Final Height (FH) in patients with and without pituitary abnormalities detected by MRI and/or CT treated with Growth Hormone (GH)

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**BACKGROUND**

Growth hormone deficiency (GHD) occurs due to different etiologies, morphological abnormalities in pituitary, or mutations leading the individual to lose the genetic growth potential. The pituitary dysfunction can be as GHD alone or associated with other hormone deficiencies. Patients with abnormalities in pituitary may present a greater height loss than others and couldn’t reach the target height according to final height (FH).

**OBJECTIVES**

To correlate H-SDS at diagnosis, with Final Height (FH)-SDS and Target height (TH)-SDS of the patients treated with GH who reached FH. To compare the gain of height until FH in patients with and without pituitary abnormalities changes detected by MRI and/or CT treated with GH.

**METHODS**

Were analysed medical records of patients, treated with growth hormone, who reached FH (growth velocity below 1cm/y, and/or bone age >17y for boys and >16y for girls), in the period 1993-2014 at a single service. MRI or CT were analyzed in all patients. Sample of T4f, TSH, LH, FSH, Cortisol were also analyzed. Were obtained H-SDS at diagnosis, FH-SDS, and ΔH-SDS and made comparison between patients with and without pituitary abnormalities detected by MRI/CT. Were compared H-SDS and FH-SDS with TH-SDS in all patients.

**RESULTS**

Were evaluated 34 patients who reached FH, 18 male. Time of treatment 3.94y (0.33-14). Nine patients with pituitary abnormalities: pituitary hypoplasia in 9, empty sella in 2 and ectopic neurohypophysis in 3. At diagnosis they average age were 11.39y (4.16-15.66) and at FH 17.75y (14-21.08).

**DISCUSSION**

Treatment with GH, enhances the growth rate and FH in children with GHD. This sample assured the need for treatment and the gain stature in patients with GHD in relation to TH. When comparing the groups with and without pituitary abnormalities, revealed that patients with pituitary abnormalities have a loss of stature much more important. Until FH, the group with pituitary abnormalities, got a higher growth (ΔH-SDS), but the comparison between FH-SDS in groups showed no significant difference. Studies show that the average time of treatment needed to obtain an increase of 3.5 to 7.5 cm at FH is 4 to 7 years. In this sample, the average duration of treatment with GH was 3.94 years.

**CONCLUSION**

There was a significant difference in H-SDS at diagnosis in patients with GHD compared with FH-SDS and TH-SDS. Patients with pituitary abnormalities had H-SDS lower than patients without pituitary abnormalities at diagnosis, but no difference were found in FH-SDS after treatment. During treatment, the ΔH-SDS in patients with pituitary abnormalities was biggest. All patients reached FH according target height after treatment with GH.

**REFERENCES**