In children with autoimmune thyroid diseases the association with Down syndrome can modify the clustering of extra-thyroidal autoimmune disorders

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OBJECTIVES

**Background:** Autoimmune diseases have a higher incidence and prevalence among the individuals with Down syndrome (DS) compared to chromosomally normal people (increased risk for thyroid, gut and islet autoimmunity, juvenile idiopathic arthritis). These findings provide insights into a very aggressive phenotypic expression of autoimmunity in DS children.

**Aims:** To investigate for the 1st time whether the association with DS might per se modify the aggregation of extra-thyroidal autoimmune diseases (ETADs) in children with the same index autoimmune diseases, by conditioning a different clustering in the cases with associated DS versus those without DS.

**METHODS**

In the present cross-sectional study covering 832 children with autoimmune thyroid diseases (AITDs), we investigated the clustering of ETADs in 2 groups of patients with or without DS (Groups A and B, respectively) and in four subgroups of patients aged either <6 or ≥6 years. All the included patients were screened for the most common pediatric ETADs by specific anamnesis, clinical examination and some selected autoantibody assays.

**RESULTS**

The rate of children with ETADs was significantly higher in Group A; in particular, alopecia areata (p=0.00001) and vitiligo (p=0.00001) were found more often in Group A irrespective of age, whilst the distribution of T1 diabetes mellitus was not different in the two groups. Celiac disease prevalence was significantly higher in DS patients only in the older subgroup.

**CONCLUSIONS**

The association with DS may be able to modify the clustering of ETADs in the children with AITDs by favoring the aggregation of some specific diseases, such as alopecia areata and vitiligo.

**References**