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Report

Clinical characteristics of patients with facial psoriasis in Malaysia

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Abstract

Background Psoriasis involving the face is visible and can cause considerable emotional distress to patients. Its presence may also confer a poorer prognosis for the patient. This study sought to evaluate the characteristics of facial psoriasis in Malaysia.

Methods A cross-sectional study conducted using data from the Malaysian Psoriasis Registry from 2007 to 2011. Specific risk factors, i.e., age, age of onset, gender, duration of disease, obesity group, body surface area, Dermatology Life Quality Index (DLQI), family history of psoriasis, nail involvement, psoriatic arthritis, phototherapy, systemic therapy, clinic visit, days of work/school, and hospital admission due to psoriasis in the last 6 months were analyzed.

Results A total of 48.4% of patients had facial psoriasis. Variables significantly associated with facial psoriasis are younger age, younger age of onset of psoriasis of $\leq$ 40 years, male, severity of psoriasis involving >10% of the body surface area, higher DLQI of >10, nail involvement, and history of hospitalization due to psoriasis.

Conclusion This study found that facial psoriasis is not as rare as previously thought. Ambient ultraviolet light, sebum, and contact with chemicals from facial products may reduce the severity of facial psoriasis, but these factors do not reduce the prevalence of facial psoriasis. The association with younger age, younger age of onset, higher percentage of body surface area involvement, higher DLQI of > 10, nail involvement, and hospitalization due to psoriasis support the notion that facial psoriasis is a marker of severe disease.

Introduction

Psoriasis involving the face can cause considerable emotional distress in view of the visibility of the facial lesions. It is thought that psoriasis rarely involved the face but evidence has proven the contrary, and its presence may confer a poorer prognosis for the patient.[1–3] Despite its psychosocial impact and treatment resistance, facial psoriasis has not received the desired attention. Scarcity of literature on the subject matter is evident.

Although several authors have classified facial psoriasis into three subtypes and correlated their distribution to clinical characteristics of patients with psoriasis, validated assessment methods for facial psoriasis is still lacking.[4,5] Most authors adopt the facial Psoriasis Area and Severity Index (fPASI) to assess severity of facial psoriasis.[6] Considering the important relationship between facial psoriasis and severity of psoriasis, we sought to evaluate the prevalence of facial psoriasis in Malaysia and determine the risk factors associated with increased risk of facial psoriasis.

Methods

This is a cross-sectional study conducted using the data from the Malaysian Psoriasis Registry from 2007 to 2011. The Malaysian Psoriasis Registry is a systematic data collection of patients with psoriasis in Malaysia. This registry is a centralized electronic database, where data are collected voluntarily from 22 participating centers nationwide. All adult patients aged 18 years and above were included in this study. Patients were categorized into those with and without facial psoriasis. Sample descriptive statistics, included frequencies, percentages, means, and standard deviations, were calculated to summarize the demographic and characteristics of the study group. Continuous variables were expressed as means and standard deviations

(SD) and categorical variables as percentages. In this study, the logistic regression model was used to estimate the odds ratio (OR) for univariate analysis with specific risk factors that included age, age of onset, gender, duration of disease, obesity, body surface area, Dermatology Life Quality Index (DLQI), family history of psoriasis, nail involvement, psoriatic arthritis, phototherapy, systemic therapy, clinic visit, days of work/school, and hospital admission due to psoriasis in the last 6 months. ORs indicating the effect of the risk factors on the occurrence of facial psoriasis were calculated and reported with a 95% confidence interval (CI). All statistically significant risk factors from the univariate analyses were entered into a multivariate logistic regression model using the Enter method. Adjusted OR and its 95% CI were used to estimate the association for combinations of risk factors. $P < 0.05$ was considered statistically significant. All statistical analyses were computed using IBM SPSS Statistics 20 (IBM SPSS Statistics for Windows; IBM Corp, Armonk, NY, USA).

Results

Table 1 shows the characteristics of patients with facial psoriasis. Among the 6181 patients studied, we found that 48.4% (2993) of the patients had psoriasis involving the face. After adjusting for confounding factors by multiple logistic regression analysis, seven variables were found to have a statistically significant association with facial psoriasis (Table 1).

Patients with facial psoriasis are younger, with a mean age of 43.2, compared to patients without facial psoriasis (Adj. OR = 0.997, 95% CI 0.980–0.994, $P = 0.001$). Patients with facial psoriasis also have a younger age of onset of psoriasis of ≤ 40 years (Adj. OR = 1.27, 95% CI 1.02–1.58, $P = 0.035$). Other factors that had a statistically significant association with patients with facial psoriasis are male gender (Adj. OR = 1.50, 95% CI 1.27–1.77, $P < 0.001$) and psoriasis involving > 10% of the body surface area (Adj. OR = 5.38, 95% CI 4.29–6.74, $P < 0.001$). Patients with facial psoriasis also have a higher DLQI of > 10 (Adj. OR = 1.80, 95% CI 1.50–2.15, $P < 0.001$), nail involvement (Adj. OR = 1.27, 95% CI 1.07–1.51, $P = 0.006$), and are more likely to be hospitalized due to psoriasis (Adj. OR = 2.66, 95% CI 1.32–5.35, $P = 0.006$).

Discussion

Psoriasis involving the face is generally thought to be rare as it is speculated that ambient ultraviolet (UV) radiation and some components of sebum have antipsoriatic activity; which may reduce the prevalence of facial involvement in psoriasis.[1] In 2007, the Copenhagen Psoriasis Working Group carried out an extensive literature search and found that facial psoriasis occurs in 17–46% of patients with psoriasis; therefore, involvement at this site cannot be regarded as a rare manifestation.[4] This is echoed in our study where 48.4% of the patients in our registry were found to have psoriasis with facial involvement.

One study found that the severity of erythema, scale, and thickness was generally milder in facial psoriasis, with more than 60% of patients having grade 0 or 1 scale and thickness.[7] This may be attributed to the inherent characteristics of facial psoriasis, and it would be interesting to see in future studies if the severity of facial involvement in our patients would match these findings.[7] One tool that can be used to assess this is the facial Psoriasis Area Severity Index or fPASI score.[6] This tool assesses the involved facial area based on the rule of fours. It is based on the finding that facial regions may be defined to have percentage areas that are multiples of 4% of the total facial area, i.e., forehead 24%, one cheek 20%, perioral area 8%, one aspect of an ear 4%, one periorbital area 4%, and nose 4%.[6] This can therefore provide a more accurate assessment of the facial involvement in psoriasis.

The milder severity of erythema, scale, and thickness of facial psoriasis may also be due to the fact that the face is more frequently exposed to external influences such as UV rays and chemical contacts.[7] Therefore, it can be postulated that UV radiation may reduce the severity of facial psoriasis, but the UV effect in itself could not be a factor in reducing the prevalence of facial psoriasis. It is also worth noting that at least 5% of patients with psoriasis may also be aggravated by sunlight, so this group of patients may also contribute to the percentage of psoriatic patients with facial involvement. Further studies are needed to evaluate whether the patients with facial psoriasis in our study have photosensitive psoriasis.

In accordance with a previous study, we also found that facial psoriasis is associated with an earlier age of onset.[3] Almost 70% of the patients in our study were diagnosed with psoriasis before the age of 40. Henseler and Christophers divided psoriasis into two subtypes.[8] Type I psoriasis manifests before age 40 with a peak onset at 16–22 years, and type II psoriasis begins after age 40 with a peak onset at 57–60 years.[8] Patients with early onset psoriasis follow an irregular course and have a strong tendency to become generalized.[6] A number of investigators also suggested that early age of onset is associated with a severe course, recalcitrance to treatment, or a higher frequency of relapse.[9–13] This might also explain why most of the patients with facial psoriasis in our study have more severe disease with body surface area involvement of more than 10% and history of hospital admission. These findings support the notion that facial psoriasis is a marker of severe disease.

Table 1 Factors associated with facial psoriasis

Characteristics	Without facial psoriasis (n = 3188)		With facial psoriasis (n = 2993)		Univariate analysis			Multivariate analysis		
	n	%	*n*	%	Crude OR	95% CI	*P*-value[a]	Adjusted crude OR	Adjusted 95% CI	*P*-value[a]
Age of onset										
≤40 years (type 1)	1843	58.2	2070	69.9	1.67	1.50, 1.85	<0.001	1.27	1.02, 1.58	0.035
>40 years (type 2)	1322	41.8	891	30.1	1.00	–		1.00	–	
Gender										
Male	1726	54.1	1857	62.0	1.39	1.25, 1.53	< 0.001	1.50	1.27, 1.77	< 0.001
Female	1462	45.9	1136	38.0	1.00	–		1.00	–	
Duration of disease										
≤5 years	1339	42.0	1263	42.2	1.00	–	0.783	–	–	–
>5 years	1826	57.3	1698	56.7	0.99	0.89, 1.09				
Obesity group										
BMI < 30	2394	75.1	2220	74.2	1.00	–	0.433	–	–	–
BMI ≥ 30	635	19.9	619	20.7	1.05	0.93, 1.19				
Body surface area										
≤ 10%	2100	65.9	1344	44.9	1.00	–	< 0.001	1.00	–	< 0.001
> 10%	194	0.1	714	23.9	5.75	4.84, 6.84		5.38	4.29, 6.74	
DLQI score										
≤10	1661	52.1	1140	38.1	1.00	–	< 0.001	1.00	–	< 0.001
>10	526	16.5	802	26.8	2.22	1.94, 2.54		1.80	1.50, 2.15	
Family history										
Yes	628	19.7	598	20.0	1.02	0.90, 1.15	0.814	–	–	–
No	2532	79.4	2375	79.4	1.00	–				
Nail involvement										
Yes	1806	56.6	2009	67.1	1.57	1.42, 1.75	< 0.001	1.27	1.07, 1.51	0.006
No	1353	42.4	957	32.0	1.00	–		1.00	–	
Psoriatic arthritis										
Yes	460	14.4	531	17.7	1.28	1.12, 1.47	< 0.001	1.08	0.86, 1.34	0.512
No	2698	84.6	2426	81.1	1.00	–		1.00	–	
Phototherapy										
Yes	83	2.6	169	5.6	2.27	1.73, 2.96	< 0.001	1.04	0.67, 1.61	0.861
No	3005	94.3	2700	90.2	1.00	–		1.00	–	
Systemic treatment										
Yes	1612	50.6	1600	53.5	1.14	1.03, 1.26	0.012	1.09	0.91, 1.31	0.351
No	1524	47.8	1329	44.4	1.00	–		1.00	–	
Clinic visit due to psoriasis										
Yes	2692	84.4	2487	83.1	0.91	0.79, 1.05	0.196	–	–	–
No	421	13.2	428	14.3	1.00	–				
Days off work/school due to psoriasis										
Yes	221	6.9	355	11.9	1.82	1.52, 2.17	<0.001	0.99	0.74, 1.34	0.974
No	2884	90.5	2552	85.3	1.00	–		1.00	–	
Hospital admission due to psoriasis										
Yes	35	1.1	108	3.6	3.38	2.30, 4.97	<0.001	2.66	1.32, 5.35	0.006
No	3074	96.4	2806	93.8	1.00	–		1.00	–	

BMI, body mass index; CI, confidence interval; DLQI, Dermatology Life Quality Index; OR, odds ratio.
n = 6181.
[a]Wald test.

Our study also found that male patients are more likely to develop facial psoriasis, and this is in accordance with a study conducted in Iran.[14] The authors postulated that this might be due to late medical seeking behavior in male patients, which resulted in severe disease at presentation. However, a few other studies showed no gender predilection in patients with facial psoriasis.[2,3,15]

One study has identified that psoriasis can be divided into six different phenotypes.[16] In terms of sites of involvement, type 1 and type 3 are associated with scalp

and elbow involvement, and type 2 is associated with palmoplantar psoriasis. Types 4 and 5 involve multiple sites of involvement but spare the palms and soles whereas type 6 involves multiple sites without specificities. Facial involvement is most frequently seen in type 5 subtype, which is also associated with early age of onset and family history of arthritis. This is also echoed in our study in which we found that facial psoriasis is associated with early age of onset. However, even though our registry collects information on family history of psoriasis, when this is positive, we do not specifically collect data on family history of psoriatic arthritis. It may be worth enquiring about family history of psoriatic arthritis in patients with facial psoriasis in our study as there may be a genetic component implicated in this subset of patients.

According to the results of this study, facial psoriasis is associated with a higher DLQI with a mean of 9.96, i.e., moderate effect on a patient's life. This could be explained by the fact that psoriatic lesions on the face cannot be easily concealed and therefore can cause significant emotional distress to the patients. The increased disease severity associated with facial psoriasis could also contribute to the poorer quality of life in these patients.[17] Early recognition and prompt treatment of facial psoriasis is necessary to improve the quality of life in patients with psoriasis. Low-potency topical corticosteroids, vitamin D3 analogues, and calcineurin inhibitors have been used as first choice treatments in facial psoriasis.[4]

Conclusion

This study supports the fact that facial psoriasis is not as rare as previously thought. As facial psoriasis occurs on a highly visible area, it may result in negative psychosocial impact, embarrassment, and reduced quality of life in patients. Our study also shows that facial psoriasis is a marker for severe psoriasis, and early treatment is imperative to ensure adequate control of psoriasis in this significantly visible area.

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