Coeliac Disease-Associated Antibodies in Psoriasis

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Background: The possible relationship between psoriasis and coeliac disease (CD) has been attributed to the common pathogenic mechanisms of the two diseases and the presence of antigliadin antibodies in patients has been reported to increase the incidence of CD. Objective: The aim of this report was to study CD-associated antibodies serum antigliadin antibody immunoglobulin (Ig)A, IgG, anti-endomysial antibody IgA and anti-transglutaminase antibody IgA and to demonstrate whether there is an increase in the frequency of those markers of CD in patients with psoriasis. Methods: Serum antigliadin antibody IgG and IgA, antien-domysial antibody IgA and anti-transglutaminase antibody IgA were studied in 37 (19 males) patients with psoriasis and 50 (23 males) healthy controls. Upper gastrointestinal endoscopy and duodenal biopsies were performed in patients with at least one positive marker. Results: Antigliadin IgA was statistically higher in the psoriasis group than in the controls (p < 0.05). Serological markers were found positive in 6 patients with psoriasis and 1 person from the control group. Upper gastrointestinal endoscopy was performed in all these persons, with biopsies collected from the duodenum. The diagnosis of CD was reported in only one patient with psoriasis following the pathological examination of the biopsies. Whereas one person of the control group was found to be positive for antigliadin antibody IgA, pathological examination of the duodenal biopsies obtain from this patient were found to be normal. Conclusion: Antigliadin IgA prominently increases in patients diagnosed with psoriasis. Patients with psoriasis should be investigated for latent CD and should be followed up.

Keywords: Antibodies, Celiac disease, Duodenum, Psoriasis

INTRODUCTION

Coeliac disease (CD) is known as a chronic immune-mediated gluten-dependent enteropathy and results from an inappropriate T-cell-mediated immune response against ingested gluten in genetically predisposed people. This is a disease that affects approximately 1% of the population, with affected people showing various symptoms that range from latent disease to overt enteropathy. The histopathological characteristics of CD are villus atrophy and crypt hyperplasia. CD is not limited to only the digestive tract; it is a multisystemic disorder associated with skin manifestations, iron deficiency anemia, osteoporosis, hypertransaminasemia, endocrine disorders, neurological disorders and cancer. Antigliadin antibody (AGA), antiendo-mysium antibody (EMA) and tissue transglutaminase (tTG) antibody are used in screening tests and to measure disease activity in CD.

Psoriasis is a dermatosis with an etiology that is not completely known, but immune mechanisms are accepted to play a role in its pathogenesis. It progresses and relapses and is characterized by scaling, erythema, and less commonly, postulation. Immune mechanisms play an important role in the disease’s pathogenesis. In particular, an
overexpression of T helper cell type 1 (Th1) cytokines and a relative under-expression of Th2 cytokines have been found in psoriatic patients. Recent data indicate that HLA-Cw*0602 may play an important pathogenetic role in the majority of psoriasis patients. Recent studies show an association between CD and psoriasis. At present the relationship between CD and psoriasis remains controversial since there are few and contrasting data on this topic, with some authors maintaining that the association between CD and psoriasis is coincidental. In this study, we aimed to study the serological markers that are described for CD in patients with psoriasis, and to define the possible relationship between psoriasis and coeliac disease.

MATERIALS AND METHODS

Thirty-seven patients (18 females, 19 males; mean age 41.95 ± 13.52) diagnosed with psoriasis were referred to the gastroenterology polyclinic from the dermatology polyclinic. The skin lesions of the patients with psoriasis were assessed by the same dermatologist. The severity of the psoriasis was assessed by use of the psoriasis area and severity index (PASI) scoring system. In these patients, mean PASI was 20.56 ± 9.37 and mean duration of the disease was 124.86 ± 102.44 months (range, 4 ~ 468 months). Patients in the psoriasis group who had another disease were excluded from the study. Fifty age and gender matched healthy individuals who were living in the same locale as the psoriasis patients and who did not have psoriasis, coeliac disease, autoimmune disease, food intolerance or a history of malabsorption or any familial predisposition for these diseases were assigned as the control group. Both the patients in the study group and the control group received gluten-containing diet. Blood samples were collected by venipuncture, following an overnight fast. In the serum specimens collected from the psoriasis patients and controls, IgA AGA and IgG AGA and IgA anti-transglutaminase (TGA) enzyme-linked immunosorbence were studied with immunosorbent assay (ELISA). IgA antibodies to endomysium (EmA) was assayed using indirect immunofluorescence.

Upper gastrointestinal system endoscopy was performed in patients who had at least one positive serologic marker, and 4 biopsy specimens from the 2nd part of the duodenum were collected from the patient. These biopsy specimens were assessed according to Marsh’s classification by the same pathologist who was unaware of the clinical and serologic markers of the patient. In the modified Marsh’s classification, 0 is assessed as normal mucosal structure without significant lymphocyte infiltration; 1 as lymphocytic enteritis (more than 30 lymphocytes/100 epithelial cells); II as lymphocytic enteritis and crypt hyperplasia; IIIA as partial villous atrophy; IIIB as subtotal villous atrophy and IIIC as total atrophy. The presence of at last one positive serology test plus Marsh 3 in the duodenal pathology was considered as CD. The project was approved by the local Ethics Committee and all patients gave their informed consent.

Statistical analysis

When the outcomes were evaluated, Number Cruncher Statistical System (NCSS) 2007 and Power Analysis and Sample Size (PASS) 2008 Statistical Software (NCSS LLC, Kaysville, UT, USA) was used for the statistical analyses. Besides the descriptive methods (mean, standard deviation) used for the assessment of the study data, in comparison of the quantitative data, Student’s t-test was used for the comparison of the parameters showing a normal distribution and the Mann Whitney U-test for the comparison of the parameters not showing a normal distribution between the groups. The chi-square test was used for the comparison of the qualitative data. Statistical significance was evaluated as the level of p < 0.05.

RESULTS

The study group constituted 37 patients (19 males and 18 females) diagnosed with psoriasis. Mean age was 41.95 ± 13.52 years in the study group, age range was 17 ~ 65 years, mean duration of the disease was 124.86 ± 102.44 months (range, 4 ~ 468 months) and mean PASI was 20.56 ± 9.37. The control group consisted of 50 healthy individuals (23 males and 27 females) with a mean age of 41.06 ± 4.91 years. There was no statistically significant difference between the study group and controls in terms of age and gender (p > 0.05). Distribution of age and gender of the study and control groups is given in Table 1.

AGA IgA, IgG, EMA IgA, IGA IgA, which are known as CD-associated antibodies, were studied in both groups and when the outcomes were assayed, CD-associated antibody was found positive in 6 (16.2%) of the 37 psoriasis patients and all patients gave their informed consent.

Table 1. Age and gender distribution of the groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Study</th>
<th>Control</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age* (yr)</td>
<td>41.95 ± 13.52</td>
<td>41.06 ± 4.91</td>
<td>0.706</td>
</tr>
<tr>
<td>Gender†</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>18 (48.6)</td>
<td>27 (54.0)</td>
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</tr>
<tr>
<td>Male</td>
<td>19 (51.4)</td>
<td>23 (46.0)</td>
<td></td>
</tr>
</tbody>
</table>

Values are presented as mean ± standard deviation or number (%).

*Student’s t-test, † chi-square test.