GROWTH HORMONE DEFICIENCY PERSISTENCE DURING THE TRANSITION PERIOD BETWEEN CHILDHOOD AND ADULTHOOD IN PATIENTS WITH CHILDHOOD ONSET GROWTH HORMONE DEFICIENCY TREATED WITH rhGH – PRELIMINARY DATA
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Background: Transition is a period from mid – to late teens until 6-7 years after achievement of final height. More than two thirds of teenagers with childhood-onset GH deficiency (CO-GHD) documented normal GH response when retested at final height; possible causes for the normal response to GH stimulation tests in the transition period are: 1) transient GHD in childhood; 2) lack of reproducibility of GH stimulation tests; 3) sex steroid- mediated maturation changes in hypothalamic control of GH secretion during puberty.

Objective: to identify potential predictors for persistent GHD after reaching final height under rhGH with a particular accent on children with isolated GHD (IGHD).

Methods: Prospective study started last year- reevaluation CO-GHD in the transition period; cohort of 27 CO-GHD patient who received rhHG and reached final height; cohort has 20 boys (74%) and 7 girls aged 14-20 years, the mean duration of therapy = 7.06 years (3 to 12.4 years); average time to cessation of therapy = 1.63 years (0.3 to 5.4 years); anthropometric parameters (Height Z score, BMI, target height (TH)) were analyzed; Retest –GH in insulin tolerance test (ITT), adenosine phosphate functions, IGF-I levels. The main outcome measures were sensitivity, specificity, positive and negative predictive values (PPV/NPV) of clinical and hormonal factors for persistent GHD (IGHD-P) defined as peak GH < 5 ng/ml.

Results:

- Cohort features:
  - 60% of patients are isolated GHD, 40% are multiple pituitary deficiency (MPD); boys accounted for 74% of all patients

- Characteristics of patients with isolated GHD (IGHD):
  - 32% of IGHD are persistent GHD (IGHD-P) (peak GH in ITT< 5ng/ml) and 68% are reversible IGHD (IGHD-R) (peak GH in ITT > 5 ng/ml)

- Predictive value for persistent GH deficiency - association with other pituitary deficits:
  - Presence of ≥ 1 additional pituitary hormone deficiency predict 100% persistent GHD status at reevaluation

- Cut-off values of IGF1 (SD) for differentiating patients with persistent GHD on reevaluation:

Factors predicting the persistence of GHD after final height achievement:

- In transition - GH-IGF1 status reassessment is required to detect cases requiring further treatment with rhGH- replacement doses;
- Approximately one third of IGHD patients - have persistent GH deficiency after final height achievement;
- GH peak in ITT value ≤ 3 ng / ml at initial diagnosis – 100% positive predictive value - status of persistent IGHD;
- IGF1 value < -1.5 SD at reevaluation requires retesting all pituitary axes given that the combination of additional pituitary deficiency can occur gradually;
- IGF1 ≤ -2.5 SD at reevaluation - oriented the diagnosis of MPD with 100% specificity in selecting the cases that do not require dynamic tests

CONCLUSIONS