The Prevalence of Clinically Significant anti-TPO Positivity in Children with HLA-conferred Susceptibility to Type 1 Diabetes

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Introduction

- Children with type 1 diabetes (T1D) have increased prevalence of clinically significant anti-thyroid peroxidase antibody (anti-TPO) positivity and autoimmune thyroiditis.1
- In healthy children the prevalence of clinically significant anti-TPO level, defined as >100 kU/L, can be up to 3%.2
- The prevalence of clinically significant anti-TPO positivity in children with HLA-conferred susceptibility to T1D, is not known.

Objectives

- To evaluate the serum levels of anti-TPO and the prevalence of clinically significant anti-TPO positivity in children with HLA-conferred susceptibility to T1D.

Methods

- Serum concentrations of anti-TPO were measured with previously validated ECLIA method.
- The test manufacturer’s reference range of < 18 kU/L for this age group was used.
- The lower detection limit of the test was 5 kU/L.
- Clinically significant anti-TPO positivity was set as anti-TPO concentration of >100 kU/L.
- The statistical analysis was performed with Excel using the Mann-Whitney test, p <0.05 was considered statistically significant.

Results

- 23 children (17 girls) had anti-TPO levels above the reference range, i.e. 12.8% of all subjects.
- In 3 cases (1.7%), all girls, anti-TPO was >100 kU/L, suggesting a very likely autoimmune thyroiditis. - Two of the three subjects had normal thyroid function tests, one was lost to follow-up.
- Anti-TPO levels ranged from <5 to 373 kU/L.
- Girls had significantly higher median anti-TPO concentration than boys (12.0 vs 10.5 kU/L; p = 0.0002).

Conclusions

- In children with HLA-conferred susceptibility to T1D the prevalence of clinically significant rise of anti-TPO levels was similar to previously reported data in healthy children.
- Almost 13 percent prevalence of anti-TPO positivity in the cohort is comparable to that described in T1D subjects of the same age group3.
- Further studies are necessary to clarify the clinical significance of this finding.

References


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