Original Article

Early and late onset psoriasis: A clinical study

Yogesh M Shah[1*], Alka D Gore[2], Bibi Kaushur D Khodaboccus[3]

{[1]Professor, Department of Dermatology, Venereology & Leprosy} {[2]Assistant Professor, Department of Community Medicine} Bharati Vidyapeeth Deemed University Medical college & Hospital, Sangli-416414 Maharashtra, INDIA.
[3]Senior Medical Health Officer, Ministry of Health & Quality of Life, Govt. of Mauritius and Training Manager at Mauritius Institute of Health, MAURITIUS.
Email: dr.yogeshshah.21@gmail.com

Abstract

Background: It has been postulated that two clinical subtypes of psoriasis, namely the "early onset" and the "late onset" can be characterized based upon the age of onset. However precise data to differentiate the two clinical subtypes of psoriasis are not available. **Objective:** To investigate the clinical characteristics of early and late onset psoriasis in the Mauritian patient. **Methodology**: A cross-sectional study of consecutive 55 patients of psoriasis was carried out at the Skin Outpatient department of a regional hospital in Mauritius. The Case study method was used to collect the clinical data and was recorded in a comprehensive Case Record Form. The data was statistically analyzed using SPSS 22 (Statistical Package for the Social Sciences) software. **Results:** A bimodal distribution of onset of psoriasis was observed with peak occurring at the age of 20-30 years in 12 (21.8%) patients and 49-59 years in 24 (43.6%) patients; 27 (49.1%) patients had onset < 40 years; 28 (50.9%) patients had onset ≥ 40 years. In Early onset psoriasis significant co-morbidities were present in 22/27 (66.7%) of patients. In late onset psoriasis 22/28 (78.6%) were male. Out of 33 patients with nail involvement 26 (78.8%) were male as compared to 7 (21.2%) female patients, which was significant. Total Body Surface Area larger than 10% was observed in 12 (44.4%) in early onset psoriasis as compared to 6 (21.4%) in late onset psoriasis but was statistically not significant. **Conclusions:** Psoriasis has a bimodal distribution of age of onset, a higher incidence of co-morbidities in the early onset and a male preponderance in late onset subtype. Men have a higher incidence of nail involvement but a lesser incidence of psoriatic arthritis as compared to women.
Key words: Clinical subtypes, age of onset, Total Body Surface Area (TBSA), psoriatic arthritis.

[*]**Address for Correspondence:**
Dr. Yogesh M Shah, Professor, Department of Dermatology, Venereology & Leprosy, Bharati Vidyapeeth Deemed University Medical College & Hospital, Sangli-416414 Maharashtra, INDIA.
Email: dr.yogeshshah.21@gmail.com
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INTRODUCTION

Worldwide prevalence rates of psoriasis range from 0.6 to 4.8%.[1, 2]The disease tends to have a bimodal distribution of onset with major peak occurring at age of 20-30 years, and later a smaller peak occurring at age of 50-60 years.[3, 4]Two sub-populations of patients of psoriasis, early onset and late onset type, with distinct clinical and immuno-genetic characteristics have been identified. The two types show different evolutionary features.[5]

Patients with early age onset psoriasis are more likely to have a family history of psoriasis and more unstable disease with frequent remissions and relapses. The disease tends to be more severe as measured by involvement of Total Body Surface Area (TBSA) and is more resistant to treatment.[3, 4]. There is a higher incidence of obesity, diabetes, dyslipidaemia, hypertension and major cardiovascular events (MACE). HLA Cw6, B13 and B17 are the specific markers of the early onset type of psoriasis.[6, 7]

Late onset psoriasis involves less TBSA, is a milder disease and is more likely to be associated with psoriatic arthritis, nail involvement and palmoplantar pustular involvement.[3,4] Family history is less frequent and HLA B27, Cw2, B44 and Cw5 seem to be associated with the late onset type of psoriasis.[6, 7]

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The purpose of our study was to study the clinical features of early and late onset psoriasis in the Mauritian patient.

MATERIALS AND METHODS

The study was carried out at the Skin outpatient department of a regional hospital in Mauritius from February 2011 to October 2012. A cross-sectional study of consecutive 55 patients of psoriasis of either sex was carried out. The permission of the Regional Health Director of the Hospital and an informed consent of the patient were obtained for the study.

A clinical diagnosis of 'psoriasis vulgaris' was made, when typical well circumscribed, erythematous, scaly, chronic plaques were observed on the scalp and the extensors, 'guttate psoriasis' if there was an abrupt eruption of typical psoriatic lesions of papular type, 'pustular psoriasis' if tiny sterile pustules were found on the surface of a psoriatic plaque and 'psoriatic erythroderma' if extensive erythema and superficial scaling of more than 90% of the body surface occurred in a known case of psoriasis.[8, 9] Patient in remission of skin lesions of psoriasis or guttate psoriasis found to be serologically positive for VDRL or TPHA test were excluded from the study.

The Case study method was used to collect the clinical data like age of onset, clinical type of psoriasis, the Body sites and the TBSA affected, involvement of the nail and the joints and presence of co-morbidities like obesity, hypertension, diabetes mellitus and cardiovascular diseases. Severity of the disease was assessed, by using percentage of the TBSA affected due to psoriasis. As per Finlay's concept of 'Rule of Tens', area covering more than 10 hand prints, indicating BSA more than 10%, was considered as severe psoriasis.[10]

The data was recorded in a comprehensive Case Record Form (CRF) and was statistically analyzed using SPSS 22 software (Statistical Package for the Social Sciences). The continuous data was described as mean and standard deviation. The categorical data was expressed as frequencies and percentages. Analysis of categorical data was done by chi-square test or Fisher's Exact test. A p value of <0.05 was considered as statistically significant.

RESULT

Out of 55 patients registered in the study, men accounted for 36 (65.5%) and women 19 (34.5%). Male to female ratio was approximately 2:1. The age of patient varied from 20 to 76 years with mean age being 48.85 years, ± SD 13.49. Majority of patients, 51 (92.7%) were of age 30 years and above; 19 (34.5%) of patients were in their sixth decade. Least number of patient, 2 (3.6%) and 4 (7.3%), were recorded in the two extreme age groups (70-79 and 20-29 years, respectively).

The number of patients with family history of psoriasis were 23 (41.8%) out of which 19 (34.7%) patients reported a first degree relative with psoriasis, 2 patients had a second degree relative and in 2 cases third degree relatives were suffering from psoriasis.

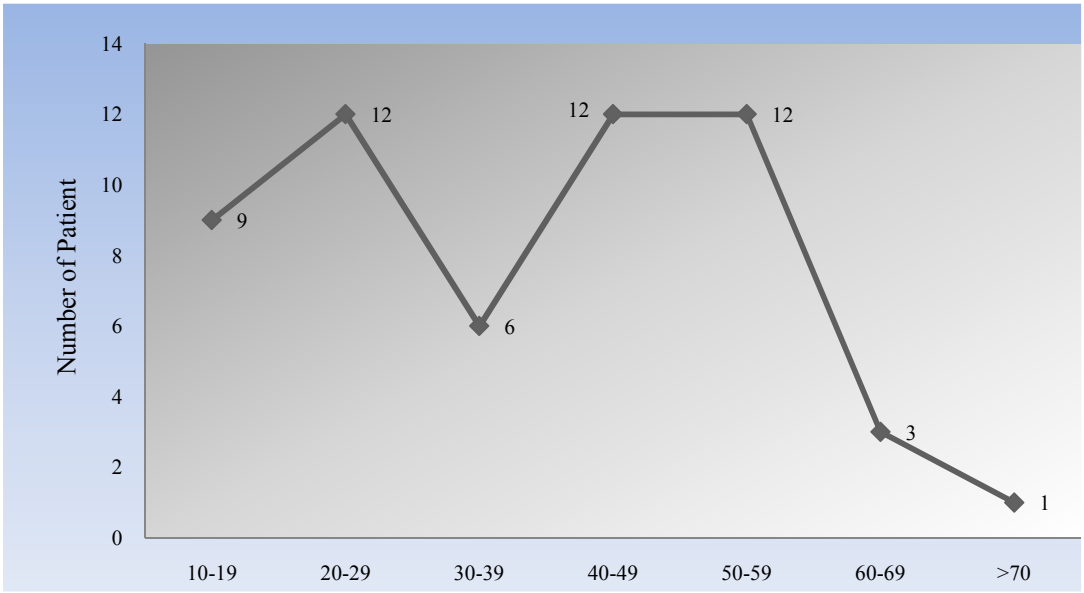

Figure 1: Bimodal distribution

The age at onset of psoriasis of the skin was 12 to 70 years; mean being 37.7 years ± SD 16.0. Two peaks were observed, first during the third decade in 12 (21.8%) patients, second during the fifth and sixth decades in 24 (43.6%) subjects; 27(49.1%) patients had onset of psoriasis below 40 years (early onset); 28(50.9%) patients reported onset of psoriasis ≥ 40 years (late onset).

Table 1: Gender distribution, family history and TBSA**in 2 subtypes of psoriasis.

Variables		Psoriasis		p value
		Early onset (n=27)	Late onset (n=28)	
Gender	Male	14 (51.9%)	22 (78.6%)	p = 0.037*
	Female	13 (48.1%)	6 (21.4%)	
Family History	Yes	11 (40.7%)	12 (42.9%)	p = 0.874
	No	16 (59.3%)	16 (57.1%)	
Co-morbidities	Yes	22 (66.7%)	11 (33.3%)	p = 0.002*
	No	5 (22.7%)	17 (77.3%)	
TBSA	<10%	15 (55.6%)	22 (78.6%)	p = 0.069
	>10%	12 (44.4%)	6 (21.4%)	

*Statistically significant **Total Body Surface Area

Gender distribution in early onset psoriasis was almost equal, but in late onset psoriasis a male preponderance, almost 4: 1, was observed. Co-morbidities were present in 22/27 (66.7%) of early onset psoriasis. Total Body Surface Area (TBSA) involvement larger than 10% was observed in almost twice the number of patients in early onset as compared to Late onset psoriasis. Chi-square test was performed, and there was statistically significant association between gender and co-morbidities with subtype of psoriasis; but no significant association was found between family history and disease severity (BSA). Late onset psoriasis was found more in male patients. Nail psoriasis was more common in late onset psoriasis, 19 (67.9%) patients as compared to 14 (51.9%) patients in early onset psoriasis. In contrast, Joint involvement was more frequent in patients of early onset, 9 (29.6%) as compared to late onset psoriasis5 (14.3%) patients. Differences between the two groups having nail or joint involvement were statistically not significant.

Table 2: Nail involvement as per gender and type of psoriasis.

Variables		Nail involvement	p value
Gender	Male	26 (78.8%)	p = 0.000*
	Female	7 (21.2%)	
Psoriasis	Early onset	14 (42.4%)	p = 0.298
	Late onset	19 (57.6%)	

*Statistical significance

Nail involvement was more among male patients, 26 (78.8%) patients compared to female patients, 7 (21.2%). Male to female ratio was approximately, 4:1. Proportion of male patients with nail involvement was significantly more ($p < 0.05$). No statistical significance was found in the Early and Late onset psoriasis patients.

Table 3: Joint involvement as per gender, subtype of psoriasis and family history.

Variables		Joint involvement	p value
Gender	Male	4 (28.6%)	p = 0.085
	Female	10 (71.4%)	
Psoriasis	Early onset	9 (64.3%)	p = 0.254
	Late onset	5 (35.7%)	
Family History	Positive	5 (35.7%)	p = 0.254
	No	9 (64.3%)	

Joint involvement was predominantly within the female population 10 (71.4%), compared to males 4 (28.6%). Male to female ratio was 2:5. On performing the z-test (Standard error of difference between two proportions) this finding was statistically not significant ($p > 0.05$). Majority of patients, 9 (64.3%) with joint involvement had early age onset disease. From among patients with joint involvement 5/14 (35.7%) had a positive family history of skin psoriasis; but this was not statistically significant.

Table 4: Type of joints involved as per type of psoriasis and family history

Variable		Types of joint involved in psoriasis		P value
		Non Axial joints	Axial joints	
Psoriasis	Early onset	6 (75.0%)	3 (50.0%)	P = 0.580
	Late onset	2 (25.0%)	3 (50.0%)	
Family History	Yes	4 (50.0%)	1 (16.7%)	P = 0.3
	No	4 (50.0%)	5 (83.3%)	

Non axial joints were mostly involved in early onset psoriasis. Majority of patients 5 (83.3%) with axial joints involvement did not have a positive family history. Associations of axial and non-axial joints to the early or late onset psoriasis and family history were not statistically significant.

DISCUSSION

Plaque psoriasis was the predominant clinical type in this study. Relation of Early onset and Late onset psoriasis to gender, Total Body Surface Area (TBSA), nail and the joints were studied.

A bimodal age of onset with first peak during 20-30 years and second peak between 49-59 years of age was observed confirming the observations of Ferrándiz C *et al*[3] and Henseler T *et al*.[4]

Early onset psoriasis revealed co-morbidities in 22/27 (66.7%) which was significant. A larger percentage of patients with family history and TBSA involvement was

seen in almost twice the number of patients as compared to the Late onset psoriasis but the figures were statistically not significant hence findings of Ferrándiz C *et al*[3] and Youn JI *et al*[11] could not be corroborated.

In late onset psoriasis a significant male preponderance, almost 4: 1, was observed. There was also a significant association of male gender and nail involvement. Joint involvement was predominantly in the female with more frequent involvement of axial joints.

CONCLUSION

The study revealed a bimodal age of distribution of onset of psoriasis, higher co-morbidies in the early onset psoriasis and a male preponderance in the late onset psoriasis. Men have a higher incidence of nail involvement but a lesser incidence of psoriatic arthritis as compared to women.

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