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Study the some concentrations of Immunoglobulins IgG ,IgM ,IgA in Psoriasis Patients

دراسة تراكيز بعض الكلوبيولينات المناعية IgA, IgM, IgG عند مرضى psoriasis الصدفية

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Abstract :

This study designs to study the effect Psoriasis disease on the concentration of some immunoglobulins in human. The study divided into two groups : psoriasis patients group including 20 Randomly individuals of both sexes with different ages. and control group , which also included 20 normal individual from healthy individuals not infected with any skin disease and were races and ages approach to psoriasis patients.The study included some tests of the immunological examination by measuring the concentrations of immunoglobulins IgG, IgM and IgA in both groups. The results indicated the presence of significant change ($p < 0.05$) a change in the mean level of immunoglobulins in samples infected as compared with a control. also found two phases of infection psoriasis, one active and represents the acute phase, and the other inactive and represents the phase chronic infection has been found a difference in concentration standard tests studied in both phases. Because after the active phase increasing the concentration of IgG and IgA. The inactive phase of the study to increase the concentration of IgM**.**

Key words : Psoriasis **,** acute phase , chronic phase , Immunoglobulins**.**

الملخص :

أعدت هذه الدراسة لمعرفة مدى تأثير مرض الصدفية على تراكيز بعض الكلوبيولينات المناعية في جسم الإنسان تضمنت الدراسة مجموعتين : مجموعة مرضى الصدفية حيث أخذت 20 عينة عشوائية من المرضى المصابين بداء الصدفية إذ تم اختيارهم عشوائيا من الجنسين وبأعمار مختلفة , ومجموعة السيطرة التي تضمنت أيضا 20 عينة من أشخاص أصحاء غير مصابين بأي مرض جلدي أو غيره وكانوا بأجناس وأعمار مقاربة لمرضى الصدفية . تضمنت الدراسة إجراء بعض الفحوصات المناعية تمثلت بقياس معدل تركيز الكلوبيولينات المناعية IgM, IgG وIgA في كلا المجموعتين . أشارت النتائج إلى وجود تغير معنوية ($p<0.05$) في مستوى تراكيز الكلوبيولينات المناعية في عينات المصابين مقارنة بمجموعة السيطرة. كما وجد طوران للإصابة بالصدفية أحدهما نشط و يمثل الطور الحاد ، والأخر غير نشط و يمثل الطور المزمن للإصابة , وقد وجد اختلاف في تراكيز معايير الفحوصات المدروسة في الطورين كليهما. إذ اثر الطور النشط Active بزيادة تركيز IgA و IgG . أما الطور غير النشط فقد عمل على زيادة تركيز IgM .

مفتاح الكلمات : مرض الصدفية **,** الطور الحاد **,** الطور المزمن **,** الكلوبيولينات المناعية.

Introduction

Psoriasis is a chronic, genetically determined and immunologically mediated inflammatory skin disease that affects 1–3% of the world's population.[1] It is a relapsing and remitting condition that may be exacerbated by environmental factors such as trauma, stress and infection.[2]

Psoriasis can also affect the finger nail abnormalities , scalp and joints. Psoriatic arthritis, a seronegative inflammatory arthritis associated with psoriasis or psoriatic nail disease, affects between 6% and 34% of patients with psoriasis, although it is most prevalent in patients with severe skin disease.[3,4] Although the exact cause of psoriasis is not known, a wide number of factors interplay to cause this debilitating disorder. The defense system of the body known as the immune system is affected by these factors, which results in the formation of additional blood vessels and increased number of skin cells.[5] Psoriasis is said to be a hereditary (genetic) disorder, as it tends to affect members of the same family. Increased stress (both physical and emotional) has been

proposed to precipitate the occurrence of psoriasis in individuals who are genetically prone to develop psoriasis. Streptococcal throat infections (tonsillitis), Candida infections (thrush) and certain yeast infections can result in flaring up of the psoriasis. Some of the medications such as lithium, beta-blockers and antimalarials have been known to aggravate the existing psoriasis. Other factors such as obesity, increased alcohol intake or smoking also been associated either with the occurrence or with the severity of the disorder.(6)

Psoriasis is typically characterized by the formation of circular, red eruptions (papules) or plaques with a gray or silvery-white, dry scale on the skin. These eruptions or scales are noticed in a symmetrical pattern on the scalp, elbows, knees, lower back region and in the body folds such as the armpits.(5) The joints (referred to as psoriatic arthritis), nails and genital areas may also be affected. Occasionally these plaques may be observed on the inner cheek or tongue. Itching at the affected sites is a commonly noted symptom, which may or may not be associated with burning sensation or pain.(2) A small of bleeding may be noticed if the scales on the skin. In case of psoriatic arthritis, joint pain is noted along with the signs and symptoms of the skin. The affected nails may display pits on the nail surface with accumulation of yellowish material under the nail plate or detachment of the nails.(7)

Based on the appearance, psoriasis has been categorized as follows:

1- Plaque-type psoriasis—This is the commonest type of psoriasis, characterized by scales on the skin.
2- Guttate psoriasis—Small oval/tear drop-shaped papules.
3- Pustular psoriasis—Pus-filled eruptions; these may be observed only in certain specific areas (localized) or spread over a wide area (generalized)
4- Erythrodermic psoriasis—scales associated with reddening of the skin (erythema).(1,8)

Common complications associated with psoriasis are the burning sensation or pain in the affected areas. Intense scratching can result in infection of the affected areas. Psoriasis may be disabling in certain individuals who suffer from the severe variant. The symptoms may relapse after a symptom free period.(9)

Immunoglobulins are five major groups in the serum: IgA , IgG, IgM, IgD, and IgE. They are synthesized in plasma cells(β cell) . Their synthesis is stimulated by an immune response to foreign particles and micro organisms such as bacteria & viruses . The Immunoglobulins are not synthesized to any extent by the neonate. IgG crosses the placenta; the IgG present in the newborn's serum is synthesized by the mother. IgM does not cross the placenta but rather is the only Immunoglobulins synthesized by the neonate. The concentration of IgM initially is 0.21 g/L, but this increases rapidly to adult levels by about age 6 months. IgA is virtually lacking at birth (0.003 g/L), increases slowly to reach adult values at puberty, and continues to increase during the life time.(10)

The study aimed to see the effect of psoriasis on the some immunological concentration change in the infected person's body and its effect on the body's immune response, whether in the case of psoriasis active or inactive, in order to diagnose the severity of the infection and especially the early ones and find a treatment.

Materials and Methods:

The groups of experimental . randomly & equally divided into two groups as the following:-

1. control group: - This group include 20 healthy individual not infected with any skin disease, or any other chronic disease such as blood pressure, diabetes and liver disease, kidney and other and were between the ages and races approach for patients with psoriasis.
2. Psoriatic Patients group: This group include 20 individual from psoriasis patients of acute-phase and chronic-phase with different ages and from both sexes.

Blood samples were collected via venous blood from all experimental groups ,left for (15min) at room temperature, then centrifuged (at 2500 rpm from 5min) to get the serum to Measuring the following parameter IgG, IgA and IgM were determined in serum samples of all studied groups according to (fahay&mckelevey, 1965)(11) and (bernne, 1974)(12) methods.

Statistical analysis:

Data presented were the means and standard deviations, student -t- test was used to compare the significance of the difference in the mean values of two groups. ($P \leq 0.05$) was considered statistically significant[13]. The overall predictive values for the results in all studied groups were performed according to program of office XP 2002.

Results and Discussion:

Table (1) showed the results of Immunoglobulins (IgG, IgM, IgA) in sera of psoriasis patients and control groups.

Where he found an increase a significant in the concentration of IgG (1935.3 ± 304.9) mg/dl compared with The normal value for the control (943.2 ± 330.9) mg /dl Table (1) and Figure (1). These results agreed with other students. [14], [15],[16]

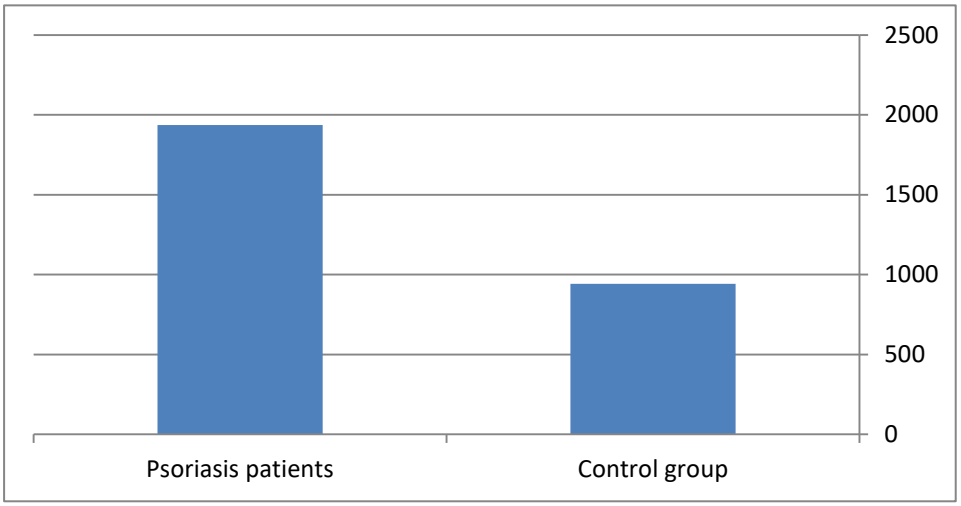
when compared with control the concentration of immunoglobulin in the two phases psoriasis (acute and chronic) note decrease its concentration in the acute phase and a height in the chronic phase. For several reasons, including: Effect of injury in Immunologic regulation (IR), Who works on creating a state of balance in the construction and demolition of immunoglobulins.[15] Or may be due to the nature of the small molecule Which can migrate through the blood vessels easily.[17] .Or be due to the disappearance or atrophy this Immunoglobulin during the acute phase of this disease. [18] Table(2) and Figure (6).

While the results recorded decreasing in the concentration of IgM in patients (40.3 ± 20.76) mg /dl compared with control (155.3 ± 99.1) mg /dl. Table (1) and Figure (2) These results. These While notes decreasing in concentration of IgM in results agreed with other students. [14] ,[15]. chronic psoriasis and this shows its transformation into Immunoglobulin G (IgG). [19] Table(2) and Figure(4). Also the results showed increase in concentration of IgA (451.0 ± 175.6) mg /dl compared with control (161.5 ± 95.7) mg /dl Table (1) and Figure (3) These results agreed with other students.[20], [21] and may be due to relevance IgA with cytokeratins factor in status of injury psoriasis. [22]And the results indicated an increase in the level of IgA in acute phase of psoriasis patients compared with chronic phase, at which the characteristic of acute phase for responsible cell about this conformation transform gradually to IgM.[18] Table(2) and Figure(4).

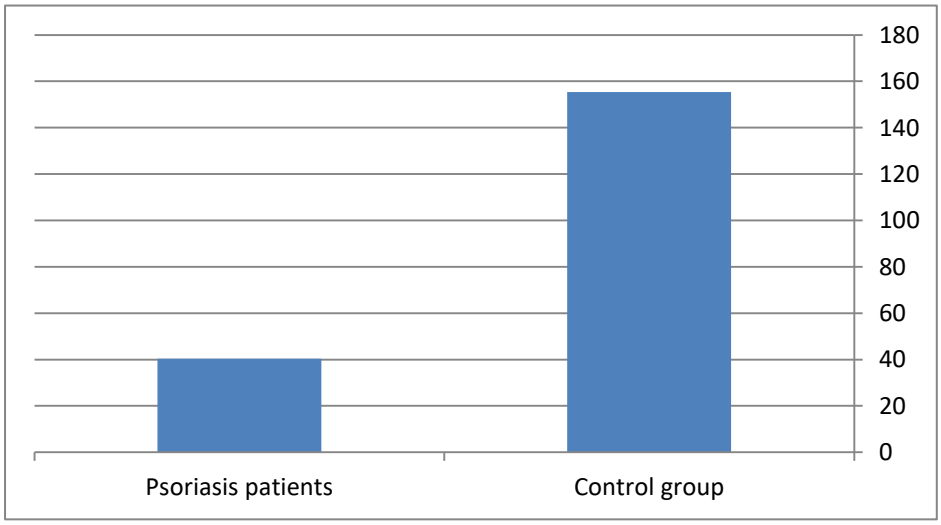
Table (1) The IgG ,IgM & IgA concentration in sera of two studied groups.

Parameter	Control group (Mean ± S.D.)	Psoriasis patients (Mean ± S.D.)
IgG	943.2 ± 330.9*	1935.3 ± 304.9
IgM	155.3 ± 99.1*	40.3 ± 20.76
IgA	161.5 ± 95.7*	451.0 ± 175.6

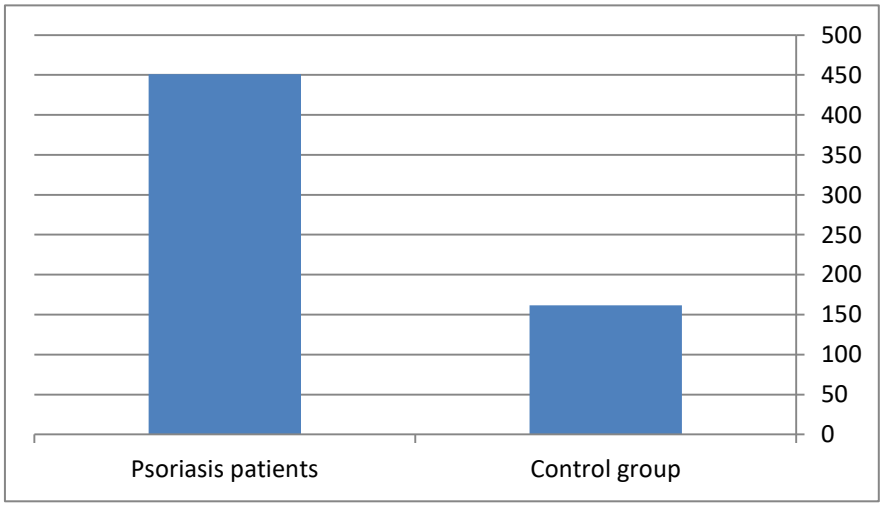
*($p<0.05$)



Figure(1) The IgG concentration in sera of two studied groups



Figure(2) The IgM concentration in sera of two studied groups

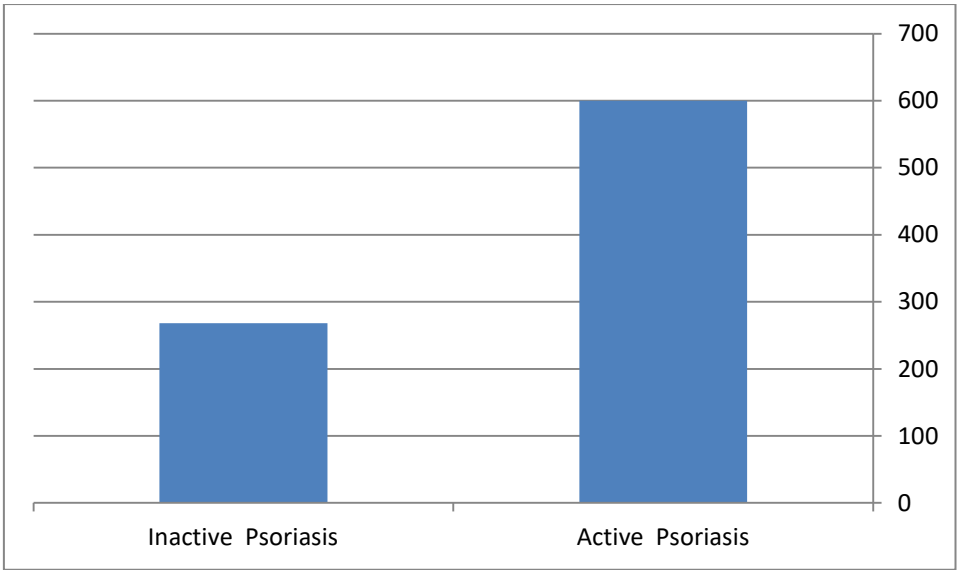


Figure(3) The IgA concentration in sera of two studied groups

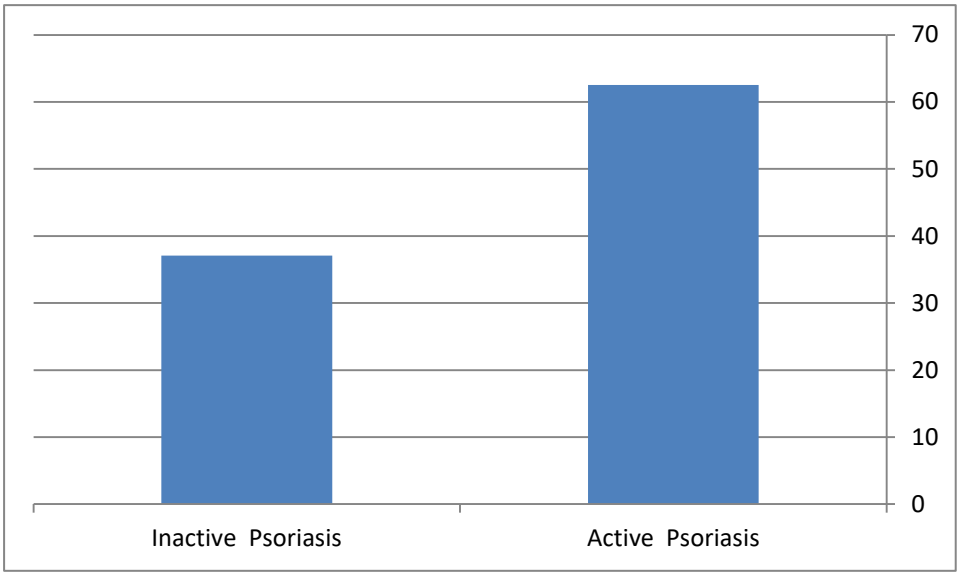
Table (2) The IgG ,IgM &IgA concentration in sera of Psoriatic Patients group(acute and chronic phases) .

Parameter	Active Psoriasis (mean ± S.D.)	Inactive Psoriasis (mean ± S.D.)
IgG mg/dl	1930.7 ± 600.77*	2096.55 ±362.4
IgM mg/dl	62.54 ± 36.86*	37.05 ± 26.76
IgA mg/dl	599.84 ± 316.04*	268.3 ± 216.9

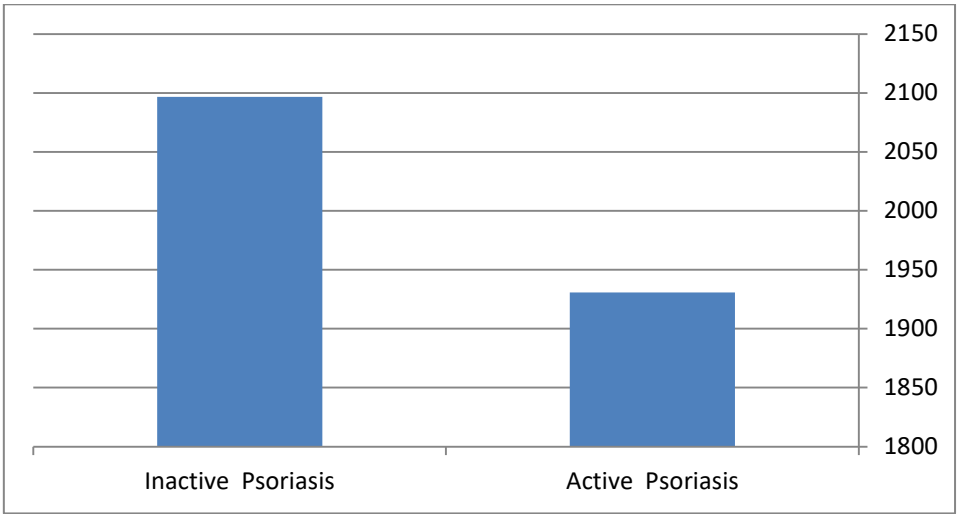
*($p<0.05$)



Figure(4) The IgA concentration in sera of Psoriasis patients



Figure(5) The IgM concentration in sera of Psoriasis patients



Figure(6) The IgG concentration in sera of Psoriasis patients

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