needs?

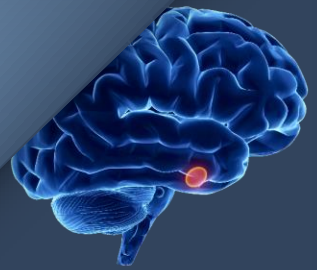
- Clinical considerations
- Patient perspective
- Personalized care

LEARNING OBJECTIVE 3

Incorporate factors including patient preferences, comorbidities, and potential barriers to adherence as part of individualized care planning to optimize long-term management of acromegaly

Putting the Patient at the Center of Care

Individualized Long-term Management of Acromegaly



Quality of Life and Adherence Challenges

- Quality of life in acromegaly is often compromised due to fatigue, sleep apnea, and body image concerns

Domain	Issues Commonly Reported
Physical	Joint pain, fatigue, headaches, sleep apnea, soft tissue swelling
Psychological	Depression, anxiety, body image issues
Cognitive	Poor concentration, memory complaints
Social/relational	Work impairment, stigma, relationship strain
Sexual health	Libido changes, reproductive issues
Functional	Loss of independence, difficulty with daily tasks

Katznelson L, et al. J *Clin Endocrinol Metab*. 2014;99(11):3933-3951. Colao A, et al. *Endocr Rev*. 2004;25(1):102-152. Abreu A, et al. *Pituitary*. 2016;19(4):448-457. Reid TJ, et al. *Clin Endocrinol (Oxf)*. 2010;72(2):203-208. Fleseriu M, et al. *Lancet Diabetes Endocr*inol. 2022;10(11):804-826. Sibeoni J, et al. *Eur J Endocrinol*. 2019;180(6):339-352. Lotti F, et al. *J Sex Med*. 2015;12(5):1184-1193. Siegel S, et al. *Pituitary*. 2013;16(4):507-514. Szcześniak D, et al. *Adv Clin Exp Med*. 2015;24(1):167-172.

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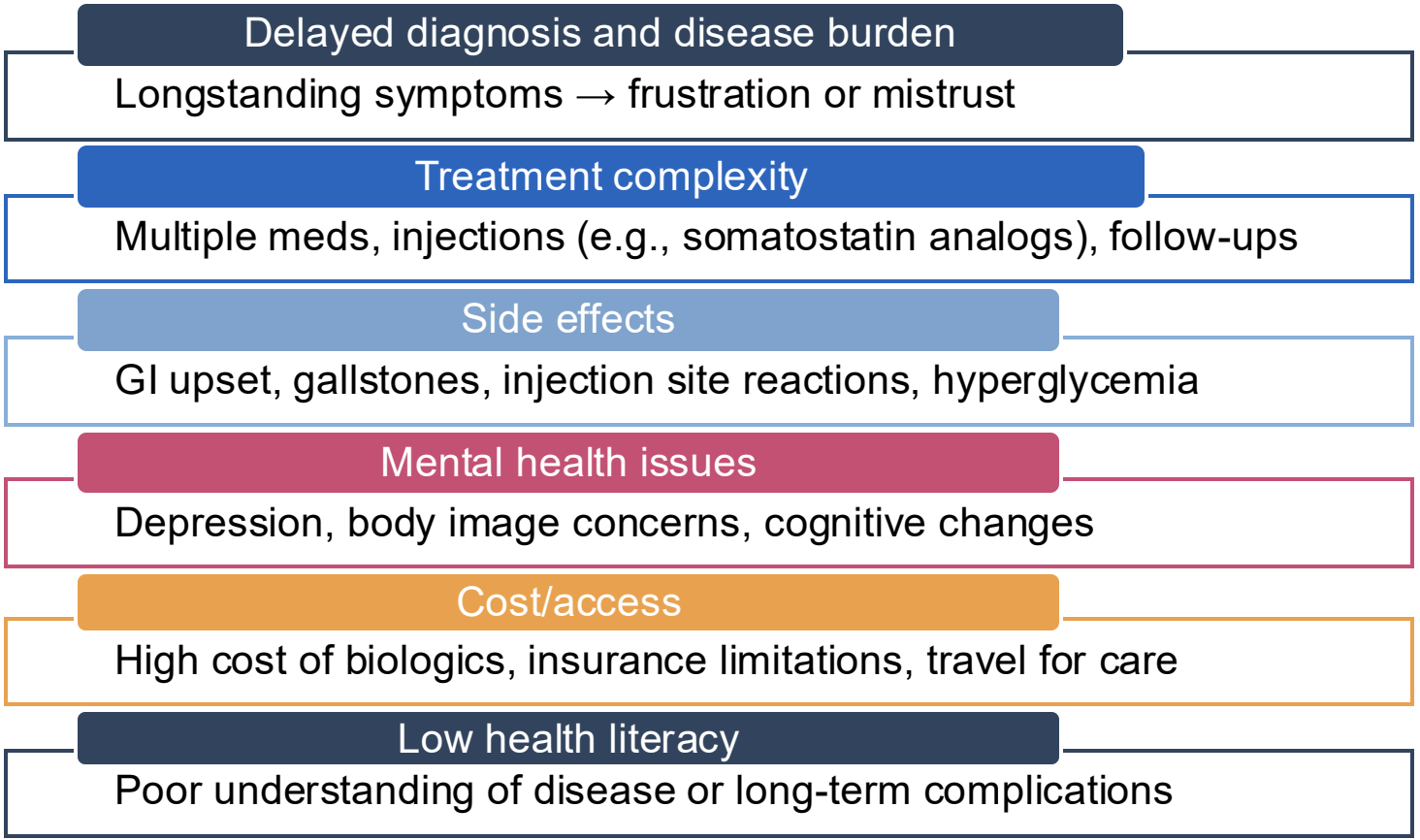
Adherence Challenges



Esposito D, et al. *Eur J Endocrinol*. 2020;182(6):523-531. Abreu A, et al. *Pituitary*. 2016;19(4):448-457. Rajasoorya C, et al. *Clin Endocrinol (Oxf)*. 1994;41(1):95-102. Reid TJ, et al. *Clin Endocrinol (Oxf)*. 2010;72(2):203-208.

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Strategies for Patient Adherence

Build a Strong Therapeutic Alliance	• Consistent communication with shared decision-making fosters trust; involve patients in selecting their treatment modality
Patient Education	• Explain the chronic nature of the disease and the role of GH/IGF-1 in symptoms and long-term risks; visual aids, support groups, and written handouts improve understanding
Simplify When Possible	• Coordinate labs and imaging to reduce the number of visits
Psychosocial and Emotional Support	• Screen regularly for depression and anxiety; refer to mental health professionals for support or cognitive behavior therapy
Use of Technology	• Medication reminders, telehealth visits, patient portals to track lab values, appointment and notes
Multidisciplinary Care Coordination	• Involve a care team that reinforces consistent messaging and support

Monostra M. Healio Website. 2022. https://www.healio.com/news/endocrinology/20220401/adults-with-acromegaly-have-more-comorbidities-prescribed-more-concomitant-medications.

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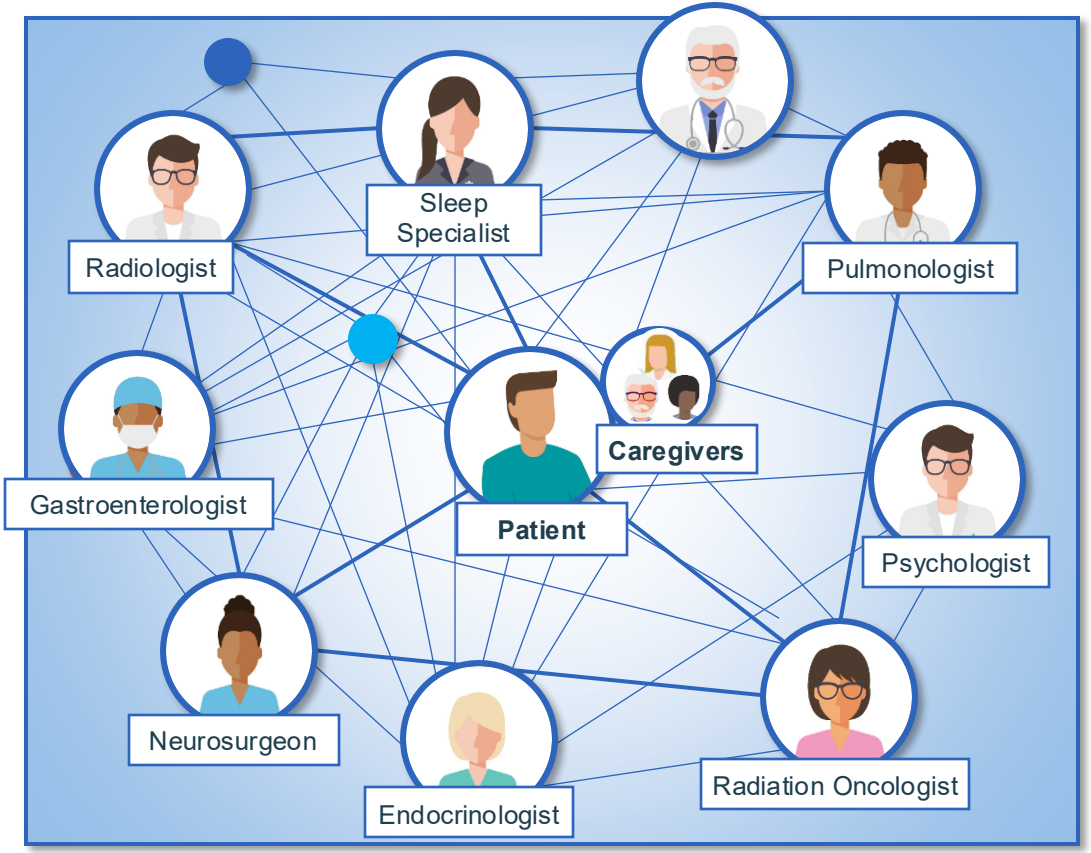
Team-based Approach for the Management of Acromegaly



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Long-term Management

- Screen for CV, metabolic, and sleep comorbidities
- Engage patients in shared decisions
- Consider barriers to adherence
- Multidisciplinary care emphasized

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Case 3: Long-term Management of 52-Year-Old Man

- A **52-year-old man** with a history of acromegaly, previously treated with transsphenoidal surgery, has been on **long-acting octreotide (30 mg IM every 4 weeks)** for 2 years
- Biochemical markers have been within target range for the last 9 months

- Complains of **severe fatigue**, **low motivation**, and **persistent sleep issues**
- Reports **missing 2 of his last 6 injections** due to transportation issues and schedule conflicts
- Recently began experiencing symptoms of **low mood**, reduced libido, and **difficulty focusing**
- States he is **"tired of the whole routine"** and feels "discouraged"
- Lives in a rural area with **limited access to endocrinology**; relies on a primary care practitioner and occasional telehealth consults
- Denies joint pain or vision changes
- **Medical history:** Mild depression, controlled hypertension, borderline HbA1c

- **IGF-1:** 267 ng/mL (ULN: 275)
- **GH (random):** 0.9 ng/mL
- MRI: Stable post-op changes, no progression
- PHQ-9: Moderate depressive symptoms
- **TSH and testosterone:** Low-normal
- **Sleep study:** Ongoing moderate OSA

CME OUTFITTERS

Audience Response

Which multidisciplinary approach would most appropriately address this patient's ongoing burden despite biochemical control?

A. Refer for pituitary re-imaging
B. Increase SRL dose
C. Add pegvisomant
D. Involve primary care, behavioral health, and sleep medicine
E. Switch to oral SRL therapy
F. I'm not sure

CME OUTFITTERS

Faculty Discussion

What does success look like beyond biochemical control?

- Biochemical control ≠ clinical resolution
- Why a multidisciplinary team is essential
- Patient voice as a metric of success

Put information into action!

Takeaways from this program can be implemented into your practice to improve patient care.

- In patients with suggestive phenotypes for acromegaly, screen for IGF-1
- Evaluate new oral therapies for patients dissatisfied with injectable SRLs
- Engage patients in shared decision-making to personalize treatment plans
- Coordinate care across specialties to manage comorbidities

QUESTIONS & ANSWERS

Thank you for joining us.
Don’t forget to collect your credit.

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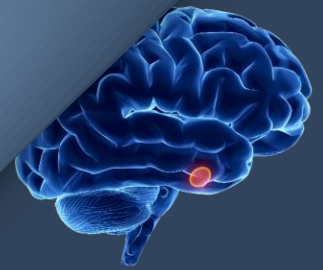
https://www.cmeoutfitters.com/practice/virtual-education-hub/



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How to Claim This Activity as a CME for MIPS Improvement Activity

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- Over the next 3 months, actively work to incorporate improvements from this presentation into your clinical practice
- In approximately 3 months, complete the follow-up survey from CME Outfitters

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SEEING THE UNSEEN

Early Recognition and Individualized Management of Acromegaly

This program is supported by an educational grant from Crinetics Pharmaceuticals.