ASSOCIATION OF IL-10 (RS1800782) VARIANT WITH RHEUMATOID FACTOR IN RHEUMATOID ARTHRITIS PATIENTS

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BACKGROUND

The association of rheumatoid arthritis (RA) with the IL10 –592 C > A (rs1800782) variant has been studied in different ethnic populations with inconsistent results, and the relationship with altered IL-10 plasma levels, clinical and laboratory parameters in RA patients are scarce and contradictory. Therefore, the present study aimed to evaluate the association between the IL-10 –592 C > A variant with susceptibility and disease activity, autoantibodies, and IL-10 plasma levels in RA patients from the southern Brazilian population.

METHODS

A total of 262 patients with RA and 168 control groups were tested for the IL10 –592 C > A variant using a polymerase chain reaction (PCR) followed by restriction fragment length polymorphism (RFLP). Anti-cyclic citrullinated peptide (anti-CCP) antibody levels were determined by chemiluminescence immunoassay and rheumatoid factor (RF) by turbidimetric assay. The IL-10 serum levels were measured using an ELISA kit. Disease activity status was determined using the disease activity score in 28 joints (DAS28). Statistical analyses employed chi-square test for categorical data, Mann–Whitney test for continuous data, and binary logistic regression analysis with adjustment of extraneous variables.

RESULTS

Patients and controls did not differ in sex and ethnicity. We have adjusted the results for possible effects of age, sex, ethnicity, and body mass index in multivariate analyses. The median disease duration was ten years (4–9) and 135 (53.1%) patients were in moderate/severe disease activity. The IL-10 levels differed significantly between groups, with increased IL-10 plasma levels in the RA group. The IL-10 –592 C > A variant was not associated with RA susceptibility and disease activity. Patients with the AA genotype had a higher frequency of positive RF than those with the CC genotype (OR 2.78 [1.15–6.67], $p = 0.022$). However, anti-CCP status, disease activity, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP) and IL-10 levels were not associated with the IL10 –592 C > A variant. We also observed that this variant did not interfere in ESR, CRP, and IL-10 plasma levels in health control. No differences were observed between IL-10 levels or disease activity with IL-10 –592 C > A genotypes in RA patients, independently of seropositivity for RF or anti-CCP and other confounding factors.

CONCLUSION

The IL10 –592 C > A variant was associated with the presence of RF, independently of disease activity and other confounding factors.

KEYWORDS

Rheumatoid arthritis, Genetic variants, Interleukin-10, rs1800782.