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Prevalence of antibodies recognizing cyclic citrullinated peptides (anti-CCP) in patients with ulcerative colitis

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Aim: Ulcerative Colitis (UC) and Crohn’s disease (CD) are the most common forms of Inflammatory Bowel Diseases (IBD) while Aspecific Chronic Colitis (ACC) and Indeterminate Colitis (IC) are less frequent. IBD are frequently complicated by joint involvement (peripheral and axial arthritis).

Antibodies recognizing cyclic citrullinated peptides (anti-CCP) are directed to proteins that contain the unusual amino acid citrulline [1].

The anti-CCP ELISA test has an excellent specificity for the diagnosis of Rheumatoid Arthritis (RA), especially in patients with early disease, and it is considered a disease activity predictor [2]. Anti-CCP positivity is detected also in Psoriatic Arthritis (PA) but associated with symmetrical polyarthitis pattern [3].

Correlation between IBD, with or without arthritic manifestations, and anti-CCP positivity was not founded [4].

The aim of our study was to evaluate the role of anti-CCP in IBD patients with arthritic manifestations (Enteropathic Arthritis, EA), with arthritic manifestations and Psoriasis (EA + Ps) and in IBD patients without extraintestinal manifestations.

Materials and Methods: A total of 54 consecutive adult patients with IBD (24: 19 UC, 3 CD and 2 ACC), with EA (16: 10 UC, 5 CD and 1 IC) and with EA + Ps (14: 6 UC, 7 CD and 1 ACC) were evaluated.

Anti-CCP antibodies were detected on patients serum samples by a second generation ELISA test (VCP-IgG Kit; ASTRA Srl Milano) and as positive results were defined values >25 U/mL.

Results: Anti-CCP positivity was detected in 8 of 54 patients (15%): 4 IBD (3 UC and 1 ACC), 2 EA (2 UC) and 2 EA + Ps (1 UC and 1 ACC).

No significant difference (p > 0.05) of the prevalence of anti-CCP was found among patients with EA, patients with EA + Ps and IBD patients without arthritic manifestations and also among the three groups with different articular involvement. Instead, UC patients had significantly higher prevalence (p < 0.05) of anti-CCP positivity compared with the other three subgroups.

Conclusion: These preliminary results, even though on a small sample of patients, suggested that anti-CCP positivity is not related with arthritic manifestations in IBD patients, but seems to be a marker of differentiation between the various subtypes of IBD to add to the others markers already known.

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Relationship between CARD15 single nucleotide polymorphisms and gene expression level

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Aim: The three common polymorphisms (R702W, G908R and 1007fs) of CARD15 gene are associated with increased susceptibility to CD. We evaluated the frequency of these polymorphic variants in CD patients and healthy control subjects as well as determined whether CARD15 mutations were related with level of gene expression.

Materials and Methods: Fifty-six patients with CD and 22 healthy controls were enrolled in the study. Genetic material (DNA and RNA) was isolated from peripheral mononuclear blood cells (PBMCs). Genotyping of the three single nucleotide polymorphisms (SNPs) was performed by PCR-RFLP method.

CARD15 mRNA level was measured by real-time quantitative RT-PCR using TaqMan®MGB probes on an ABI PRISM® 7900HT Sequence Detection System (Applied Biosystems). Genotype and allele frequencies in the Crohn’s patients and control group were compared using the χ² test. An analysis of variance (ANOVA) was performed to test association between genotype and CARD15 mRNA level.

Results: No statistically significant differences in R702W and 1007fs genotype distribution were observed between CD patients and controls (p = 0.8384 and p = 0.14901, respectively).

Only G908R genotype distribution was significantly different in CD patients compared to healthy group (p = 0.0313). The G908R gene mutation was significantly lower in Crohn’s patients (8.04%) than in controls (20.45%, p = 0.289). The frequency of 1007fs mutant allele was significantly higher in CD patients (23.21%) compared to controls (2.27%, p = 0.0019).

No significantly difference was found between CD patients (8.04%) and control group (4.55%) in terms of the R702W polymorphism (p > 0.05). The overall allele frequency of mutations was higher in CD patients (39.29%) than in controls (27.27%) and this was not statistically significant (p = 0.1595).

Additionally, genotype–gene expression investigations performed with respect to the three polymorphisms of CARD15 gene did not reveal any significant correlation. Although, we noticed the significant difference in mRNA level in CD and control population (p = 0.017).

Conclusion: This is the first study to investigate SNP polymorphisms of CARD15 gene and their association with gene expression level in PBMC. As association was confirmed between genotype and gene expression level in CD and control population but we observed significant differences in CARD15 mRNA level in CD patients compared to controls.

These data suggest that three SNPs of CARD15 gene did not influence the level of gene expression but some other factors could increase mRNA level in patients with Crohn’s disease.

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Analysis of non-synonymous single nucleotide polymorphism at diamine oxidase gene (rsSNP Id: Rs1049793) in patients with Crohn’s disease

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The mucosa of colon and ileum of patients with IBD presents increased numbers of mast cells and high levels of their degranulation products such as histamine and tryptase. Histamine is degraded through diamine oxidase (amiloride...