General Characteristics of Autoimmune Thyroid Diseases and Evaluation of Accompanied Morbidities

[1] Aysel Burcu PALANDOKENLIER IBILI; [2]Beray Selver EKLIOGLU; [2] Mehmet Emre ATABEK

[1]Necmettin Erbakan University, Meram Faculty of Medicine, Department of Pediatrics, Konya, Turkey
[2] Necmettin Erbakan University, Meram Faculty of Medicine, Division of Pediatric Endocrinology and Diabetes, Konya, Turkey

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Introduction

Early diagnosis and treatment of thyroid gland diseases are very important in childhood. Thyroid hormones have important effects on the central nervous system, growth-development, puberty and bone metabolism (Gönç& Kandemir, 2014). Two basic types of autoimmune thyroid disease (ATD) are etiologically and terminologically presumed to be Hashimoto's thyroiditis and Graves disease (Chistiakov, 2005). In addition, Hashimoto's thyroiditis (HT) and Graves disease (GD) have similar pathogenic mechanisms (Weetman, 2004). The most common cause of goitre and acquired hypotyroidism in childhood and puberty is HT, also the most common cause of hyperthyroidism is GD in childhood and puberty (Bulus & Andıran, 2015). Autoimmune thyroiditis is a specific immunocompetent inflammatory disease and it is characterized by the formation of antibodies that cause functional changes in the thyroid gland (Yıldırım & İşgör, 2000). The most frequently used autoantibodies are the thyroid microsomal antibody (TMAb), antithyroglobulin (Anti-Tg) and TSH receptor antibody (TSH-R-ab). The first degree relatives of patients with autoimmune disease also have more risk for all autoimmune diseases than the general population. This emphasizes the importance of the role played by genetic factors. Other autoimmune diseases are also common for patients with autoimmune disease (Kabalak, 2009). In this study, the files of patients with autoimmune thyroid disease were retrospectively reviewed and the epidemiological, clinical and laboratory findings were retrospectively evaluated.

Results

Type 1 DM in five HT, Celiac disease in two HT, Vitiligo in two HT, Myasthenia graves in one HT, Type 1 DM in one GH and vitiligo in two GH were revealed. For this reason, it is important to control for other autoimmune diseases when ATD is detected.

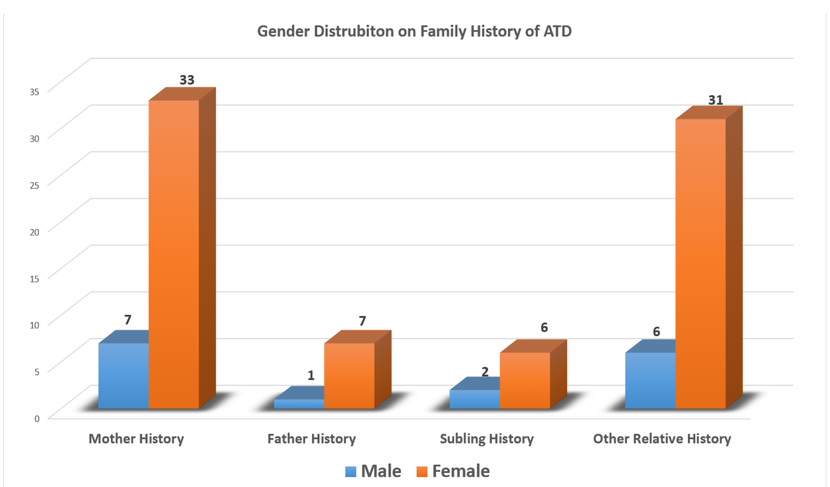
In the study, there was a statistically significant between HT and decrease of height curve (SDS). According to this; long running period of the hypothyroidism clinic without medication is a reason of short stature, so early diagnosis and early treatment are important.

64.7% (n = 92) of patients with ATD had family history of ATD and 32% (n: 39) of patients had mother history of ATD. It has been emphasized that ATD may develop in children and adolescents who family history and especially mother history have.

There is a statistically significant difference in mother history in male and female patients [(X2mother = 16,90; sd = 1), p <0. 01)]. For this reason, it is recommended that girls with family history should be monitoring more careful.

Tgab positivity was significantly associated with family history for female patients. Accordingly, Tgab may be used as a screening test in girls who family story have. Also further researches have been recommended.

ATD			P values
1- Anthropometric Comparison			
Weight SDS (HT-GH)			0,32
Height SDS (HT-GH)			0,02
BMI SDS (HT-GH)			0,21
2-ATD in Family+	Female	Male	
Mother	33	7	0
Father	7	1	0,07
Sublings	6	2	0,157
A. Hashimoto Thyroiditis			
1-Autoantibodies			
TMAB negativity-pozitivity in Females			0,56
TGab negativity-pozitivity in Females			0,045
2- Females with Family ATD + Otoab			
Tmab + and -			0,56
Tgab+ and -			0,045
3- Medication	F	M	
Duration (months)	19	15	0,29
Remission after medication	4	0	0,33
Spontaneous Remission	28	7	0,43
4-Parameters with medication	F (p)	M (p)	
TSH	-0,55	0,98	
sT3	0,37	0,93	
sT4	0	0	
Tg	0,5	0,7	
5- Autoab with medication	F(p)	M(p)	
LT4 Tmab+	0,53	0,07	
LT4 Tgab+	0,63	0,09	
B. Graves Disease			
1- Medication	MMI	PTU	
Number of patients	19	5	
Remission after medication	3	1	
Duration of medication(months)	13	30	
Spontaneous Remission	0	0	
2-Parameters with medication	F(p)	M(p)	
TSH	0	0,08	
sT4	0	0,76	
sT3	0	0,36	
Tg	0,56	0,04	
3- Autoab +	F	M	
	16	3	
ß-blocker requirement	10	1	



Methods and Materials

Patients's files with Autoimmune Thyroid Disease at Necmettin Erbakan University Meram Medical Faculty Pediatric Endocrinology Clinic were reviewed retrospectively from January 2010 to December 2015.

A sample of 142 patients that include 115 females and 27 males were evaluated.

The age, gender, complaint, family history, body weight, height, body mass index and standard deviation scores (SDS) of these parameters and thyroid examinations, biochemical parameters (Na, K, Urea, creatinine etc.), TSH, sT3, sT4, Tg, thyroid autoantibody (TMAB, anti-Tg, TSH-R-ab) levels, Thyroid ultrasonography findings (thyroid gland size, parenchymal echogenicity, nodule), thyroid scintigraphy results, and thyroid fine needle aspiration biopsy results (IIAB) were used.

Statistical data were obtained from SPSS 22.00 package program, Kolmogorov-Smirnov and Shapiro-Wilk, Shapiro-Wilk, Levene, Fisher's Least Significant Song (LSD), Tamhane T2, Kruskall Wallis-H, Mann-Whitney U, Oneway-ANOVA, Post . Hoc test (Tukey-HSD),Chi-square tests.

Features of ATD	Hashimoto (n:122)		Graves (n:20)	
1- Group numbers	F (n:98)	M (n:24)	F (n:17)	M (n:3)
2- Average age	±14			
3- Puberty	89	21	14	3
4-Distribution of thyroid functions				
Hypothyroidism	81	22	0	0
Euthyroidism	12	1	0	0
Hyperthyroidism	5	1	17	3
5-Goitre stages				
0	81	22	13	3
1	9	0	2	0
2	8	1	2	0
3	0	1	0	0
6- Thyroid nodule	6	3	0	0
7- Accompanying other ATD	6	2	1	0

Conclusions

It is thought that detailed anamnesis of children and adolescents, physical examination, careful interrogation of the family story for ATD and laboratoar tests might contribute for earlier diagnosis of ATD and healthy growth.