

# GH TREATMENT AND FIRST YEAR RESPONSE

## A RETROSPECTIVE STUDY

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### BACKGROUND

Growth hormone (GH) treatment is proven to increase adult final height in some pathology and first year response is assumed as an index of treatment's effectiveness. In Portugal GH treatment is approved for patients with GH deficiency (GHD), Chronic Kidney Disease, Turner Syndrome (TS), Small for Gestational Age (SGA) and Prader Willi Syndrome.

### OBJECTIVE AND HYPOTHESES

Identify the prevalence of each indication in children treated with GH in our hospital and evaluate the first year response to treatment.

### METHODS

We retrospectively analysed the files of 30 patients followed for short stature and on GH treatment. WHO Growth Charts data were used. For statistic analysis we used SPSS v21.

### RESULTS

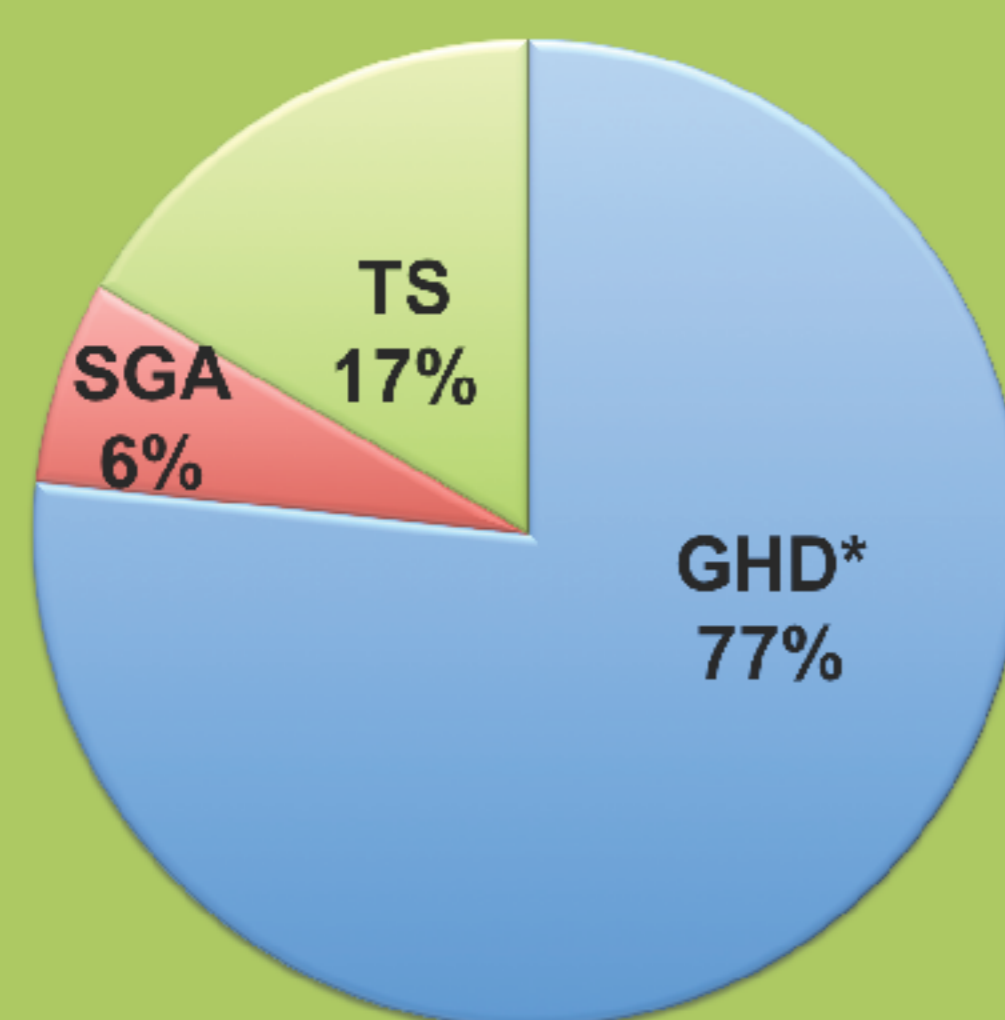
#### PATIENTS' CHARACTERIZATION

<b>N</b>	30
<b>Gender</b>	
Male	13 (43.3%)
Female	17 (56.7%)
<b>Age on referenciation (years)</b>	8.23 ± 3.26
<b>Age when started on GH (years)</b>	9.57 ± 3.23

#### GH DEFICIENCY AND SMALL FOR GESTACIONAL AGE

	Before GH treatment			After GH treatment	
	Height SD	BMI SD	Age - Bone age (y)	Height SD	BMI SD
Mean	- 2.76	- 0.418	1.8	- 2.15	- 0.32
SD	0.9	2.23	1.01	0.85	1.22
Min	- 5.08	- 8.0	0	- 4.86	- 3.32
Max	- 1.02	3.2	4.0	- 0.59	2.53

#### INDICATIONS FOR GH TREATMENT



\*In the GHD group one patient has pituitary hypoplasia, one septo optic dysplasia and one structural anomalies

	<i>p</i>
Δ Height SD	0.001 *
Δ BMI SD	0.003 *
Δ Height SD * age when started GH	0.328
Δ Height SD * Clonidine test	0.272
Δ Height SD * L-Dopa test	0.247

#### GH STIMULATION TESTS

	Clonidine	L-Dopa	Hypoglycaemia
<b>N</b>	24	20	3
<b>GH peak (ng/ml)</b>	5.83 ± 3.64	3.7 ± 1.94	7.53 ± 3.53

#### TURNER SYNDROME

	Before GH treatment			After GH treatment	
	Height SD	BMI SD	Age - Bone age (y)	Height SD	BMI SD
Mean	- 3.12	- 1.2	1.6	- 2.36	- 0.7
SD	0.8	0.66	1.01	0.75	0.25
Min	- 4.24	- 3.29	0.3	- 3.29	- 3.32
Max	- 2.29	- 1.51	3	- 1.5	- 0.36

	<i>p</i>
Δ Height SD	0,003*
Δ BMI SD	0,818

### CONCLUSIONS

In our population GH deficiency was the main indication for GH treatment followed by Turner Syndrome. The first year response to treatment was good with a statistical difference in height in all patients. We didn't find any correlation between first year "delta" height variation and the age when patients started on GH therapy or with GH stimulation tests. First year response is established as a good marker for patients' response to GH treatment but a follow-up study is important to evaluate patients' final stature.

