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Evaluation of Some Immunological Markers in Patients with Behcet's Disease

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Abstract

The local study were selected 70 Iraqi Arab Patients (39 females and 31 males), who referred to HLA laboratory in teaching laboratories in Baghdad medical city from April 2009 – May 2010 were diagnosed with Behcete's disease, C-reactive protein concentration(CRP) was evaluated by ELISA technique, anti-nuclear antibody (ANA) and anti-neutrophil cytoplasmic antibody (ANCA) were evaluated by Indirect immunofluorescence technology. The result showed significant differences ($P<0.05$) of CRP concentration in patients group compared with control, negative antinuclear nuclear antibody in all cases while ANCA was positive in 8.5% of patients with type P (PANCA). These results lead to suggest that ANCA auto-antibody may have a role in triggering BD.

Keywords: Behcet's Disease, auto-antibody, CRP, ANCA

تقييم بعض المعلمات المناعية في مرضى مرض بهجت

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الخلاصة

تضمنت الدراسة المحلية 70 عراقي عربي مريض (39 انثى ،31 ذكر جمعت العينات من المرضى المراجعين لمختبر التطابق النسيجي/ المختبرات التعليمية / مستشفى بغداد التعليمي). قيست بروتينات الطور الحاد بطريقة الاليزا. كما قيست اضداد النواة واضداد سايتوبلازم الخلايا العدلة بطريقة التالق المناغي غير المباشر. اظهرت النتائج وجود فروق معنوية في تركيز بروتينات الطور الحاد بين المرضى والاصحاء .اضداد النواة كانت سالبة التفاعل في المرضى والاصحاء بينما كانت اضداد سايتوبلازم الخلايا العدلة موجبة وذات نمط محيطي في 8.5 % من مرضى بهجت بينما كانت النتيجة سالبة في السيطرة. مما يشير الى ان اضداد سايتوبلازم الخلايا العدلة هي احد الاضداد المناعية الذاتية التي يمكن ان يكون لها دور في حث المرض.

Introduction

Behcet's disease (**BD**) owes its name to the Turkish dermatologist Hulusi Behcete 1973, who described three complex symptoms of oral ulcer, genital ulcer and recurrent eye inflammation [1]. This disease is a chronic inflammation with characteristic lesions including oral ulcer, skin lesion, genital ulcer, ocular manifestation, arthritis, vasculitis and in some cases neurological gastrointestinal ulceration and large vessel involvement [2, 3]. It affects both gender and has worldwide distribution [4]. The diagnosis of disease depends on international study group for BD in 1990[2]. The etiological cause of BD is uncertain but due to genetic, environmental (bacteria and virus) and immunological factor have been proposed as causative agents. The pathogenesis is probably mediated by combination of these factors [2]. C –reactive protein (**CRP**) was elevated in BD with erythema nodosum [5].

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Antinuclear antibody (**ANA**) was detected in 41.7% mostly speckled pattern in BD patients [6]. Antinuclear antibody (ANA) is a group of auto-antibody with specificity against intracellular Ag [7]. Anti-neutrophil cytoplasmic antibody (**ANCA**) in an indication for small vessels vasculitis and is associated with BD. ANCA may be cytoplasmic anti neutrophil cytoplasmic antibody (**CANCA**) or may be perinuclear anti neutrophil cytoplasmic antibody (PANCA) [8].

Materials and Methods

This study included 70 BD (31 male and 39 female) patients with age mean 36.3± 1.4) years those were referred to HLA laboratory in teaching laboratories of Baghdad Medical City, and 20 (7 male and 13 female)apparently healthy person (control group) with age mean between (32.8±2.5) years. were selected to match with patients for age and gender, 5ml of venous blood were collected from patients as well as control, then transferred to test tubes, then centrifuged at 3000 rpm for 10 minutes in order to collect serum. All samples were evaluated for CRP by ELISA technique according to manufacture company (DRG/USA). Determination of ANA and ANCA were evaluated by indirect Immunofluorescence technique (Euro immune, UK).

Statistical Analysis

Computer program SPSS version 21was used by calculating percentage frequencies or person chi square test was used to assess significant differences, when $P<0.05$ is refers to significance.

Results and Discussion

The present study showed significant differences in con. of CRP ($p<0.05$) in patients of BD 5.9±0.1 mg/L compared to control group 3.5±0.04 mg/L as shown in fig (1), CRP increases significantly in patients of BD as compared with control group [9], [10] showed that all acute phase reaction parameters including α_2 macroglobulin, Erythrocyte sedimentation rate (**ESR)**, α trypsin in patients of BD had increased significantly in acute disease. CRP may be useful in diagnosis of BD. especially in recurrent oral ulcer during epithelial inflammation in recurrent oral ulcer (ROU). [11].The results of the present study found ANA to be negative in BD patients and control group Figure-2. These results were in agreement with [12]. ANA was also negative in two sisters with BD according to [13], others showed 21.9% of patients were positive for ANA in uveitis cases with BD and multiple sclerosis (MS) [14] ANCA in the present study showed p-ANCA pattern in 6 patients 8.5%, Figure-3, while c-ANCA was negative. ANCA is one of the autoantibody detected with unusual cutaneous manifestation of BD [14]. The development of ANCA positive depends on an autoimmune response. Once auto-antibody develops, they may activate neutrophil and monocyte and injure endothelial cell. The presence of ANCA was associated with chronic inflammation in BD [15]. In conclusion , the major immunological feature of BD consist of increased T –cell and B – cell response to Heat shock protein (**HSP**), increased neutrophilic activity , and alternation in cytokine level , although , the interrelationship between and among these feature are not clear. Neutrophil and monocyte activity may be increased in BD patients, compared with appropriate control subject .the increased seen to be related to presence HLA –B51 [16].

Conclusion

In the present study we concluded that, ANCA may be slightly associated in the pathogenesis of BD.

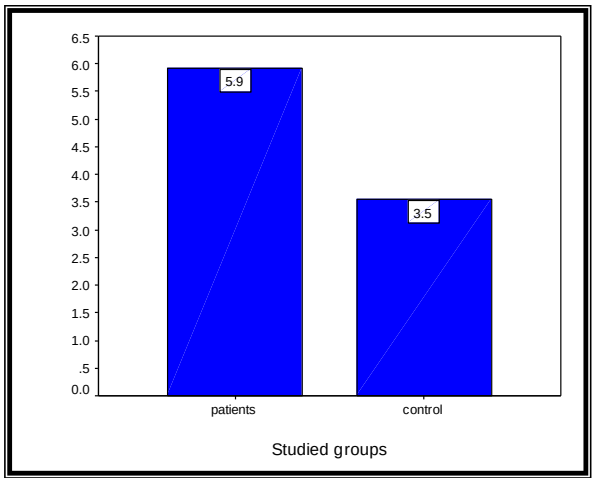

Figure 1- CRP concentration (mg/L) in studied groups

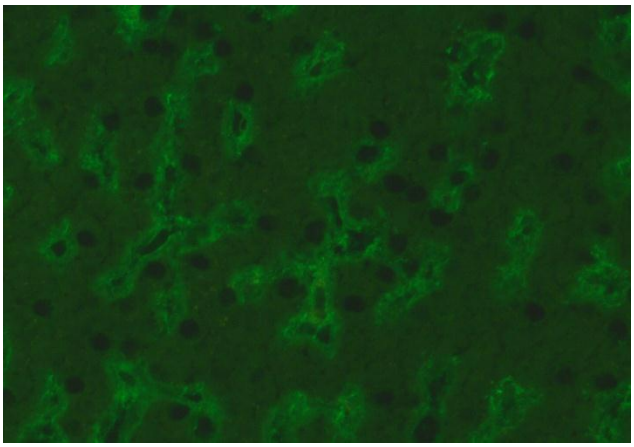

Figure 2- Negative result of ANA

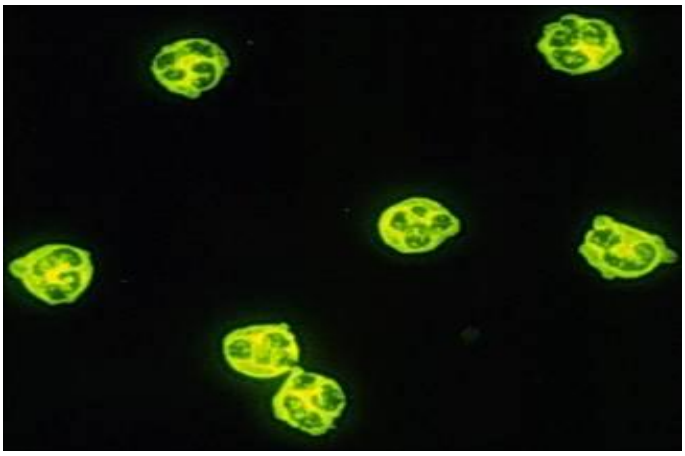

Figure 3- PANCA pattern

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