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ORIGINAL RESEARCH

Assessment of serum ADA and hsCRP level in psoriatic patients

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ABSTRACT

Background: Psoriasis is a chronic, immune-mediated skin disease. The present study was conducted to assess serum ADA and hsCRP level in psoriatic patients.

Materials & Methods:66 patients of Psoriasis of both genders were divided according to PASI score <10 defined psoriasis asmild, between 10 and 20 as moderate, and >20 assevere. Each group contains 22 patients. 25 healthy subjects were included as a control group. Serum ADA and hsCRP levelwere measured in psoriatic patients.

Results: Control group had 10 males and 15 females, mild had 13 males and 9 females, moderate had 12 males and 10 females and severe had 11 males and 11 females. ADA level was 8.2 U/L in control group and 23.1 U/L in psoriasis patients. The mean hsCRP level in control group was 9.0 ng/ml and 54.2 ng/ml in psoriasis group. The difference was significant ($P< 0.05$).

Conclusion: Serum ADA and hsCRP had higher levels among psoriatic patients than healthy controls.

Key words: Serum ADA, hsCRP, Psoriasis

Introduction

Psoriasis is a chronic, immune-mediated skin disease that affects approximately 3% of the US population and an estimated 125 million people worldwide. Plaque psoriasis is the most common variant, accounting for more than 80% of the psoriasis cases.[1] Plaque psoriasis is characterized by erythematous scaly patches or plaques that occur commonly on extensor surfaces, but it can also affect the intertriginous areas, palms, soles, and nails. Psoriasis affects men and women equally, and it affects adults more than children. The most rapid advancements in plaque psoriasis have been in its pathogenesis, genetics, comorbidities, and biologic treatments.[2]

Adenosine deaminase (ADA) is an enzyme involved in purine metabolism and is essential for the breakdown of adenosine from food and the turnover of nucleic acids in tissues. It is considered as a marker of nonspecific T-cell activation.[3]C-reactive protein (CRP) is an important laboratory parameter for tissue damage, infection, and inflammation. High-

sensitive CRP (hsCRP) can detect lower levels of CRP than the standard CRP measurement.[4] Increased hsCRP is found in many skin diseases including allergic contact dermatitis, mycosis fungoides, hidradenitis suppurativa, and psoriasis.[5] Increased CRP in psoriatic patients was correlated with active arthritis, psoriasis area severity index (PASI) score, and with an increased incidence of cardiovascular diseases.[6]The present study was conducted to assess serum ADA and hsCRP level in psoriatic patients.

Materials & Methods

The present study comprised of 66patients of Psoriasis of both genders. The consent was obtained from all enrolled patients.

Data such as name, age, gender etc. was recorded. Psoriatic patients were divided according to

PASI score <10 defined psoriasis asmild, between 10 and 20 as moderate, and >20 assevere. Each group contains 22 patients. 25 healthy subjects were included as a control group. Serum ADA and hsCRP levelwere measured in psoriatic patients.Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table I Distribution of patients

Gender	Control	Mild	Moderate	Severe
Male	10	13	12	11
Female	15	9	10	11

Table I, graph I shows thatcontrol group had 10 males and 15 females, mild had 13 males and 9 females, moderate had 12 males and 10 females and severe had 11 males and 11 females.

Graph IDistribution of patients

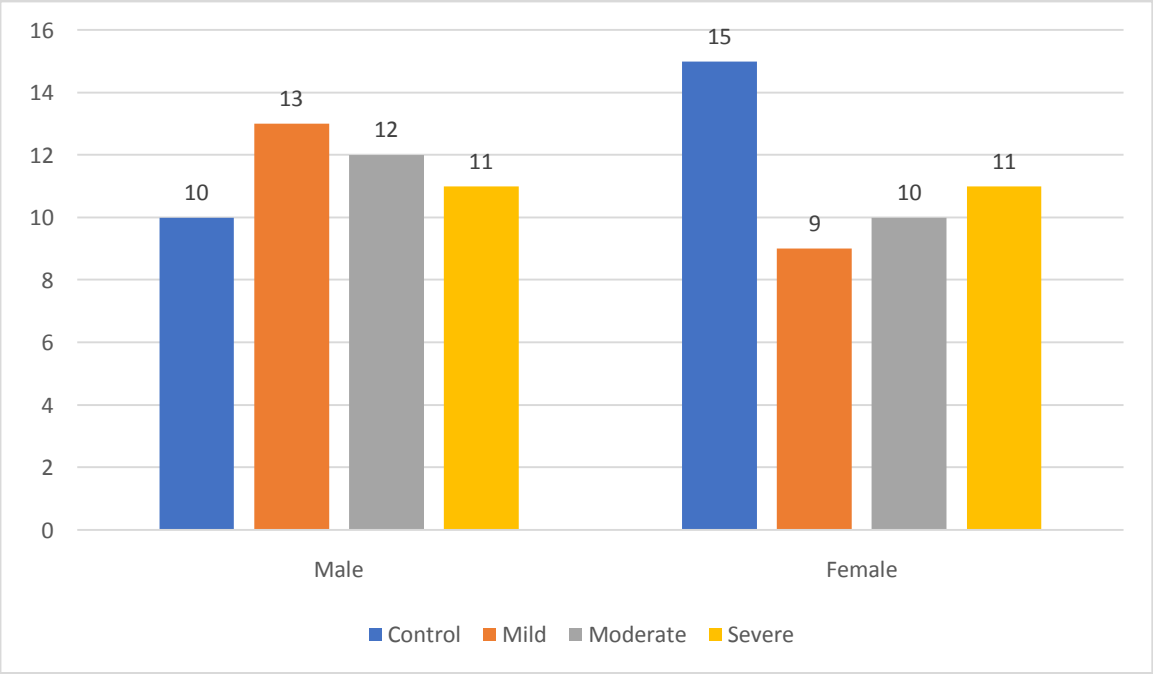
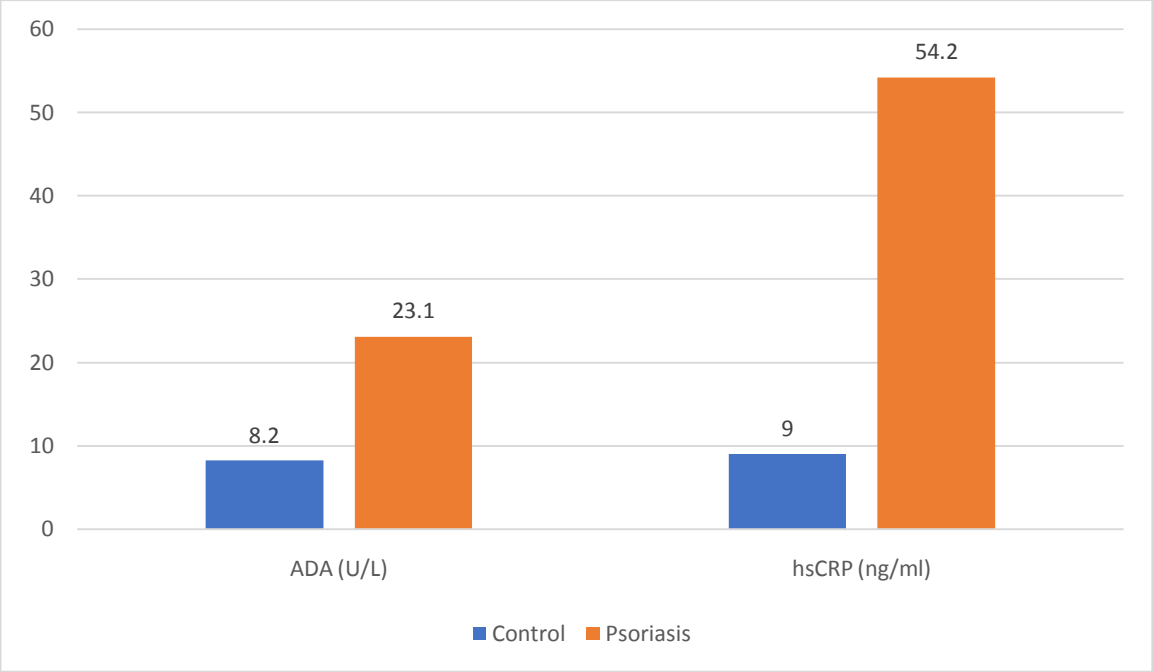


Table II Comparison of adenosine deaminase and high-sensitive C-reactive protein level

Parameters	Control	Psoriasis	P value
ADA (U/L)	8.2	23.1	0.04
hsCRP (ng/ml)	9.0	54.2	0.02

Table II, graph I shows that ADA level was 8.2 U/L in control group and 23.1 U/L in psoriasis patients. The mean hsCRP level in control group was 9.0 ng/ml and 54.2 ng/ml in psoriasis group. The difference was significant (P< 0.05).

Graph IComparison of adenosine deaminase and high-sensitive C-reactive protein level



Discussion

The pathogenesis of plaque psoriasis involves a feed-forward mechanism of inflammation including primarily the T-helper cell type 17 (TH17) pathway. Genetic factors play a critical role in the development of psoriasis, and environmental factors can exacerbate psoriasis.[7] Other morphologic variants of psoriasis include guttate psoriasis, erythrodermic psoriasis, and pustular psoriasis.[8]Clinical features of psoriasis differ depending on the psoriasis variant. Psoriasis variants include plaque psoriasis, guttate psoriasis, erythrodermic psoriasis, and pustular psoriasis.[9] While one variant typically predominates in an individual person, different variants may coexist in a person at any single point in time. Most variants of psoriasis share 3 key clinical features of erythema, thickening, and scale.[10]The present study was conducted to assess serum ADA and hsCRP level in psoriatic patients.

We found that control group had 10 males and 15 females, mild had 13 males and 9 females, moderate had 12 males and 10 females and severe had 11 males and 11 females. Moustafa et al[11] assessed serum ADA, hsCRP, SUA, and ESR in psoriatic patients and their correlation with PASI score. This study included 60 psoriatic patients divided according to PASI score into three groups (mild, moderate, and severe) each containing 20 patients. PASI score 20 severe. Twenty healthy subjects of matched age and sex were included as control. Serum ADA, hsCRP, SUA, and ESR were evaluated for patients and controls. Correlations of ADA,

hsCRP, SUA, and ESR with PASI scores were done. While ADA, hsCRP, SUA, and ESR showed a significant increase in psoriatic patients compared with that of the controls ($P<0.05$) and no correlations with PASI score ($P>0.05$). The frequency of joint affection increased with increasing severity of psoriasis (5%, 10%, and 25% in mild, moderate, and severe psoriasis, respectively).

We found that ADA level was 8.2 U/L in control group and 23.1 U/L in psoriasis patients. The mean hsCRP level in control group was 9.0 ng/ml and 54.2 ng/ml in psoriasis group. Yildirum et al[12] found no correlation between serum ADA and PASI score. In spite of the fact that PASI score is the most widely used measure for assessment of psoriasis, it has a number of limitations including inter- and intra-observer variability. Kwon et al[13] found no significant difference between SUA of psoriatic patients and healthy population and reported a positive correlation of SUA with PASI score. They attributed this result to the lower skin involvement in their patients that might not have been sufficient to induce hyperuricemia.

There are 3 other less-frequently observed variants of psoriasis: guttate psoriasis, erythrodermic psoriasis, and pustular psoriasis.[14] Guttate psoriasis comprises 2% of psoriasis cases and is characterized by multiple 3- to 5-mm confetti-like, pink scaly patches. Approximately 66% of new-onset guttate psoriasis is preceded by an upper respiratory tract infection such as streptococcal infection, and most of these cases resolve spontaneously in weeks to months but can become chronic.[15] Erythrodermic psoriasis is an uncommon severe variant in which patients develop coalescent erythema, scales, or exfoliation involving at least 75% of the body. Although erythrodermic psoriasis occurs in only 2% to 3% of psoriasis cases, it is treated as a dermatological emergency because it can be associated with electrolyte disturbances and desquamation that can be life-threatening. Another uncommon variant is pustular psoriasis, which is characterized by sterile pustules and erythema.[16]

Conclusion

Authors found that serum ADA and hsCRP had higher levels among psoriatic patients than healthy controls.

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