HYPERTHYROIDISM IN CHILDREN AND ADOLESCENTS: CAUSES, WHEN AND HOW TO TREAT. A TUNISIAN EXPERIENCE

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**Background:**
Hyperthyroidism is considered to be rare in children; its clinical profile is different and the most cause is Grave’s disease (GD).

**Objective and hypotheses:** To evaluate clinical features and evolution of childhood hyperthyroidism

**Method:** Longitudinal retrospective study of children diagnosed with hyperthyroidism in a paediatric endocrinology unit in Tunisia from 2000 to 2015.

**Results:**

- **Clinical features**
  - Goiter
  - Tachycardia
  - Bilateral exophthalmos
  - The upper eyelid retraction
  - Loss of weight
  - Other; diarrhea, polyphagia...
  - Fine tremor

- **Laboratory evaluation**
  - Raised free T4 in all patients
  - TSH <0,05μUI/l (5 patients)
  - Anti-TPO > 100UI/ml (3 patients)
  - Thyroglobulin antibody: (-) in all patients
  - Trab: (+) in 3 patients

- **Imaging evaluation**
  - Thyroid gland was:
    - homogenous and diffusely enlarged: 3 cases
    - normal: one case
    - multinodular: 2 cases

**Etiologies**

- Grave's disease: 5
- Thyroiditis: 1
- Resistance to the thyroid hormones: 1

**Treatment**

- Carbimazole: 6
- Neomercazole: 4
- Beta-blockers: 3
- No treatment: 1

**Conclusion**
Grave’s disease is the most common cause of hyperthyroidism in children. Nevertheless, we shouldn’t forget more rare etiologies. Treatment is based on antithyroid drugs (ATD) with a low remission rate. The use of scores for identification of predictive factors of the risk of relapse after ATD treatment will lead to improvements in patient management.

**A case of resistance to the thyroid hormones**

- A girl aged 2 years
- Isolated sinus tachycardia since birth

**Clinical examination:**
- Eutrophic
- PC = 45 cm (-2DS) → microcephalia
- Isolated sinus tachycardia
- No other hyperthyroidism symptoms

**Laboratory evaluation:**
- TSH=6.92μUI/l → peripheral hyperthyroidism
- FT4=41.63 UI/l
- Trab< 0,3 UI/l (-)

**Molecular biology:** heterozygous mutation in exon 8 located in the thyroid hormone receptor beta gene

**Familial molecular biology:** negative
- Resistance to thyroid hormones associated with mutation A268D turning an alanine into an aspartic acid.

**No Treatment and no complications**