



The frequency of tissue transglutaminase antibodies in the monoglandular and polyglandular autoimmune endocrine disorders

Aysen Kocaeli, Soner Cander, Ozen Oz Gul, Pinar Sisman, Canan Ersoy, Erdinc Erturk

Uludag University Medical School, Endocrinology and Metabolism



Objectives

- Celiac disease can be seen in the autoimmune polyglandular syndromes (APS) and other autoimmune diseases are seen 10 times more frequently in celiac disease.
- Generally, symptoms of celiac disease is not accompanied when present together with autoimmune endocrine diseases.
- In this study, we aimed to investigate the prevalence of silent celiac disease in the APS and autoimmune monoglandular disorders by measuring tissue transglutaminase antibodies (tTGAb).

Methods

- A total of 103 patients with monoglandular or polyglandular autoimmune endocrine disorders and 32 control subjects which similar values in terms of age and sex were enrolled in the study.
- At least the existence of two diagnoses with Type 1 diabetes mellitus, Addison's disease, autoimmune thyroid disease, vitiligo, pernicious anemia, hypoparathyroidism, premature gonadal failure were considered APS and patients with only one of those type 1 diabetes, Hashimoto's thyroiditis, or Addison's disease were enrolled as monoglandular endocrine disease.
- Serum samples were collected from patients and were studied at one time for tissue transglutaminase IgG and IgA.

Results

- Hashimoto's thyroiditis was present in the sixty-eight patients of 103 patients including OPS and monoglandular endocrine disease patients, type 1 diabetes was in the forty-four patients and Addison's disease in the seventeen ones.

- In the 13 of 103 patients with autoimmune disease (12.6%) tTGAb IgA were positive and in the 8 of 103 (7.8%) tTGAb IgG were positive but in the healthy control group both IgA or IgG antibodies were not present.
- Highest rates of positive tTGAb IgA frequency was detected in the Addison's disease with 29.4% (five of the 17 patients).
- It was 13.6%, in the type 1 diabetes, 8.8% in the Hashimoto's disease and 16.7% in the APS. There were not observed statistically significant difference between the groups and the tTGAb IgG positivity was observed with lower rates.

Table-1: Demographic and clinical characteristics of the study and control groups.

	Study Groups					Controls
	Type 1 Diabetes	Addison's Disease	Hashimoto's Disease	APS Type 2	All	
N	44	17	68	38	103	32
Age (years)	30.7±10.1	44.9±11.3	41.3±11.3	35.2±10.0	38.1±12.5	36.8±10.4
Gender (% Male)	27.3	17.6	8.8	16.7	16.5	40.6
BMI (kg/m ²)	23.7±3.7	24.6±3.7	27.8±5.8	24.0±3.5	26.3±5.5	25.4±3.3
Creatinin (mg/dl)	0.9±0.1	0.8±0.1	0.8±0.1	0.7±0.1	0.8±0.1	0.7±0.1
A1c (%)	8.81±1.3					

APS: Autoimmune polyglandular syndrome

Table-2: tTG antibody positivity rates between study and control groups.

antibody positivity (%)	Study (n : 103)	Controls (n : 32)	P
tTG IgA	12.6	0	0.038
tTG IgG	7.8	0	0.198

Table-3: tTG antibody positivity rates in the patients with the autoimmune diseases.

antibody positivity (%)	Type 1 Diabetes (n : 44)	Addison's Disease (n : 17)	Hashimoto's Disease (n : 68)	OPS type 2 (n : 36)
tTG IgA	13.6	29.4	8.8	16.7
tTG IgG	9.1	17.6	4.4	16.7

tTG IgA: Tissue transglutaminase immunoglobulin A; tTG IgG: Tissue transglutaminase immunoglobulin G.

Conclusions

- The prevalence of silent celiac disease is seen at a higher rate in the patients with autoimmune endocrine disorders when compared with the healthy control group.
- The frequency of tTGAb is not higher in the APS then monoglandular endocrine disorders and Addison's disease likely has highest prevalence of silent celiac disease.

