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Original Article

Gastric parietal cell and thyroid autoantibodies in patients with Behcet's disease

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KEYWORDS
Behcet's disease;
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Gastric parietal cell antibody;
Thyroglobulin antibody;
Thyroid microsomal antibody

Background/Purpose: Gastric parietal cell antibody (GPCA), thyroglobulin antibody (TGA), and thyroid microsomal antibody (TMA) were rarely examined in Behcet's disease (BD) patients. This study mainly assessed the frequencies of serum GPCA, TGA, and TMA positivities in 63 BD patients.
Methods: The frequencies of serum GPCA, TGA, and TMA positivities in 63 BD patients, 19 major-typed recurrent aphthous stomatitis (RAS)/BD (major RAS/BD) patients, 44 minor-typed RAS/BD (minor RAS/BD) patients, 520 RAS patients, and 126 healthy control subjects were calculated and compared.
Results: We found that 14.3%, 20.6%, and 20.6% of 63 BD patients, 21.1%, 21.1%, and 26.3% of 19 major RAS/BD patients, 11.4%, 20.5%, and 18.2% of 44 minor RAS/BD patients, 11.5%, 18.5%, and 18.3% of 520 RAS patients, and 1.6%, 2.4%, and 2.4% of 126 healthy control subjects had serum GPCA, TGA, and TMA positivities, respectively. BD, major RAS/BD, minor RAS/BD, and RAS patients all had significantly higher frequencies of serum GPCA, TGA, and TMA positivities than healthy control subjects (all P-values < 0.05). However, there were no significant differences in different serum autoantibody frequencies between BD, major RAS/BD, or minor RAS/

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BD patients and RAS patients. Of 16 TGA/TMA-positive BD patients whose serum thyroid-stimulating hormone (TSH) levels were measured, 87.5%, 6.3%, and 6.3% of these TGA/TMA-positive BD patients had normal, lower, and higher serum TSH levels, respectively.
Conclusion: Approximately 35% BD patients have serum GPCA/TGA/TMA positivity. However, BD patients do not have significantly higher frequencies of serum GPCA, TGA, and TMA positivities than RAS patients.

Introduction

Behcet's disease (BD) is a chronic, relapsing, multisystemic, and inflammatory disorder. According to the criteria for diagnosis of BD proposed by the International Study Group for BD, BD patients should have recurrent aphthous stomatitis (RAS) plus two of the following conditions including recurrent genital ulcerations, eye lesions, skin lesions, and positive pathergy reaction.[1,2] The majority of BD patients have minor-typed RAS (minor RAS, 57%), but BD patients may have major-typed RAS (major RAS, 40%) or herpetiform-typed RAS (3%).[2]

BD is considered to be an abnormal immune process triggered by an infectious or environmental antigen in a genetically predisposed individual.[2] The human leukocyte antigen B-51 (HLA-B51) has been found to be associated with BD.[2] Although several different types of antibody or autoantibody have already been reported in BD patients,[3–9] the organ-specific autoantibodies such as gastric parietal cell antibody (GPCA), thyroglobulin antibody (TGA), and thyroid microsomal antibody (TMA, also known as thyroid peroxidase antibody, TPO) were rarely reported in BD patients.[10,11]

In our oral mucosal disease clinic, patients with RAS, atrophic glossitis, burning mouth syndrome, oral lichen planus, and oral submucous fibrosis are frequently encountered.[12–38] For patients with one of these five specific diseases, complete blood count, serum iron, vitamin B12, folic acid, homocysteine, GPCA, TGA, and TMA levels are frequently examined to assess whether these patients have anemia, hematinic deficiencies, and serum GPCA, TGA, or TMA positivity.[12–38] The serum GPCA, TGA and TMA levels were evaluated because patients with GPCA are more likely to have pernicious anemia and to develop autoimmune atrophic gastritis that may subsequently progress to gastric carcinoma,[39,40] and patients with TGA or TMA may develop autoimmune thyroid disease and finally result in thyroid dysfunction.[35,41] For early diagnosis and treatment of subsequent severer diseases, it is very important to evaluate whether BD patients have GPCA, TGA and TMA in their sera.

Our previous study found that 13.0%, 19.4%, and 19.7% of 355 RAS patients have serum GPCA, TGA, and TMA positivities, respectively.[12] In this study, 63 BD patients with concomitant RAS were collected. The serum GPCA, TGA, and TMA levels were measured in these 63 BD patients and compared with the corresponding levels in 520 RAS patients (disease control group) and 126 age- and sex-matched healthy control subjects (normal control group). The purposes of this study were to assess whether a certain percentage of BD patients might have GPCA, TGA, and TMA in their sera, to evaluate whether BD patients might have significantly higher frequencies of serum GPCA, TGA, and TMA positivities than 520 RAS patients or 126 healthy control subjects, and to find whether TGA-positive and/or TMA-positive (TGA/TMA-positive) BD patients might have thyroid dysfunction.

Materials and methods

Subjects

The study group consisted of 63 BD patients (18 men and 45 women, age range 18–82 years, mean age 46 ± 16 years). For each BD patient, two age- (±2 years of each patient's age) and sex-matched healthy control subjects were selected. Thus, the normal control group consisted of 126 healthy control subjects (36 men and 90 women, age range 20–82 years, mean age 46 ± 13 years). For comparison of frequencies of serum GPCA, TGA and TMA positivities, a disease control group of 520 RAS patients (165 men and 355 women, age range 18–90 years, mean age 52 ± 16 years) was also included. All the patients and control subjects were seen consecutively, diagnosed, and treated in the Department of Dentistry, National Taiwan University Hospital from July 2007 to July 2017. Patients were diagnosed as having BD when they had RAS plus two of the following conditions including recurrent genital ulcers (on the scrotum and penile shaft of male patients or on the labia majora or labia minora of female patients), skin lesions (including erythema nodosum–like lesions, pseudofolliculitis, or papulopustular or acneiform lesions), and ocular lesions (including anterior or posterior uveitis, hypopyon, or retinal vasculitis) according to the criteria for diagnosis of BD proposed by the International Study Group for BD.[1,2] In this study, all the 63 BD patients had RAS which was characterized by the presence of at least one episode of oral ulcerations on the movable or non-keratinized oral mucosa per month since childhood.[12–16] RAS was further divided into major RAS (n = 19) when patients had recurrent oral ulcerations with a diameter larger than 1 cm and minor RAS (n = 44) when patients had recurrent oral ulcerations with a diameter smaller than 1 cm.[12,13] Of the 63 BD patients, 57 also had skin lesions, 53 also had genital ulcers, 21 also had ocular lesions, and 9 also had arthritis or arthralgia

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