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Original Article

Psoriasis in Pakistani population: Associations, comorbidities, and hematological profile

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Abstract

Objective To observe the clinical features, laboratory profile, associations and comorbidities of psoriasis in a segment of Pakistani population.

Patients and methods This cross-sectional descriptive study was carried out at PAF base hospital, Sargodha from January 2010 to December 2010. One hundred consecutive patients with a diagnosis of psoriasis were included in the study. The diagnosis was confirmed by one of the consultant dermatologists. Pretested, especially designed questionnaire was filled by all the participating patients. Information regarding age, sex, duration of disease, clinical type and severity of disease, nail and joint involvement, koebnerization, associated diseases, and hematological profile including hemoglobin level, blood ESR, uric acid level and its association with joint involvement were recorded.

Results Out of the 100 consecutive patients included in the study, 71 were males and 29 were females. Mean age of onset was 39.8 years. 88 patients had chronic plaque psoriasis, 8 had guttate and 4 had erythrodermic psoriasis. 46 patients had some sort of joint involvement and 29 patients had some sort of nail involvement. Only 14 patients gave history of koebnerization. Only 10 patients had associated skin disease while 15 patients had some associated medical disease. Mean hemoglobin levels were 13.25 gm/dl. Mean ESR was 22.6 mm/h. Rise in serum uric acid level was significantly associated with psoriatic arthritis.

Conclusion Pakistani patients with psoriasis are more likely to have a lower hemoglobin and a raised ESR. Rise in serum uric acid level is associated with joint involvement.

Key words
Psoriasis, clinical features, associations, comorbidities, hematological profile, hemoglobin, ESR, uric acid.

Introduction

Psoriasis is a common skin disease with an estimated worldwide disease burden of 120-180 million people and prevalence estimated between 0%-11.8%.[1-3] Several dermatological and non-dermatological associations and comorbidities of psoriasis have been described in the literature.[4-6] These associated diseases and comorbidities tend to worsen the burden of disease, as well as, reduce the quality of life indices in an otherwise benign skin disorder.

No population based studies to assess the prevalence and associated conditions of psoriasis have been conducted in Pakistan. We have found severe paucity of data in this regard in the local literature and almost all the available data

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that we have on psoriasis come from small hospital-based studies. Similarly, very few studies have addressed the hematological profile in psoriasis is present.[7-10]

To ascertain the associations, comorbidities, and blood indices in psoriasis in Pakistani patients, we carried out this small study to provide a baseline for researchers to build on.

Patients and methods

This descriptive, cross-sectional study was carried out at the department of dermatology, PAF base hospital Sargodha, Pakistan from January 2010 to December 2010. The study was approved by the institutional review board. Written, informed consent was obtained from all the participating patients.

Hundred consecutive cases of psoriasis reporting to the dermatology outpatient department were included. The diagnosis was confirmed by one of the consultant dermatologists. Pretested, especially designed questionnaire was filled by all the participating patients. Those having language problems were assisted. The questionnaire included information about age, sex, age of onset of psoriasis, clinical type of psoriasis, associated dermatological or medical conditions, presence or absence of joint pain and types of treatment sought by the patient. Second part of the questionnaire was filled by a health care professional who recorded type of psoriasis, nail involvement, koebnerisation and PASI score. Blood samples were then drawn from the patients and tested for hemoglobin levels, ESR mm/h, serum uric acid levels and blood groups.

The data were then transferred to the statistical program SPSS 14.0 and analyzed. Descriptive analysis, frequencies, mean, standard deviations, and chi square test were used for analysis.

Results

Out of the 100 consecutive patients included in the study, 71 were males and 29 were females. Age ranged from 5 years to 75 years. Mean age of onset was 39.8 years (standard deviation=15.8 years, standard. error=1.95 years), 40 patients were in the age group 31-45 years while 7 patients were below 15 years of age.

Eighty eight patients had chronic plaque psoriasis, 8 had guttate and 4 had erythrodermic psoriasis. Lower limbs were the commonest involved region (87%) while genital region was the least commonly involved (3%). Mean PASI score was 27.5$\pm$42.5, range was 0-9 in 40 patients and 8 patients had a score of 30-39. Rest of the details is given in **Table 1**.

Forty six patients had some sort of joint involvement and 29 patients had some sort of nail involvement. Only 14 patients gave history of koebnerization. Only 10 patients had associated skin disease while 15 patients had some associated medical disease. Details of associations are given in **Table 2**.

Hematological profile revealed that the commonest blood group was O positive which was found in 36 patients while the least common was B negative found in only one patient. Ninety three patients had Rh positive blood group. Mean haemoglobin levels were 13.25 gm/dl, 46 patients had a blood hemoglobin level of 11-14 gm/dl while only 4 patients had a blood hemoglobin level of 7-10 gm/dl. Mean ESR was 22.6 mm/h. 68 patients had a blood ESR of 1-20 mm/h. Mean uric acid level was 314.1 µmol/liter. 26 patients had blood uric acid level of 301-400 micro mole/liter. Rise in serum uric acid level was significantly associated with psoriatic arthritis (**Table 3**).

Table 1 Areas of involvement along with PASI scores.

Sites involved	*Frequency*	*95% CI*
Scalp	52	41.8 to 62.0 %
Face	13	07.4 to 21.6 %
Upper limbs	85	76.1 to 91.0 %
Lower limbs	87	78.4 to 92.6 %
Palms and soles	18	11.3 to 27.2 %
Trunk	45	35.1 to 55.2 %
Genitals	03	0.8 to 9.1 %
PASI Scores	*Frequency*	*Percent*
0 to 9	40	40.0
10 to 19	22	22.0
20 to 29	10	10.0
30 to 39	8	08.0
40 and above	20	20.0

Mean PASI=27.5, minimum=1.01, standard deviation=42.5, maximum=201.04, standard error of mean=4.2.

Table 2 Disease associations.

Skin Diseases (n=10)	*N (%)*
Eczema	3 (30.0)
Tinea pedis	2 (20.0)
Hemangioma	1 (10.0)
Lipoma	1 (10.0)
Pityrosporum folliculitis	1 (10.0)
Urticaria	1 (10.0)
Vitiligo	1 (10.0)
Medical Illness (n=15)	
Diabetes + hypertension	6 (40.0)
Tuberculosis	2 (13.3)
Urinary tract infection	2 (13.3)
Angina	1 (6.7)
Gastritis	1 (6.7)
Infertility	1 (6.7)
Psychosis	1 (6.7)
Sciatica	1 (6.7)

Table 3 Hematological profile.

Blood groups (n=100)	*N (%)*
A-	4 (4.0)
A+	16 (16.0)
AB+	9 (9.0)
B-	1 (1.0
B+	32 (32.0)
O-	2 (2.0)
O+	36 (36.0)
Hemoglobin (n=73)	
7 to 10 g/dl	4 (5.5)
11 to 14 g/dl	46 (63.0)
15 to 18 g/dl	23 (31.5)
Mean =13.25 (g/dl), minimum =7.6 g/dl, standard deviation=2.04, maximum = 18 g/dl, standard error of mean =0.2	
ESR range (n=100)	
1 to 20 mm	68 (68.0)
21 to 40 mm	22 (22.0)
41 to 60 mm	6 (6.0)
61 to 80 mm	3 (3.0)
81 to 100 mm	1 (1.0)
Mean ESR = 22.6, minimum=03 mm, standard deviation=14.0, maximum=86 mm, standard error of mean=1.44 mm.	
Uric acid (n=31)	
101 to 200 µmol/l	1 (03.2)
201 to 300 µmol/l	8 (25.8)
301 to 400 µmol/l	20 (64.5)
401 to 500 µmol/l	2 (06.5)
Mean=314.19 µmol/l, minimum=185 µmol/l, standard deviation = 51.36 µmol/l, maximum=456 µmol/l, standard error of mean=9.22 µmol/l	

Discussion

Sex distribution in our series of patients was 71% males and 29% females. Other studies from Pakistan have shown variable data. One study from Jinnah Hospital, Lahore has found 58% males and 42% females.[10] Another study from Liaquat University of Medical and Health Sciences has found 56% males and 44% females.[11] Another study from the same center has found similar results.[7] A recent study from India has reported similar data.[2] The conflict between our data and other studies can only be resolved by large scale population-based studies. Mean age of onset in our series of patients was 39.8 years. Other studies from Pakistani population have presented similar results.[11,12] A rather comprehensive study from India has reported a somewhat lower mean age of onset.[2] A recent study from Korea has also reported similar results.[13] Researchers from Iran have also reported a mean age of onset of 33.3 years.[14]

Joint involvement in our patients was 46% while another study from Jinnah hospital Lahore has reported 35% frequency.[15] Another large study from Pakistan has shown a joint involvement of 31%.[16] On the other hand, a study from Iran on

150 patients has revealed a joint involvement of 73%.[14]

Nail involvement in our patients was 29%. Another larger study by us has shown a nail involvement of 34%,[16] A small study done exclusively on nail involvement has found a frequency of 54%.[12] Likewise, data from India is also conflicting and frequencies ranging from 3%-74% have been reported.[2]

Coming to the hematological profile, our series of patients revealed a mean hemoglobin level of 13.25 gm/dl. The only other study from Pakistan that we could find has shown a mean hemoglobin level of 12.62 gm/dl.[7] Comparing with normal controls, the authors have found a low haemoglobin level in psoriatics. The same study also found a higher ESR in psoriatics as compared to normal controls. They found a mean ESR of 30.2 mm/h in psoriatics which is higher than our finding of 22.6 mm/h. Other authors have suggested a role of ESR as well as other inflammatory markers in assessing response to treatment.[17] Hyperuricemia is a feature of disease severity in psoriasis especially when arthritis is associated.[18] Our results show a significant association between serum uric acid levels and psoriatic arthritis. The only other study from Pakistan addressing the point also shows corroborative data.[19]

Associated skin diseases found in our series of patients appear to be incidental finding as higher incidence of these diseases in psoriatics has not been reported. Several medical associations have been reported with psoriasis from around the world. Diabetes and hypertension are known to be associated with psoriasis as shown in our data too. Other researchers from Pakistan have also reported similar results. Mental illnesses of varying proportions and ischemic heart disease have been associated with psoriasis but our data suggest very low frequency in our population.

This study is limited by being hospital based and having a very small sample size. To better understand psoriasis in our population and to provide better care for our patients, we need to develop a database of disease demographics. This study is a small effort in this direction. We need large population based studies to truly establish the disease burden in our society.

References

1. Pietrzak A, Michalak-Stoma A, Chowdoroska G, Szapietowski J. Lipid disturbances in psoriasis: An update. *Mediators Inflamm.* 2010; doi:10.115/2010/535612.
2. Dogra S, Yadav S. Psoriasis in India: Prevalence and pattern. *Indian J Dermatol Venereol Leprol.* 2010;**76**:595-601.
3. Gelfand JM, Weinstein R, Porter SB *et al*. Prevalence and treatment of psoriasis in United Kingdom: a population-based study. *Arch Dermatol*. 2005;**141**:1537-41.
4. Augustin M, Glaeske G, Radtke MA *et al*. Epidemiology and comorbidity of psoriasis in children. *Br J Dermatol.* 2010;**162**:633-6.
5. Gisondi P, Tessari G, Conti A *et al*. Prevalence of metabolic syndrome in patients with psoriasis: a hospital-based case-control study. *Br J Dermatol*. 2007;**157**:68-73.
6. Prodanovich S, Kirsner RS, Kravetz JD *et al*. Association of psoriasis with coronary artery, cerebrovascular, and peripheral vascular diseases and mortality. *Arch Dermatol*. 2009;**145**:700-3.
7. Bajaj DR, Mahesar SM, Ghani MH. Hemoglobin content and sedimentation properties of erythrocytes in psoriasis. *J Pak Assoc Dermatol.* 2008;**18**:132-7.
8. Nasreen S, Ahmed I, Effendi S. Frequency and magnitude of anxiety and depression in patients with psoriasis vulgaris. *J Coll Physicians Surg Pak*. 2008;**18**:397-400.
9. Naqqash S, Deen T, Naqqash S, Butt AQ. Family history of psoriasis and recent infectious disease are risk factors for the first episode of acute guttate psoriasis. *J Pak Assoc Dermatol.* 2004;**14**:123-8.

10. Khan GA, Malik LM, Jahangir M. Prevalence of smoking, alcohol, and comorbid conditions in psoriasis. *J Pak Assoc Dermatol.* 2010;**20**:212-6.
11. Bajaj DR, Mahesar SM, Devrajani BR, Iqbal MP. Lipid profile in patients with psoriasis presenting at Liaquat University Hospital Hyderabad. *J Pak Med Assoc*. 2009;**59**:512-5.
12. Ahmed I, Nasreen S. Frequency and pattern of nail changes in patients with psoriasis vulgaris. *J Pak Assoc Dermatol.* 2009;**19**:149-9.
13. Kim GW, Park HJ, Kim HS *et al*. Analysis of cardiovascular risk factors and metabolic syndrome in Korean patients with psoriasis. *Ann Dermatol*. 2012;**24**:11-5.
14. Moghaddassi M, Shahram F, Chams-Davatchi C *et al*. Different aspects of psoriasis: analysis of 150 Iranian patients. *Arch Iran Med*. 2009;**12**:279-83.
15. Saeed M, Zaman T, Rashid T, Jahangir M. Evaluation of joint involvement in patients of psoriasis: an observational study. *J Pak Assoc Dermatol.* 2008;**18**:6-8.
16. Ejaz A, Raza N, Iftikhar N *et al*. Presentation of early onset psoriasis in comparison with late onset psoriasis: A clinical study from Pakistan. *Indian J Dermatol Venereol Leprol*. 2009;**75**:36-40.
17. Kanelleas A, Liapi C, Katoulis A *et al*. The role of inflammatory markers in assessing disease severity and response to treatment in patients with psoriasis treated with etanercept. *Clin Exp Dermatol*. 2011;**36**:845-50.
18. Kwon HH, Kwon IH, Choi JW, Youn JI. Cross-sectional study on the correlation of serum uric acid with disease severity in Korean patients with psoriasis. *Clin Exp Dermatol*. 2011;**36**:473-8.
19. Mahesar SM, Khuhawar MY, Dahot MU. Variation profile of urea and uric acid in normal and psoriatic subjects. *Med Channel*. 2001;**7**:23-30.