Endocrine autoimmunity in families with type 1 diabetes: frequent appearance of thyroid autoimmunity during late childhood and adolescence.

Abstract:
AIMS/HYPOTHESIS: Thyroid autoimmunity clusters with other endocrine and non-endocrine forms of autoimmunity. The aim of this study was to determine the chronological appearance of thyroid autoantibodies in relation to other forms of autoimmunity in at-risk children.

METHODS: The BABYDIAB study follows children of parents with type 1 diabetes. Children born in Germany between 1989 and 2000 were recruited at birth and followed up at 9 months and at 2, 5, 8, 11, 14 and 17 years. Antibodies to thyroid peroxidase were measured in samples taken at the last study visit in 1,489 children and in all previous samples in children who tested positive. Islet antibodies and antibodies to 21-hydroxylase and transglutaminase were also measured in all children. Median follow-up was 8 years.

RESULTS: The cumulative risk for developing antibodies to thyroid peroxidase was 20.3% (95% CI 12.3-28.3) by age 14 years. The risk was increased in girls (adjusted HR 2.0; 95% CI 1.2-3.4; p = 0.008), in children who had multiple first-degree family history of type 1 diabetes (adjusted HR 3.3; 95% CI 1.4-8.0; p = 0.006) and in children who also had antibodies to GAD (adjusted HR 3.0; 95% CI 1.5-5.9; p = 0.001). Thyroid peroxidase antibody appearance was most common from age 8 years and was often the last autoantibody to develop in children with other
autoantibodies. CONCLUSIONS/INTERPRETATION: Among children of patients with type 1 diabetes, the appearance of thyroid autoantibodies is frequent, is not synchronous to the appearance of other autoantibodies and is most common in late childhood and adolescence.

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