



ANTI-CYCLIC CITRULLINATED PEPTIDE ANTIBODIES ARE NOT FREQUENT IN CHILDREN WITH TYPE 1 DIABETES

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Introduction

*Sporadic and familial co-occurrence of rheumatoid arthritis (RA) and type 1 diabetes has been reported (0.32% - 5.95%)

*Anti-cyclic citrullinated peptide (anti-CCP) antibodies

-A new group of autoantibodies reported to be predictive for RA.

*In a single adult study, 2.9% of patients with type 1a DM were anti-CCP+

*There are no studies evaluating anti-CCP antibody positivity in children with type 1 diabetes.

Patients and Methods

Study group: Type 1 diabetes patients who had at least one positive pancreatic islet autoantibody at the time of diagnosis

Anti-CCP IgG antibodies (negative, <4 U/L) - chemiluminescent immunometric assay (Siemens IMMULITE 2000/XPi, Munich, Germany).

Rheumatoid factor (negative, <30 IU/mL) - turbidimetry (Abbott Aeroset and Architect) (Barcelona, Spain).

Results

Group 1: 90 children with type 1 diabetes

- Duration of diabetes: 2.1±1.9 years.
- Mean HbA1c: 9.65±1.98% (range, 6.12-15.75)
- Mean insulin dose: 0.85±0.28 IU/kg/day
- Thyroid autoimmunity: 19.8%
- Coeliac antibodies: 10%

Group 2: 76 healthy cases

Table 1. Clinical and laboratory characteristics of the groups

	Group 1 (n=90)	Group 2 (n=76)	p value
Age (years)	10.5 ± 3.9	9.8 ± 3.7	0.196
Sex ratio (M/F)	46/44	34/42	0.413
Weight (SDS)	0.41 ± 0.95	0.13 ± 1.01	0.063
Height (SDS)	0.21 ± 1.06	-0.21 ± 1.03	0.010
BMI (SDS)	0.40 ± 0.93	0.35 ± 1.00	0.715
Family history of RA	3 (3.3%)	1 (1.3%)	0.626
Pubertal cases	48 (53.3%)	39 (51.3%)	0.795

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Table 2. Serologic characteristics of the groups

	Group 1 (n=90)	Group 2 (n=76)	p value
Anti-GAD antibody	54 (69.2%)	-	N/A
ICA	45 (60.0%)	-	N/A
Anti-insulin antibody	26 (32.5%)	-	N/A
Anti-TgAb	12 (14.0%)	-	N/A
Anti-tPOAb	15 (17.6%)	-	N/A
Antigliadin IgA	6 (6.7%)	-	N/A
Antigliadin IgG	1 (1.1%)	-	N/A
Antiendomysium Ab	6 (6.7%)	-	N/A
RF	0 (0.0%)	0 (0.0%)	0.999
Anti-CCP	1 (1.1%)	0 (0.0%)	0.999

The single case positive for anti-CCP antibody (5 U/mL, normal <4.00 U/mL).

-9.5 years old, had no family history of RA

-no relevant joint complaints or findings.

-type 1 diabetes 2 months ago

-showed positivity for islet cell antibody, antigliadin IgA, and antiendomysium antibodies.

-RF and intestinal biopsy for coeliac disease were negative.

Discussion

Anti-CCP antibodies are indicative of the future development of RA. A recent case-control study in adult patients (n=1401) provided evidence of a significant trend toward an association between type 1 diabetes and RA that is specific for anti-CCP positive patients [n=857, 61%, odds ratio 7.3 (95% CI 2.7-20.0)] but not anti-CCP negative ones (n=544, 39%). However, Desplat-Jégo et al reported that anti-CCP antibodies in patients with type 1 DM of adult age group are rare even when diabetes is included in autoimmune polyendocrine syndrome type 2.

Conclusion

*Anti-CCP antibodies are rare in type 1 diabetes of short duration.

*The single case with high anti-CCP level will be followed for RA however this positivity might be nonspecific and transient as well.