

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

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Background:

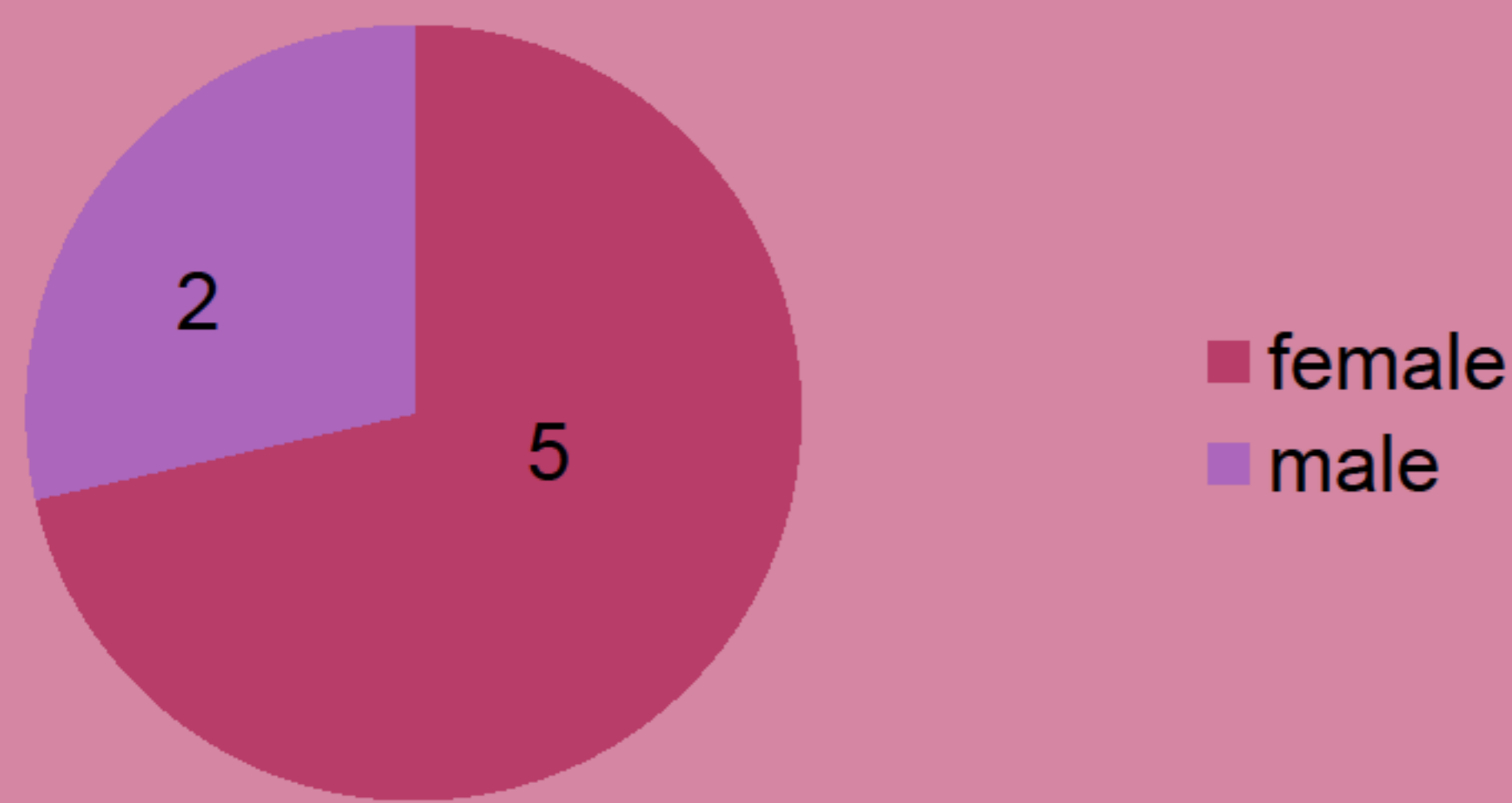
Hyperthyroidism is considered to be rare in children; its clinical profile is different and the most cause is Grave's disease (GD).

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

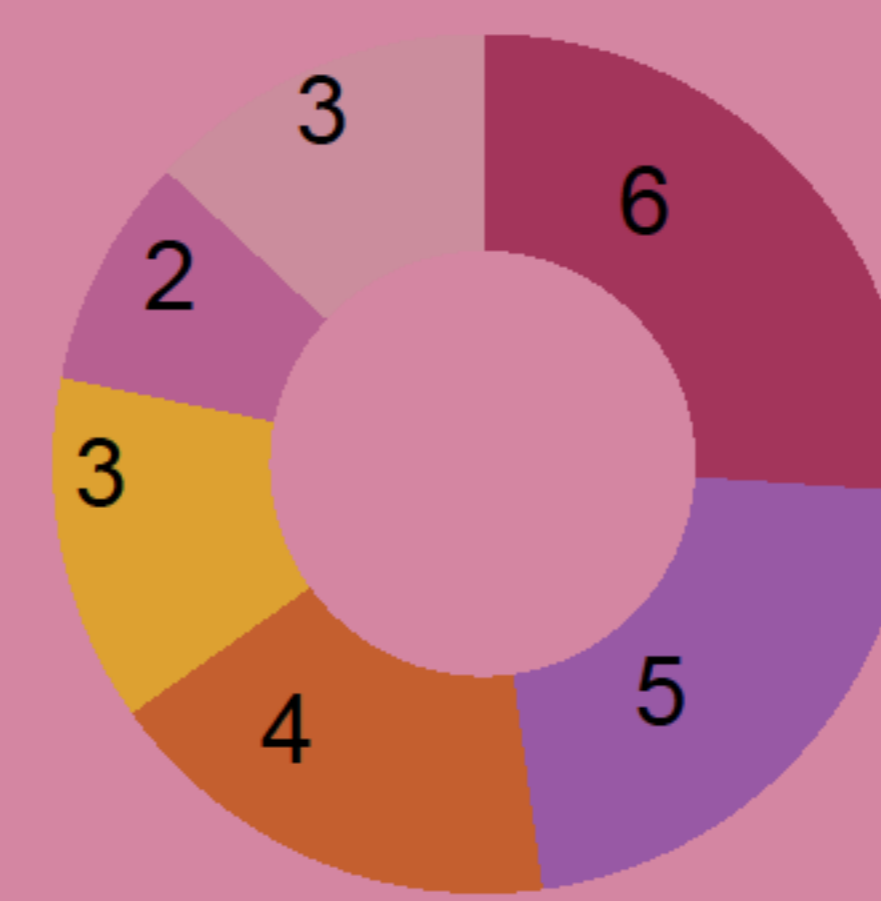
Method: Longitudinal retrospective study of children diagnosed with hyperthyroidism in a paediatric endocrinology unit in Tunisia from 2000 to 2015 .

Results:

Patient's sex



Clinical features



- Goiter
- Tachycardia
- Bilateral exophthalmos
- The upper eyelid retraction
- Loss of weight
- Other: diarrhea, polyphagia..
- Fine tremor

- ✓ Average age at diagnosis : 6.3 years (7 days – 10 years)
- ✓ Family history of dysthyroidism: 4 cases

- ✓ Association with a Down Syndrome: 1 case
- ✓ Association with a coeliac disease : 1 case

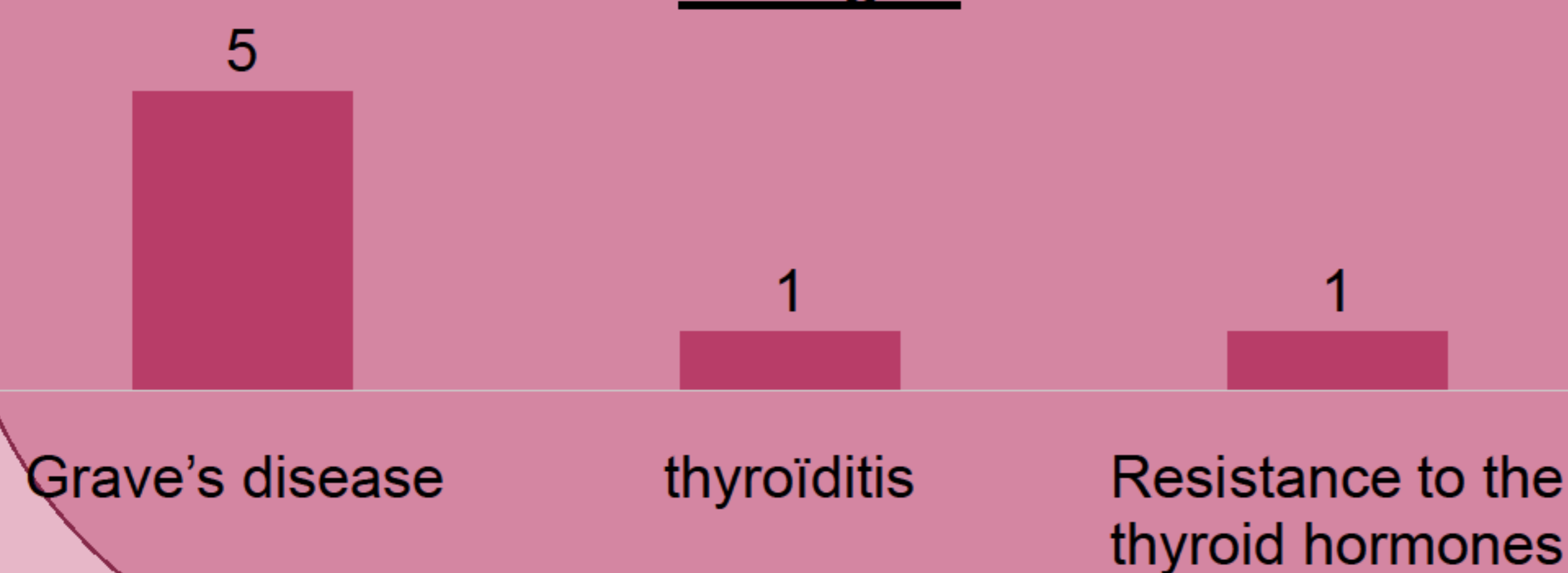
Laboratory evaluation

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

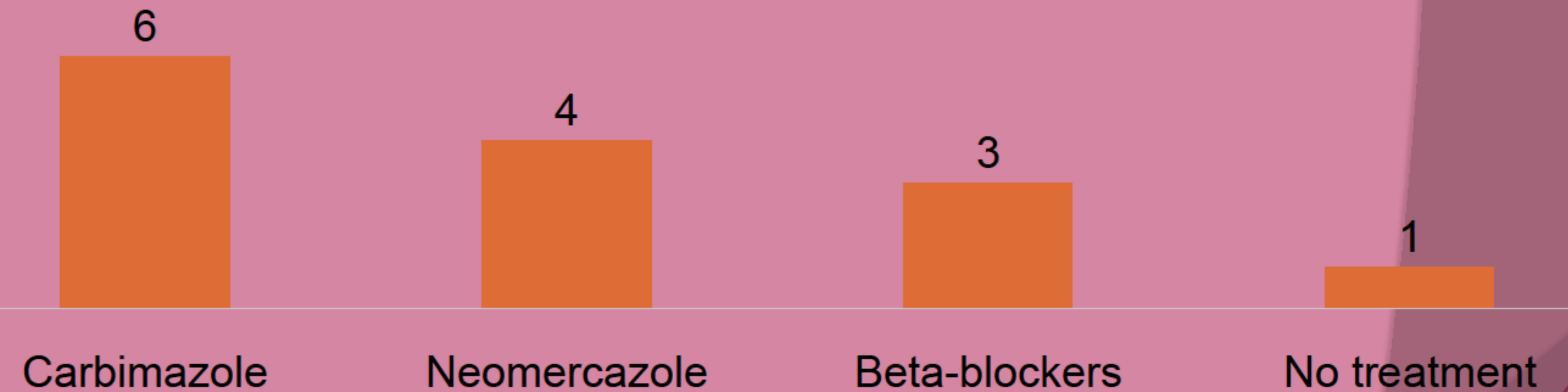
Imaging evaluation

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

Etiologies



Treatment



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 FT4=41,63 UI/l → peripheral hyperthyroidism
- Trab < 0,3 UI/l (-)

• **Mocular 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**

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.

