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Humoral Immunological Study of Pityriasis Alba

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Abstract

Humoral and complement C_3 studies were conducted on 29 pityriasis alba patients, 18 males and 11 females, at Hamad Medical Corporation, Doha, Qatar. The age ranged between 5-15 years and the mean duration of the disease was 5.4 months. No significant difference was found in serum IgG, IgM, IgE , IgA and C_3 between the patients and the control group. This is in controversy with the hypothesis of pityriasis alba being a form of atopy and also with the old theory of pityriasis alba being related to a septic focus or infection, since variations of serum antibodies are expected in these conditions.

Introduction

PITYRIASIS alba is a nonspecific dermatitis of unknown origin. It is characterized clinically by erythematous scaly patches which subside to leave areas of depigmentation [1].

The disease was regarded as a manifestation of the tendency to depigmentation which is commonly expressed by individuals possessing other characteristics of the atopic state. This was based on the trafuril responses of the affected patches of the skin [2].

Other investigators had the belief that pityriasis alba occurs more frequently in atopic patients but the disease is not certainly confined to atopic patients [3].

The aim of this work was to study the humoral immunological status of pityriasis alba patients and to elucidate the presence of any immunological similarities as those of atopic dermatitis.

Patients and Methods

This study was carried out at Hamad Medical Corporation, Doha, Qatar. A group of 29 patients, 18 males and 11 females, presenting clinically with pityriasis alba lesions were selected. The age of the patient, duration of the disease, character and distribution of the lesions were noted for each.

Patients who presented clinically with lesions characteristic of atopy, or who had a past history of atopy, or who had had a family history of atopy and patients with a recent history of an other cutaneous or systemic disease and who were on topical or systemic steroid therapy were excluded from the study.

The four major classes of immunoglobulins IgE, IgG, IgM, IgA and Complement C_3 were quantitatively estimated in the patient's serum. Serum IgE level (IU/ml) of 20 patients was estimated using enzyme-linked immunosorbent assay (ELISA) technique of Hoffman [9].

Serum IgG, IgA, IgM of 29 patients and C_3 level of 20 patients (mg/dl) were quantitatively measured by radial immunodiffusion technique of Mancine et al [10] using immunokits of bioMeriux, France. Results were compared statistically with 10 age-matched controls using the Student's t test. Results of $p < 0.05$ were considered significant.

Results

The age of the patients ranged between 5-15 years, with a mean of 7.6 years. The duration of the disease ranged between 2-9 months, with a mean duration of 5.4 months.

Twenty four patients presented with hypopigmented scaly macules on the face, and 5 had their lesions slightly erythematous.

Results for immunoglobulins and complement C_3 are summarized in table (1). No significant difference was found for the immunoglobulins and complement C_3 levels between the patients and the control group.

Table (1): Quantitative Estimations of Immunoglobulins and Complement of Pityriasis Alba Patients.

Test	No. of pts.	Pityriasis alba M ± S.D.	Control (n = 10) M ± S.D.	p -value
IgG	29	1289.8±313.61	1140±140.23	0.05
IgM	29	136.03±47.33	140±40.72	0.976
IgE	20	131.35±13.64	116.9±11.29	0.761
IgA	29	159.75±10.42	156.2±42.17	0.90.7
C_3	20	131.90±22.58	134.3±26.64	0.368

Discussion

Atopic dermatitis is an allergic disease, involved in its aetiopathogenesis immunological and immunopharmacological abnormalities [4].

Numerous studies have reported increased serum IgE [5,6,7] and increased serum IgG that was considered as secondary to cutaneous infection or as a reaction against inhalant or infested allergens [6,7,8,9].

Also, in atopic patients IgE occurs in the serum in the form of immune complexes with IgG and C_3 [12]. The increase of IgA and IgM was also reported in severely affected persons [13].

From the present work, levels of serum immunoglobulins and complement C_3 were within normal in pityriasis alba patients and were not significantly different from the control group. Patients were carefully selected, excluding atopic manifestations, family history of atopy or any other disorder apart from pityriasis alba that might have an influence on the immuno-

logical status of the patients. These findings do not agree with the hypothesis that pityriasis alba is a form of atopy [2] and favour the hypothesis that pityriasis alba is not certainly confined to atopic patients [3].

The association with atopic dermatitis may be related to dryness of the skin since it is a common factor in both.

The absence of antibody changes in pityriasis alba also rules out the old hypothesis of pityriasis alba being related to a septic focus or infection since in these conditions changes of serum antibodies are expected.

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