Changes in serum levels of Total protein , Albumin and Globulin in patients with Behcet's Disease.

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الخلاصة

للحصول على فكرة عن بعض التغيرات البيوكيميائية والتي من الممكن ان تلعب دور في امراضية مرض بهجت.
تم قياس مستوى البروتين الكلي،الالبومين والكلوبيولين في مصل الدم لـ70 مريض مصاب بمرض بهجت باستخدام الطرق اللونيـة Colorematric والحسابية Mathematic بالاضافة الى فحص سمية الخلايا اللمفاوية Microlymphocytotoixcity مقارنـة مع 35 من مرضى التقرح الفموي و 35 من الطبيعين كسيطرة سالبة.
لوحظ زيادة في البروتين الكلي Hyperproteinemia مع زيادة في الكلوبيولين hyperglobulinemia ونقصـان في مسـتوى الالبومين hypoalbuminema في مصول المرضى مقارنة مع مجاميع السيطرة.

ABSTRACT

In order to have an idea about some of biochemical changes which might play a role in the pathogenesis of Behcet's disease. Estimation of serum total protein, albumin, globulin and HLA typing were carried out in 70 patients with Behcets disease using colorematric, mathematic & microlymphocytotoxicity tests respectively, compared with 35 patients with recurrent oral ulcers, and 35 healthy control group.
Hyperproteinemia, hyperglobulinemia with hypoalbuminemia were observed in those patients in comparison to control groups.

INTRODUCTION:

Behcet's disease (BD) is considered as a chronic multi-systemic inflammatory disorder with mysterious aetio-pathegenesis[1,2,3]. Several biochemical abnormalities which in one way or another might play a role in the pathogenesis of this disease[3,4]. Whereas HLA B51(5) molecules by themselves could be responsible in BD[5,6]. Several studies have been accepted that changes in serum total protein or albumin levels associated with patients state[5,7]. Protein most often measured specifically, its function include control of fluid distribution between plasma, & the extracellular compartment, and binding with consequent inactivation of many endogenous & exogenous substances[7,8] while globulin play crucial role in the transport, storage, defence, blood clotting, maintenance of osmotic pressure, and other functions[7,8].
Several reports denote that hypoalbuminemia, and hypergama-globulinemia could be observed in BD patients[3,6].
This study was designed to measure serum total protein, albumin, globulin, and to elucidate the role of these biochemical elements in the pathogenesis of this disease in Iraqi patients

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MTERIALS & METHODS:

The study comprises three groups

1- Seventy Arab, Iraqi patients (P.) with positive history of Behcet's disease were included in this study, while attending the multi-discipline Behcet's disease clinic at Baghdad teaching hospital
2- Thirty five patients with recurrent oral ulcers as patient control group (P.C.).
3- Thirty five healthy control (H.C.).

METHODS:

Human Leukocyte Antigen Class I class I typing was carried out at Tissue typing laboratory in Al-Karama hospital using microlympho-cytotoxicity test[9].
Total Serum Protein (T.S.P.) & serum albumin (S.A.) levels were estimated to the all studied groups using colorimetric methods included Biuret & bromocresol green respectively[8].
Using the commercial reagents Kit (Randox) which was provided with procedure for doing these tests.

CALCULATION:

Total serum protein & serum albumin concentration in all samples were calculated by using the following equation

$$(g/dl) = \frac{A_{Sample}}{A_{Standard}} \text{ X standard conc.}$$

Absorbance (A) was measured immediately for total protein & albumin at 546nm, 630nm respectively. Serum globulin was calculated using mathematic method i.e. the conc. of total serum protein minus serum albumin give the concentrations of serum globulin[7].

Statistical Remarks:

Statistical analysis was done using students t-test[10], the data were expressed as mean M± standard deviation (S.D.), and P. values that considered statistically significant were, less than 0.05, 0.01, 0.001, and 0.005.

RESULTS & DISCUSSION:

From 70 patients with Behcet's disease 38 patient have HLA-B51(5) allel as well presented in table 1.

Table 1 . Total Serum Protein, Serum Albumin, and Serum Globulin in the Study Groups

gm./dl	Study Groups					
	Total BD patients No.=70	Patients with HLA-B51(5) +ve N0.=38	Patients with HLA-B51(5) -ve No.=32	Patients control No.=35	Healthy control No.=35	Reference normal values range
Total serum protein Mean±S.D.	***a 8.94±1.47	***a 9.22±1.41	***a 8.71±1.75	***a 8.63±1.19	7.03±1.10	6.0-8.0
Serum albumin Mean±S.D.	***b 2.86±0.61	***b 2.92±0.40	***b 2.78±0.65	**b 3.11±0.54	3.92±1.01	3.5-5.0
Serum globulin Mean±S.D	***a 4.87±1.21	***a 4.84±1.80	***a 4.93±1.0	*a 4.00±1.30	3.23±0.80	1.5-4.0

a= increased , b= decreased, Comparison with healthy group, t-test *P<0.05, **P<0.01. ***p<0.001

The mean of total serum protein, albumin & globulin (g/dl) levels in the studied groups (total BD patients, patients with HLA B51(5) + ve, patients with HLAB51(5) – ve (patients control & Healthy control groups) as clearly shown in table 1.

Significant elevation (p<0.001) in the levels of T.S.P were found in the studied groups in comparison to healthy control group table 1. Comparison between the study groups shows no significant difference (p>0.05) in the case of T.S.P. as clearly shown in table 2.

Table 2 . Statistical comparison between the patients studied groups

Between the study groups	Total protein P<	Serum albuminP<1	Serum globulin P<1
P.HLA-B51(5)+ve(1) vs. B51(5)-ve(2)	N.S.	N.S.	N.S.
P.HLA-B51(5)+ve vs. P.C. (3)	N.S.	*	N.S.
P.HLA-B51(5)-ve vs. P.C.	N.S.	**	*

1. Patients with HLA-B51(5)+ve , 2. Patients with HLA-B51(5)-ve, 3. Patients control
* P<0.05, ** P<0.01

Significant decrease (p<0.01,0.001) in levels of S.A.(g/dl) in the all studies groups was observed as compared with healthy control group table 1. Statistical comparison among these groups showed significant difference (p<0.05,0.01) between P. HLA-B51(5)+ve and P.HLA-B51(5) –ve group vs.P.C. group as well presented in table 2.

Moreover significant elevation (p<0.01,0.001) in the level of serum globulin (g/dl) in the studies groups as compared with healthy control group table 1, and significant difference (p<0.05) between P. HLA-B51(5)-ve vs.P.C group as clearly shown in table 2.

In agreement with few studies done by other workers[4], significant increase in T.S.P., with significant decrease of S.A. was clearly observed This hyperprotenemia may be caused by an increase in concentration of specific polyclonal immunoglobulins as a result of infections, yet, B-cell activation with polyclonal antibodies production in those patients was clearly observed[3].

On the other hand ,hypoalbuminemia, is well accepted marker in many diseases & in most instances is due to many factors[7,8], primarily the increase in catabolism following tissue damage of inflammation, with impaired synthesis or reduced absorption of amino acids caused by malabsorption syndromes or malnutrition[7,8]. So wheather this is applicable to our condition is to be elucidated. A gain these results support what is reported in our further study[3], that hyperproteniemia & hypoalbuminemia associated with higher rate of joint involvement occurrence in BD[3].

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