**Thyroid Function in Children Treated with rhGH for Growth Hormone Deficiencies**

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**Introduction**
- A considerable number of previous studies have shown the relationship between thyroid function and treatment with recombinant human growth hormone, indicating a decrease of FT4 levels and a compensatory TSH increase at rhGH therapy onset.
- On the other hand, we have identified a number of patients with documented primary hypothyroidism (either on treatment with L-thyroxine or not) before the onset of rhGH treatment.

**Patients and Methods**
- We retrospectively analyzed thyroid function in all patients receiving rhGH for GH deficiency in our department.
- Other indications for rhGH treatment (e.g. chronic kidney disease, Turner syndrome, Prader-Willi syndrome) were excluded.
- 129 patients with GHD on rhGH treatment were identified (77 boys and 52 girls).

**Results**
- 29/129 (22.5%) patients were detected to have thyroid dysfunction.
- Central Hypothyroidism (n=10):
  - 2 brain tumor
  - 4 ACTH + TSH + GH deficiency
  - 4 TSH + GH deficiency
- Primary Hypothyroidism (n=19):
  - 15 before rhGH treatment
  - 4 after rhGH treatment

**Conclusions**
- A significant percentage of patients with GHD (7%) were found to have primary hypothyroidism of unknown cause that developed before the onset of rhGH.
- GHD should be suspected in short children with mild, compensated hypothyroidism.