Original Article

Clinical Features and Severity of Psoriasis: A Comparison of Facial and Nonfacial Involvement in Iran

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Abstract

Background: Facial involvement in psoriasis is accomplished with poor prognosis. In this study, clinical features and severity of psoriasis were compared between facial and nonfacial psoriasis involvement groups in Iran. It also evaluated these characteristics in different subtypes of facial psoriasis.

Methods: One hundred and thirty- eight psoriatic patients having referred to our clinic entered in this cross- sectional study in 2006 – 2007. Medical information, whole body and scalp Psoriasis Area and Severity Index (PASI) scores were obtained. Variables were compared between the facial and nonfacial involvement groups and also in different subtypes of the former including peripherofacial (PF), centrofacial (CF), and mixedfacial (MF). A P-value of < 0.05 was considered as significant.

Results: We found 55.0% facial involvement in Iranian psoriatic patients. MF (52.6%), CF (28.9%), and PF (18.4%), respectively were the common forms of facial involvement. The median whole body and scalp PASI scores, the number of male participants, and tongue involvement were significantly higher in patients with facial involvement. Comparing different subtypes of facial psoriasis, whole body PASI and scalp PASI scores were significantly higher in MF subtype and lower in CF subtype. Despite the least severity in the latter subtype, psoriatic arthritis and geographic tongue were shown to be more common in this subtype. Moreover, relapse history was correlated with PF subtype.

Conclusions: Facial involvement in psoriasis had significantly higher whole body and scalp PASI scores in Iran which may be an indication of more severe disease. This difference was more prominent in MF subtype.

Keywords: Iran, psoriasis, skin manifestations

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Introduction

Psoriasis is a chronic, immune-mediated inflammatory disease that is estimated to affect 0.6% to 4.8 % of the population worldwide.[1] Its prevalence was reported to be 1.3% – 2.5% in Iran.[2,3] Besides its tormenting symptoms and psychological problems mostly due to its visibility, it may lead to a decrease in quality of life.[1,4–6] Psoriatic facial lesions not only cause more emotional stress by their visibility, but also are proposed to be a sign of severe psoriasis.[7–9] Most clinicians believe that psoriasis rarely involves the face. Recently facial involvement is assumed as a poor prognostic marker of the disease.[8–10] Woo et al. classified facial psoriasis into three subtypes and suggested that clinical characteristics of psoriatic patients with facial involvement are related to the distribution of facial lesions.[10]

Considering the importance of facial involvement as a severity factor in treatment, we conducted this study to evaluate the differences between clinical features and severity of psoriasis according to the facial involvement in Iranian psoriatic patients. We also evaluated these characteristics among different subtypes of facial psoriasis.

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Patients and Methods

Patients

A total of 138 patients (75males and 63 females) with psoriasis presenting to Razi Hospital between January 2006 and April 2007 were enrolled in this cross- sectional study after signing an informed consent. The study protocol followed the guidelines of the Declaration of Helsinki and was approved by the Ethics Committee of Tehran University of Medical Sciences.

Study Design

All medical information including the age of onset; disease duration ; family history; nail, joint, and tongue involvement; pruritus; history of systemic therapy; admissions and relapses; involved facial areas; extent of involvement; and the effect of external factors (seasonal variation, psychological stress, trauma ,and infection) was recorded at the time of presentation to the clinic. The involved facial areas were defined as follows: upper aspect of the forehead (adjacent to hair line); lower aspect of the forehead (separate from hair line); eyelid; cheek; malar area; nasolabial fold; perioral area; nose; periauricular area; and earlobe (including external meatus). A single dermatologist evaluated the severity of psoriasis on the whole body and on the scalp separately according to the Psoriasis Area and Severity Index (PASI) score.

All patients were categorized into two main groups depending on facial involvement. Moreover, patients in the facial group were classified into three subgroups based on the type of their facial lesion distribution as PF, CF, and MF types. They were consid-

Table 1. Baseline characteristics of all patients according to presence of facial involvement

Baseline Characteristics	Nonfacial Involvement N = 62	Facial Involvement N = 76	OR(95%CI)
Male sex	26(41.9)	49(64.5)	2.51(1.26–5.00)
Age*	44.9 (19.2)	39.67 (18.3)	0.98(0.96–1.003)
Age of onset*	36.06 (20.1)	29.6 (19.46)	0.98(0.96–1.001)
Disease duration *	8.51 (9.59)	10.06 (9.3)	1.01(0.98–1.05)
Worsening by external factors(Y/N)	33 (53.2)	45 (59.2)	1.27(0.64–2.5)
Seasonal variation(Y/N)	9(14.5)	9(11.8)	0.79(0.29–2.1)
Psychological stress(Y/N)	25(40.3)	37(48.7)	1.4(0.71–2.76)
Trauma(Y/N)	5(8.1)	8(10.5)	1.34(0.41–4.32)
Infection(Y/N)	1(1.6)	1(1.3)	0.81(0.05–13.27)
Positive family history	12(19.4)	25(32.9)	2.04(0.92–4.5)
Positive history of			
Hospitalization	18 (29.0)	22 (28.9)	0.99(0.47–2.08)
Systemic therapy	38 (61.3)	55 (72.4)	1.65(0.80–3.38)
Relapse	27(43.5)	41(53.9)	1.51(0.77–2.98)

*Data for age, age of onset, and disease duration are presented as mean years (SD).

Table2. Baseline characteristics of patients in different facial involvement subtypes

Baseline Characteristics	MF N = 40	PF N = 14	CF N = 22	P-value
Male sex	26(65.0)	9(64.3)	14(63.6)	0.99
Age *	42.1 (20.6)	32.57 (16.2)	39.68 (13.9)	0.24
Age of onset *	33.7(21.65)	21.6 (14.01)	27.07 (16.6)	0.10
Disease duration *	8.36 (9.34)	10.9 (7.22)	12.6 (10.3)	0.22
Worsening by external factors(Y/N)	25 (62.5)	6 (42.9)	14(63.6)	0.38
Seasonal variation(Y/N)	6(15.0)	1 (7.1)	2(9.1)	0.65
Psychological stress(Y/N)	22(55.0)	5(35.7)	10(45.5)	0.43
Trauma(Y/N)	4(10)	1 (7.1)	3(13.6)	0.81
Infection(Y/N)	1(2.5)	0(0)	0(0)	0.63
Positive family history	13(32.5)	4(28.6)	8(36.4)	0.88
Positive history of				
Hospitalization	11 (27.5)	3 (21.4)	8(36.4)	0.60
Systemic therapy	27 (67.5)	13(92.9)	15 (68.2)	0.16
Relapse	20 (50.0)	12(85.7)	9(40.9)	0.02

*Data for age, age of onset, and disease duration are presented as mean years (SD); CF: Centrofacial; PF: Peripherofacial; MF: Mixedfacial.

Table 3. Comparing whole body and scalp PASI and clinical manifestations in two main study groups

Positive Clinical Manifestations	Nonfacial Involvement N = 62	Facial Involvement N = 76	P-value
Whole body PASI*	9.30 (4.8–17.00)	16.27 (10.7–26.5)	<0.0001
Scalp PASI*	0.00 (0.00–0.42)	1.55 (0.60–2.80)	<0.0001
Nail involvement	32 (51.6)	44 (57.9)	0.46
Psoriatic arthritis	6(9.7)	12 (15.8)	0.28
Pruritus	37 (59.7)	57 (75.0)	0.055
Tongue involvement	0(0)	25(32.9)	<0.0001
Geographic tongue	0(0)	18(23.7)	<0.0001
Fissured tongue	0(0)	7(9.2)	0.01

*Data for whole body and scalp PASI are presented as median (25^{th} -75^{th}).

ered as PF type if their facial lesions were limited on the upper aspect of forehead, periauricular area, or earlobe. Patients without lesions on the above-mentioned areas were considered as CF type while those who had lesions of both PF and CF types were classified as MF type.

Statistical Analysis

Binary logistic regression was used to calculate odds ratio (OR) of baseline characteristics between facial and nonfacial involvement groups. Data were presented as number (percentage), mean (SD), and OR (95%CI). Pearson's chi-square test was used for the comparison of binominal variables and the independent-samples t- test and one-way analysis of variance for continuous variables. Data were reported as number (percentage) and mean (SD) according to the above- mentioned variables, respectively. For whole body and scalp PASI as categorical variables Mann- Whithney and Kruskal-Wallis H were used to determine the correlation between scores and types of involvement. Data were reported as median (25^{th} – 75^{th}) and P-value .To evaluate the correlation between continuous variables and PASI scores Spearman test was used and P-value of the results were reported. Data were analyzed using SPSS for WINDOWS® VER 16 (SPSS Inc., Chicago, IL, USA). P- values less than 0.05 were regarded as statistically significant.

Results

From a total of 138 patients (75males and 63 females, mean age: 42.05 ± 18.85 years, mean duration of psoriasis: 9.36 ± 9.46 years) 55.0% had facial involvement. MF (52.6%) was the most common subtype of facial involvement. CF (28.9%) and PF (18.4%) were in turn the most common subtypes.

Table 4. Comparing whole body and scalp PASI and clinical manifestations in different facial subtypes

Positive Clinical Manifestations	MF N = 40	PF N = 14	CF N = 22	P-value
Whole body PASI *	22.4 (12.7–36.8)	14.7 (9.17–20.62)	14.47 (4.57–17.45)	0.01
Scalp PASI *	2.45(1.00–3.60)	1.50 (0.57–2.5)	0.17 (0.00–1.05)	<0.0001
Nail involvement	21(52.5)	9 (64.3)	14(63.6)	0.60
Psoriatic arthritis	2 (5.0)	2 (14.3)	8 (36.4)	0.005
Pruritus	30 (75.0)	10 (71.4)	17 (77.3)	0.92
Tongue involvement	13(32.5)	0(0)	12(54.5)	0.003
Geographic tongue	10(25)	0(0)	8(36.4)	0.04
Fissured tongue	3(7.5)	0(0)	4(18.2)	0.15

*Data for whole body and scalp PASI are presented as median (25^{th}–75^{th}); CF = Centrofacial; PF = Peripherofacial; MF = Mixedfacial.

Table5. Baseline data and clinical features effects on whole body and scalp PASI

Baseline Data / Positive Clinical Features	Whole Body PASI	Scalp PASI
	Median(25^{th}–75^{th})	Median(25^{th}–75^{th})
Male sex	15.2(8.0–23.2)	0.90(0.02–2.4)
Nail involvement	13.3(4.9–21.35)	0.60(0.00–2.07)
Psoriatic arthritis	14.15(12.22–17.45)	0.60(0.00-1.45)
Pruritus	15.1(7.37–21.60)	0.80(0.00-2.40)
Worsening by external factors	14.47(5.35–21.52)	0.45(0.00–1.87)
Seasonal variation	12.55(3.8–24.5)	0.15(0.00–1.10)
Psychological stress	14.47(5.62–21.52)	0.55(0.00–1.80)
Trauma	12.9(4.2–20.7)	0.6(0.00–2.45)
Infection	33.8(17.6–50.1)	1.75(0.00–3.5)
Positive family history	15.2(9.80–24.45)	0.90(0.03–1.95)
Positive history of		
Hospitalization	15.2(6.62–24.10)	0.30(0.00–1.65)
Systemic therapy	15.2(7.55–21.60)	0.60(0.00–2.55)
Relapse	13.3(6.52–21.57)	0.60(0.00–2.40)
Tongue involvement	15.0(7.4–26.5)	1.00(0.07–2.15)
Geographic tongue	15.1(12.1–33.77)	1.25(0.13–2.72)
Fissured tongue	4.8(2.5–23.2)	0.50(0.00–1.00)

Table 1 presents the baseline characteristics of all enrolled patients categorized based on the presence of facial involvement and Table 2 presents the data for different subtypes of facial involvement. As shown in Table 1, facial involvement was significantly (2.51 times) more frequent in males (OR = 2.51, CI: 1.26 – 5.00) but there was no significant difference among different subtypes of facial involvement (P-value = 0.99). In facial involvement group, history of relapse was significantly more common in patients with PF subtype (85.7%) in comparison with CF subtype (40.9%) (P = 0.02).Other variables were not significantly different in all groups.

Table 3 and Table 4 show whole body and scalp PASI, and also clinical features in the two main study groups and in different facial subtypes. The median (25^{th} – 75^{th}) of PASI in patients with facial involvement was 16.27 (10.7 – 26.5) for whole body PASI score and 1.55 (0.60 – 2.80) for scalp PASI score, both being significantly higher in facial involvement group (P < 0.0001). In different subtypes of facial involvement, these two scores were significantly higher in MF subtype and lower in CF subtype (P < 0.05). Psoriatic arthritis showed no significant difference between facial and nonfacial groups (P > 0.05) but it showed significantly different pattern among different facial subtypes (P < 0.05). Tongue involvement showed a significantly higher prevalence rate among facial group and CF subtype (P < 0.05). The prevalence rate of geographic tongue on the contrary to fissured tongue was significantly different in facial subgroups with 36.4% in CF subtype and 0% in PF subtype (P = 0.04). Other clinical features showed no significant differences among all the groups (P < 0.05).

Different variables were also analyzed with whole body and scalp PASI scores independently from facial involvement (Table 5). The correlation between whole body PASI score and age (ρ = 0.7, P-value = 0.36) , age of onset (ρ = 0.04, P-value = 0.61), and disease duration (ρ = 0.05, P-value = 0.55) were not statistically significant; likewise the correlation of scalp PASI score with age (ρ = -0.14, P-value = 0.09) , age of onset (ρ = -0.09, P-value = 0.29), and disease duration (ρ = -0.06, P-value = 0.41). Thus, only male sex and pruritus had significant correlation with higher scalp PASI score and other variables had no significant correlation with these two scores.

Discussion

Our study revealed that face was involved in about half of Iranian psoriatic patients. Significantly higher whole body and scalp PASI scores in facial involvement patients indicate more severe disease in this group. By showing higher scores, MF subtype came out to be the most severe type of facial involvement in Iran while CF subtype was the least. Despite its least severity, psoriatic arthritis and geographic tongue involvement were more common in CF subtype. We also found that facial involvement was more common in Iranian males and was accompanied with more tongue involvement. Independently from facial involvement, none of the variables except male sex and pruritus were in relation to scalp PASI score. For whole body PASI, these two variables along with others were of no significant effect.

Similar to our results, Rassai and coworkers[11] found facial involvement in more than half of psoriatic patients in Iran. A systematic review reported the prevalence of facial involvement from 17% to 46% [12] which was less than the findings in Iran. The higher prevalence of facial psoriasis in Iran may be due to our genetic profile that exposes us to more severe disease or may be as a result of sampling error. Moreover, our hospital was a referral

center and we expect to visit patients with more severe disease presentations there.

Similar to our study, previously reported studies in Korea and Turkey demonstrated a significantly higher whole body and scalp PASI scores in facial involvement psoriasis.[8,9] In Iran, facial involvement was previously shown to be more associated with severe disease but neither PASI scores nor comparisons between different subtypes of facial involvement was evaluated in this study.[11] In Korea, Yoon et al. demonstrated that scalp involvement was seen in 93.4% of patients with PF lesions, while it was seen only in 76.3% of patients with facial psoriasis without peripheral lesions.[13] Besides those studies, patients with PF subtype had a higher scalp PASI score and developed facial psoriasis earlier than those without PF disease, further supporting the notion that PF subtype was associated with extensive scalp psoriasis. Consistently we found that PF and MF (containing peripheral involvement besides central involvement) subtypes were associated with a higher mean PASI score on scalp in the facial group.

Yoon et al. showed involvement of central aspect of the face as an unusual manifestation of psoriasis being attributed to the antipsoriatic activity of sebum.[13] Furthermore, Woo et al. stated that involvement of the central aspect of the face was more frequently associated with earlier onset of psoriasis, more severe body involvement, and more extensive treatment.[10] In contrast, in Iran PF subtype was shown to be the most unusual pattern of facial involvement and CF subtype was associated with less whole body and scalp PASI scores. These differences may be explained by the effect of different geographic and genetic factors on patterns of disease presentations.

On contrary to our study, many reports showed an equal rate of facial involvement in male and female patients.[8,14] More facial involvement in male patients in Iran revealed by our study may be due to their later seeking medical advices which would cause severe disease at presentation.

Although like other reports, our study revealed the earlier age of onset, younger population, and longer disease duration in facial involvement group, but was not consistent with others;[7–9,11] these differences were not of significant value. This may be due to more severe forms of nonfacial involvement being presented in our referral clinic.

Total body PASI score had no correlation with duration of disease, age of onset, or patient's age in Fortune et al's. study in England.[14] These findings were compatible with the results of our study.

In conclusion, facial involvement of psoriasis is a sign of disease severity in Iran and different subtypes of facial involvement have different behaviors. Consequently, when examining or treating psoriatic patients, facial involvement in particular might be used as a marker of disease severity. We should mention that because of very small number of patients in each subgroup and performing the study in dermatology clinic of a referral center, these findings should be interpreted with caution. A multicentral study with larger groups of patients is needed to confirm these preliminary results and to understand the exact behavior of psoriasis in different types of disease and different forms of facial involvement.

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