

ASSOCIATED AUTOIMMUNITY AND FAMILY AUTOIMMUNITY IN CHILDREN AND TEENAGERS WITH TYPE 1 DIABETES MELLITUS (T1DM)

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Introduction

- ❖ T1DM often coexists with other autoimmune diseases, either individually or as a part of polyendocrine syndrome (APS I, III).
- ❖ It is frequently associated with autoimmune thyroid or celiac disease, autoimmune gastritis and Addison's disease.
- ❖ In families with T1DM patients, other autoimmune diseases frequently exist (familial autoimmunity).

Objective

Our aim was to evaluate the frequency of associated and familial autoimmunity in T1DM children and adolescents and their correlation with predisposing factors.

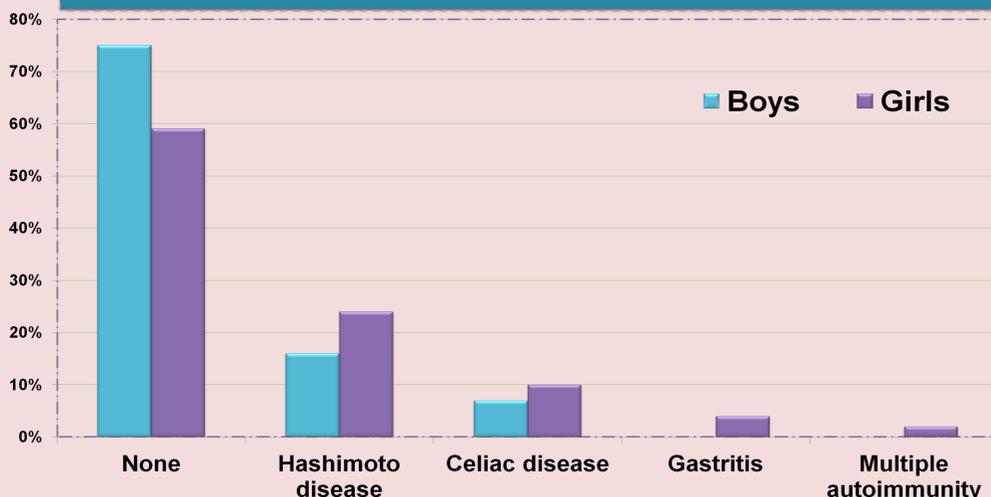
Material and Methods

- ❖ We studied 93 T1DM children and adolescents (boys/girls: 44/49) with a mean \pm SD age of 12.5 ± 4.7 years (range 1.5-18 years), disease duration 4.7 ± 4.0 years and an age at diagnosis of 8.0 ± 3.5 years.
- ❖ The following autoantibodies against associated autoimmune diseases were identified:
 - a. For Celiac disease: Antibodies against tissue transglutaminase (anti-tTG-IgA) and endomysium abs (anti-EMA-IgA and IgG).
 - b. For Hashimoto Thyroiditis: against thyroid peroxidase (anti-TPO) and thyroglobulin (anti-TG).
 - c. For autoimmune gastritis: against the gastric parietal cells (APCA).
 - d. For Addison's disease: against adrenal cortex (ACA).

Results

- ❖ Double autoimmunity was found in 25/93 patients (26.9 %) and triple in 6/93 (6.5 %).
- ❖ Among our patients, 20 (21.5 %) had Hashimoto's, 11 (11.8 %) celiac disease, 5 (5.4 %) gastritis, 1 patient (1.0 %) psoriasis.
- ❖ Familial autoimmunity was found in 46% patients: Hashimoto's 32 (34.4 %), T1DM 17 (18.3 %), gastritis 2 (2.1 %), multiple sclerosis 2 (2.1 %), while celiac disease, Myasthenia Gravis and psoriasis occurred in 1 relative (1.1 %) each disease.
- ❖ The associated autoimmunity appearance was not correlated with gender [boys 12/44 (27.3%) vs girls 21/49 (42.8%), $p=0.088$] and T1DM age at diagnosis [<5 years:10 (45.5%) vs ≥ 5 years:17 (30.3%), $p=0.290$].
- ❖ When analyzing associated autoimmune diseases according to patients' age, the frequency of Hashimoto's significantly increased in adolescents aged ≥ 12.1 years ($p=0.048$), and autoimmune gastritis occurred after 12 years (Table). Inversely the frequency of celiac disease was increased with decreasing age, with the highest incidence in children aged <5 years and the lowest in those above ≥ 12 years.

ASSOCIATED AUTOIMMUNITY IN CHILDREN WITH T1DM: GENDER BREAKDOWN



ASSOCIATED AUTOIMMUNITY IN T1DM CHILDREN ACCORDING TO AGE	<5 years	5.1-12 years	>12.1 years
Hashimoto Thyroiditis	1 (14.2%)	4 (11.1%)	14 (28%)
Celiac disease	1 (14.2%)	4 (11.1%)	3 (6%)
Autoimmune gastritis	0	1 (1%)	4 (4%)
Multiple autoimmunity	0	1 (2.7%)	1 (2%)
No associated autoimmune disease	5 (71.4%)	27 (75%)	30 (60%)

Conclusions

- ❖ Associated autoimmunity is quite common (33.3 %) in T1DM children and adolescents, with the most frequent autoimmune diseases being Hashimoto thyroiditis and celiac disease.
- ❖ The frequency of Hashimoto thyroiditis and autoimmune gastritis were significantly increased during puberty, while celiac disease was more frequent in children aged <12 years.
- ❖ Addison's disease was not present among children and adolescents with T1DM.
- ❖ Familial autoimmunity was observed in the relatives of 46 % patients, with the most common autoimmune diseases being Hashimoto thyroiditis and T1DM.
- ❖ It is therefore necessary the regularly screen T1DM patients and their relatives for associated autoimmunity.

