CURRENT PRACTICE IN DIAGNOSIS AND TREATMENT OF GROWTH HORMONE DEFICIENCY IN CHILDHOOD: A SURVEY FROM TURKEY

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Background: Diagnosis and treatment of growth hormone deficiency (GHD) in children are different between countries, and even among centers in the same country. .

Aims and Objectives: To evaluate current practices in diagnosis and treatment of GHD in the process of preparing the new consensus on GHD by Turkish Society for Pediatric Endocrinology and Diabetes.

Methods: A questionnaire was sent out via internet to all pediatric endocrinology centers (n=44). Each center has at least a pediatric endocrinologist who has completed the fellowship and certified. There were two general sections in the questionnaire, first part relating to diagnosis and second part to treatment of GHD in childhood. The contents of the questionnaire are shown in Table 1. Each question could be answered by choosing several predefined options or if not suitable by a comment. Data were reported as percentage of respondents.

Results: Twenty four centers returned the questionnaire.

- **The diagnosis of GHD was always confirmed by two growth hormone (GH) stimulation tests by all of the respondents. The most frequently used growth hormone (GH) stimulation test was L-dopa and second one was clonidine.**
- **Eighteen centers used a cut-off value of GH of 10 ng/ml, 4 centers 7 ng/ml, and two centers 5 ng/ml for the diagnosis of GHD.**
- **The most frequently used assay was immunochemiluminescent for GH, IGF-1 and IGFBP-3.**
- **Sex steroid priming in both sexes was used by 19 centers.**
- **The most frequently used starting dose in prepubertal children was 0.025-0.030 mg/kg/day and 0.030-0.035 mg/kg/day in pubertal children.**
- **Growth velocity was used in the evaluation for growth response to recombinant human GH (rhGH) therapy in all centers.**
- **Anthropometric measurements of patients every 3-6 months, fasting blood glucose, bone age and thyroid panel evaluation were used by all centers at follow-up.**
- **Therapy was stopped primarily according to decreased height velocity and advanced bone age.**
- **Fourteen centers used combined treatment (rhGH and gonadotropin releasing analogues) to increase final height by delaying puberty and slowing bone maturation in girls entering into normally timed puberty and 7 centers (29.2%) used aromatase inhibitors in boys with normally timed puberty.**
- **The period between the end of the tumor therapy and the initiation of rhGH therapy was most frequently 2 years in craniopharyngioma (54.2%). It was 6 months in 4 centers, 1 year in 6 centers and 3 years in 1 center. The period was similar for craniopharyngioma and other malignancies.**
- **The most common side effects during rhGH treatment were benign intracranial hypertension and slipped capital femoral epiphysis.**

Table 1. Questions asked in the questionnaire on diagnosis and treatment of Childhood GHD among Turkish pediatric endocrinologist.

1. How many children do you diagnose as GHD per year?
2. Which stimulation test do you use as first choice?
3. Which stimulation test do you use as second test?
4. During GH stimulation testing, what cutoff value do you use to
5. distinguish between GHD and normal?
6. Which GH assay do you use?
7. Which brand of assay for GH do you use?
8. Which IGF-1 assay do you use?
9. Which brand of assay for IGF-1 do you use?
10. Which IGFBP-3 assay do you use?
11. Which brand of assay for IGFBP-3 do you use
12. Do you use sex steroid priming?
13. If yes, from what age? And how do you prime?
14. What cutoff value do you use to measure spontaneous GH secretion in newborn period?
15. What other examinations do you routinely perform in children
16. suspected of having GHD?
17. What starting dose do you use in GHD children?
18. How do you adjust the recombinant human growth hormone (rhGH) dose during treatment?
19. How do you monitor treatment each visit?
20. (table to be filled in)
21. When do you stop rhGH treatment?
22. Do you use any therapy to delay puberty during rhGH therapy?
23. When do you induce puberty in boys and girls with hypogonadotropic hypogonadism?
24. When do you start rhGH treatment in patients with idiopathic GHD?
25. What is the period between the end of the tumor therapy and the initiation of GH therapy in craniopharyngioma and other malignancies?
26. Which side effects did you experience during rhGH treatment?

CONCLUSION

- **Conformity was found among centers in current practice**
- **It is very important to update statement and modify the approach to GHD with new evidence based clinical studies.**

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