

# Evaluation of Clinical, Demographic Data and Treatment Results of Cases with Graves' Disease

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## Introduction

- Graves' disease is the most common cause of hyperthyroidism in children and adolescents, characterized by development of stimulant antibodies against thyrotropin (TSH) receptors.
- Environmental and genetic factors are thought to be responsible in triggering autoimmunity.

## Materials and Methods

- Twenty-nine cases, with Graves' disease diagnosed in Pediatric Endocrinology clinic between January 1999 and December 2018, were included in the study. Patients demonstrating high free T3 or T4 levels and suppressed TSH levels with either thyrotropin receptor antibodies (TRAb) positivity or requirement of antithyroidal treatment for more than 1 year despite absence of TRAb were diagnosed as Graves' disease.
- Clinical, demographic features, physical examination findings, laboratory, imaging, treatment processes were obtained from patient files retrospectively.

## Results

- The median age of the patients included in the study was 13.72 years (1.92-16.68) (82.8% female, 62.1% pubertal). At the time of diagnosis, the weight, height and body mass index SDS values were -0.4 (-7.5- +2.22), 0.2 (-3.91- +2.58) and -0.2 (-6.8- +1.75), respectively.
- The most frequent complaints were palpitation (55.2%), sweating (55.2%), weight loss (41.4%), irritability (34.5%), and tremor (34.5%). The duration of symptoms before diagnosis was 1.75 (1-12) months, and the family history of thyroid disease was present in 72.4% of cases.
- Goiter was found in 55.2% of patients and exophthalmos 17.2%. At the time of diagnosis, 64.3% of patients were found to be hypertensive and 7.1% as pre-hypertensive.

- In laboratory tests, TRAb was positive in 84.6% of the cases and the median values of TSH, fT3 and fT4 were found to be 0.01  $\mu$ IU/mL (N: 0.38-5.33), 12.32 pg/mL (N: 2.5-3.9), 3.8 ng/dL (N: 0.5-1.51), respectively.
- The thyroid ultrasonography revealed heterogeneity in the parenchyma in 66.7% of the patients, hypoechogenicity in 54.2%, pseudonodular pattern in 30.4%, diffuse hyperplasia in 16.7%, and nodule in 8.3% of the patients.
- Propylthiouracil treatment was started in 44.8% of the cases and methimazole 55.2%, and also propranolol treatment was added in 86.2% of patients due to tachycardia. In the follow-up, a raise in transaminase levels (maximum of 5 folds) was detected in 3.4% of the patients.
- The median follow-up period was 30 months (12-98), the remission rate was 13.8% and the median time to remission 18.5 months (11-28).
- There was no relapse in any of the patients who had remission. Total thyroidectomy was performed in 24%, and ablation with radioactive iodine was applied to 4% of the cases who were not in remission.

## Conclusion

- In this study, the majority of cases with Graves' disease were diagnosed after typical clinical findings of hyperthyroidism in pubertal period and the remission rate was found to be consistent with the literature.
- In addition, anti-thyroid treatment was found to be reliable in the pediatric age group and none of the cases had serious adverse effect.
- **Keywords:** Graves' disease, hyperthyroidism, anti-thyroid treatment

