Biochemical assessment of disease control in acromegaly: Reappraisal of the glucose suppression test in Somatostatin Analoque (SA) treated patients

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OBJECTIVES

The nadir serum growth hormone (GH) level during glucose suppression (OGTT) is recommended in patients treated by surgery, but not during SA treatment[1]. We have shown that patients considered controlled by SA don't suppress serum GH during OGTT and have impaired disease-specific QoL as compared to patients controlled by surgery[2].

We hypothesize that SA treated patients also don't suppress GH in response to mixed meals.

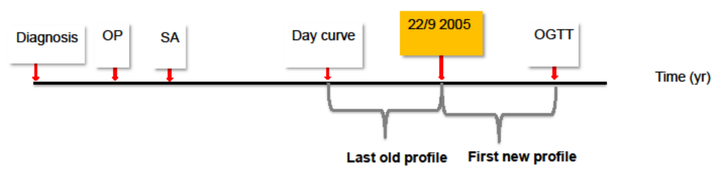
Aim

To compare growth hormon levels during two mixed meals in patients considered controlled by either surgery alone or SA

METHODS

Patients controlled by surgery alone (n=23) or SA (n=10) for ≥ 12 months were studied twice in the following order:

1. During a 6 hour (8-14h) GH profile including two standardized mixed meals
2. During a 3 hour GH profile including an oral glucose load at t=9h

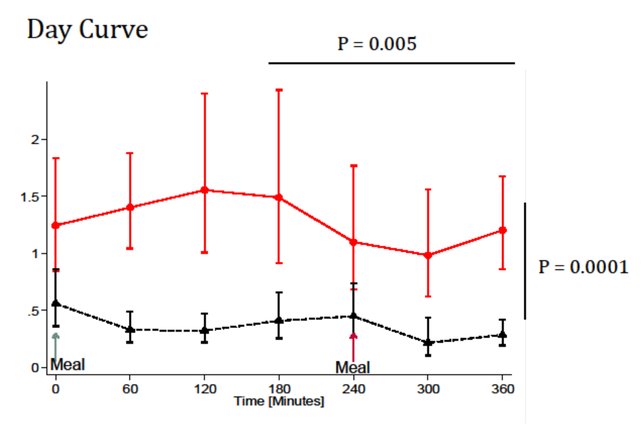


RESULTS

Time of diagnosis	SA	Surgery	P- value
Number	10	23	
Age, years	47 (31-64)	48 (27-68)	0.9
Sex (f/m)	5/5	11/12	0.6
IGF-1 (µg/l)	780.6 (563-1083)	734.7 (631-856)	0.7
GH, nadir (µg/l)	9.85 (3.29-29.5)	7.18 (4.78-10.8)	0.6

- The two groups were comparable at time of diagnosis as regards age, sex, GH and IGF-I levels.
- At study start the two groups had comparable IGF-1 levels (p=0.14).

RESULTS



- There was significant difference in GH levels between the two groups on the GH day curve profile, wheras meal suppression was recorded only in the surgery group.
- During the OGTT the GH levels became suppressed only in the surgery group.

CONCLUSIONS

1.Patients controlled by SA do not suppress GH in response to either OGTT or mixed meals.
2.This implies relatively elevated GH levels during everyday life in SA patients.
3.We recommend that SA patients are assessed with GH measurements during an OGTT and hypothesize that this will reveal under-treatment in a substantial proportion of patients.

REFERENCES

[1] Katznelson, L., et al., *Acromegaly: an endocrine society clinical practice guideline.* J Clin Endocrinol Metab, 2014. **99**(11): p. 3933-51.

[2] Rubeck, K.Z., et al., *Conventional and novel biomarkers of treatment outcome in patients with acromegaly: discordant results after somatostatin analog treatment compared with surgery.* Eur J Endocrinol, 2010. **163**(5): p. 717-26.

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