

Original Research Article

A clinico-epidemiological study of psoriasis patients with moderate to severe plaque type in tertiary care centre in South India

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ABSTRACT

Background: Psoriasis is a chronic disorder with the most common manifestation being the plaque-type. Nearly 20% of the plaque type suffer from a disease of moderate to severe intensity with immense effect on the quality of life. Aim was to study the clinical, socio-economic and demographic characteristics of patients with moderate to severe plaque type of psoriasis.

Methods: This was an observational study conducted in about forty patients diagnosed with moderate to severe plaque type of psoriasis based upon the clinical history, morphology of the lesions and assessed using psoriasis area and severity index (PASI), dermatology life quality index (DLQI) scoring and for comorbidities. Data was compiled and analyzed with statistical package for social science (SPSS) Version 20.0.

Results: Mean age was 37.43 ± 10.1 years. 22 were males (55%) and 18 were females (45%). The mean duration was 8.93 years and 15% had family history. The mean age of onset was earlier in the females (20.23 years) with a positive family history, as compared to males (25.36 years). About 62.5% had moderate psoriasis and 37.5% had severe psoriasis. At the baseline the PASI score was 31.98 ± 6.08 and DLQI score was 36. About 67.5% had nail changes and 10% had psoriatic arthritis. Almost in half (47.5%) the duration of the disease was 1 to 5 years and scalp (32.5%) the most common initial site of involvement. Various comorbidities were documented, 72% in moderate psoriasis and 73.33% in severe psoriasis with dyslipidemia (67.5%) being commonest.

Conclusions: Patients with moderate to severe psoriasis mostly have a low quality of life with multiple significant comorbidities that increases the risk for morbidity and mortality.

Keywords: Moderate to severe plaque psoriasis, Psoriasis area and severity index, Comorbidities, Dyslipidemia

INTRODUCTION

Psoriasis is a disorder of chronic nature which is noncontagious, multisystem and immune mediated with a genetic predisposition.¹ The prevalence in different clinical and epidemiological studies varies from 0.1 to 2.84%.¹⁻⁴ Psoriasis usually expresses itself typically as scaly plaques over the subject's elbows, knees, scalp, in lumbosacral areas or intergluteal clefts and glans penis. Many types of psoriasis are usually identified in common practice, and the most common type being the plaque

type and about twenty percentage of the patients suffer from a disease of moderate to severe intensity.² Psoriasis of any severity seems to have an intense effect on the health related QOL. Patients with moderate to severe psoriasis mostly have a low quality of life and they present with multiple significant co-morbidities besides significantly increased mortality rates.^{5,6} So, in this study, we evaluated the socio-economic and demographic characteristics of patients with moderate to severe plaque type of psoriasis.

METHODS

This was an observational study conducted in dermatology OPD of Madras Medical College, a tertiary care centre in south India between August 2015 and July 2016. All patients attending the OPD during the study period clinically diagnosed with moderate to severe plaque type of psoriasis based upon the history and morphology of the dermatological lesions were included in this hospital-based study. The protocol of the study was approved by the Institutional ethical committee before commencing the study. Informed written consent was obtained from all the patients before inclusion into the study.

Inclusion criteria

The inclusion criteria were, 1) patients of above 12 years and below 60 years of age 2) patients of both sexes 3) patients willing for study 4) primary case of moderate to severe plaque type of psoriasis.

Exclusion criteria

The exclusion criteria were 1) children below 12 years and elderly patients more than 60 years 2) pregnant and lactating women 3) patients who were not willing for investigations as per study protocol 4) any serious systemic illness and infections 5) not a primary case of moderate to severe plaque type of psoriasis.

A total of 40 clinically diagnosed psoriasis cases were enrolled during the study period of one year. A detailed history of duration, family members affected and dermatological examination was carried out. Clinically the level of dermatological severity, nail involvement and evidence of psoriatic arthritis was assessed. For all the patient's clinical assessment using psoriasis area and severity index (PASI) scoring and dermatology life quality index (DLQI) scoring was done. Basic parameters like blood pressure, waist circumference, height and weight were noted and body mass index was calculated. Relevant investigations pertaining to metabolic syndrome were carried out. Socio-economic and demographic characteristics like the distribution of the study population according to the age, gender, level of education, occupation and religion were documented. Data was compiled and analyzed with the help of statistical package for social science (SPSS) Version 20.0.

RESULTS

Forty cases from the outpatient department of age group above 12 years and below 60 years of age, diagnosed clinically as moderate to severe plaque type of psoriasis were enlisted in the study. About 25 (62.5%) of the study subjects had moderate psoriasis while the remaining 15 (37.5%) had severe psoriasis and both together accounted for 27% of total psoriasis outpatients. The Mean age

(\pm SD) group of the study population was: 37.43 (10.18) years. The minimum age noted was 20 years and the maximum were 56 years. Nearly about 65% of the study subjects were in the age group of 21 to 40 years (Figure 1).

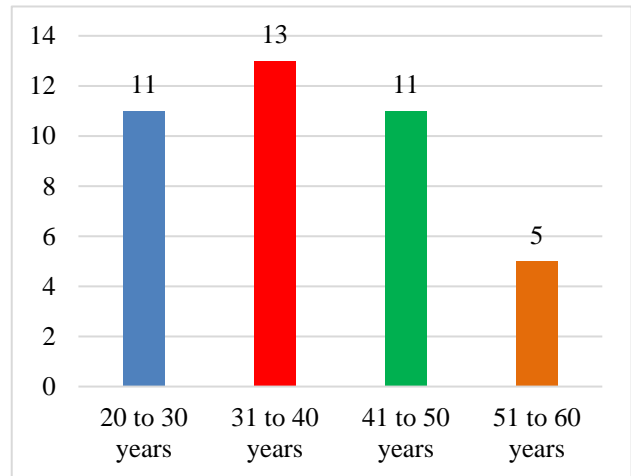


Figure 1: Age distribution of the study subjects (n=40).

Out of these 40 cases, 22 (55%) were male sex, 18 (45%) were female sex with male:female ratio of 1.2:1. The mean age of onset for males and females was 34.6 ± 13.24 and 26.54 ± 14.12 years and the difference was statistically significant ($p < 0.05$). Only 6 (15%) of the study subjects had family history of psoriasis in one or more members. The mean age of onset was earlier (20.23 years) in the female cases with a positive family history, as compared to males (25.36 years). The difference was statistically significant ($p < 0.05$). The mean duration (\pm SD) was 8.93 (7.025) years, with a minimum duration of 1 year and a maximum duration of 30 years. Almost half, 19 (47.5%) of the study subjects were having the disease for the 1 to 5 years duration while 10 (25%) had for 6 to 10 years and about 9 (22.5%) were having the disease for the 11 to 20 years (Figure 2).

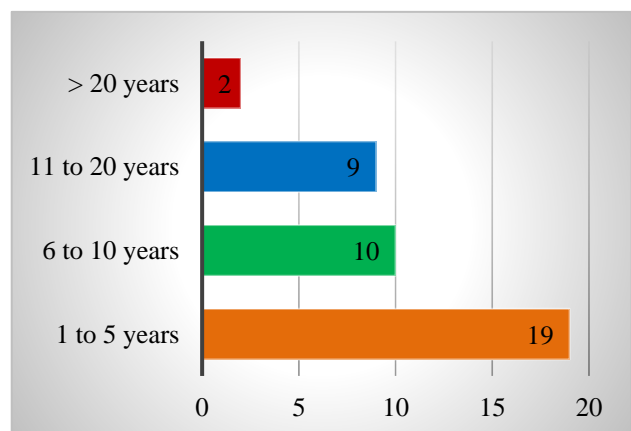


Figure 2: Distribution of the study population according to duration of psoriasis (n=40).

The initial site of involvement was in scalp in 13 (32.5%) followed by legs in 9 (22.5%), palms in 7 (17.5%), soles in 6 (15%) and back in 2 (5%) (Figure 3 and 4). In 3 (7.5%) patients the onset was in multiple sites. At the baseline The PASI score was 31.98 ± 6.08 and DLQI score was 36. Koebners phenomenon was present in 14 (35%) cases and Auspitz sign was positive in 38 cases (95%). The predominant symptom noted was pruritus 25 (62.5%) followed by pruritus and burning sensation in 10 (25%), only burning sensation in 3 (7.5%) and irritation in 2 (5%) of patients. Nail involvement was seen in about 27 (67.5%) of the study subjects, 15 (37.5%) males and 12 (30%) females and the difference was not statistically significant ($p > 0.05$). The nail changes noted corresponding to psoriasis were pitting 18 (45%), subungual hyperkeratosis 7 (17.5%), onycholysis 3 (7.5%), yellow brown discoloration of nail plate 9 (22.5%), others 3 (7.5%) and 31 (77.5%) did not have any nail involvement. Mucosal manifestations like erythematous lesions in the buccal mucosa was seen in only 2 (5%) of cases. Joint involvement with the evidence of psoriatic arthritis was noted in only 4 (10%) subjects, 3 (7.5%) males and 1 (2.5%) female and the difference was not statistically significant ($p > 0.05$). Arthralgia was predominant finding especially in smaller joints of the hand and foot followed by swelling and deformity. Nail findings were seen in all cases of joint involvement with no correlation to the duration of the disease.



Figure 3: Case of moderate plaque type psoriasis involving trunk and upper extremities.

The various comorbidities seen in our study were hypertension in 8 (20%), obesity 14 (35%), diabetes mellitus 16 (40%), dyslipidemia 27 (67.5%), metabolic syndrome 15 (37.5%) and myocardial infarction 2 (5%) (Table 1). One comorbidity was seen in 19 (47.5%), two in 6 (15%) and more than two in 4 (10%) of patients. In gender distribution of comorbidities male patients 15 (68.18%) outnumbered female patients 13 (72.22%) but the difference was not statistically significant ($p > 0.05$) (Table 2). The distribution of comorbidities with respect to severity of disease was 18 (72%) in moderate psoriasis when compared to 11 (73.33%) in severe psoriasis and the difference was not statistically significant ($p > 0.05$) (Table 3).



Figure 4: Case of severe plaque type psoriasis involving upper extremities with palmar involvement.

Table 1: Distribution of the comorbidities in study population (n=40).

Comorbidities	Number of patients		Percentage (%)
	Total	Comorbidities	
Hypertension	40	8	20
Obesity	40	14	35
Diabetes mellitus	40	16	40
Dyslipidemia	40	26	65
Metabolic syndrome	40	15	37.5
Myocardial infarction	40	2	5

Table 2: Distribution of the comorbidities in study subjects according to gender (n=40).

Gender	Number of patients		Comorbidities*	Percentage (%)	P value
	Total	Comorbidities			
Male	22	15	DYS, HT, MS, DM, MI, OB	68.18	0.2918
Female	18	13		72.22	

*DYS- Dyslipidemia, HT- Hypertension, MS- Metabolic syndrome, DM-Diabetes mellitus, MI-Myocardial infarction, OB-Obesity

Table 3 Distribution of the comorbidities in study subjects according to severity (n=40).

Severity	Number of patients		Comorbidities*	Percentage (%)	P value
	Total	Comorbidities			
Moderate	25	18	DYS, HT, MS, DM, MI, OB	72	0.5726
Severe	15	11		73.33	

*DYS- Dyslipidemia, HT- Hypertension, MS- Metabolic syndrome, DM-Diabetes mellitus, MI-Myocardial infarction, OB-Obesity

Seasonal variation was documented in only 10 (25%) of patients with exacerbation in winter months and remission in summer months. The most common triggering factor noted was trauma 6 (15%), followed by emotional factors 3 (7.5%), infection 2 (5%) and drugs in 1 (2.5%) patient. Complete resolution of the lesions was reported in only 5 (12.5%) in which 4 were attributed to medications and spontaneous resolution in 1. Among them the duration of remission varied from 1 to 6 months in most cases and rarely up to 2 years in one patient. The lesions mostly resolved with post inflammatory hyperpigmentation in 24 (60%), hypopigmentation 13 (32.5%) and atrophy in 5 (12.5%) due to potent topical steroids application. Complications like erythroderma 2 (5%), steroid induced folliculitis 5 (12.5%) and irritant contact dermatitis 2 (5%) to topical medications used was also noted in the patients.

Based on the distribution of the study population according to level of education only about 16 (40%) had primary education while 12 (30%) were illiterates and the remaining had mostly secondary level or Higher Secondary level of education. On analysis of the distribution of the study population based on occupation about 9 (22.5%) of the study population were unskilled labourers while 12 (30%) were skilled workers and nearly 10 (25%) were unemployed. Based on the distribution of the study population according religion about 33 (82.5%) of the study population were Hindus, while 6 (15%) and 1 (2.5%) were Muslims and Christians, respectively.

DISCUSSION

This was an observational study conducted among 40 clinically diagnosed subjects with moderate to severe plaque type of psoriasis based upon the clinical history and morphology of the dermatological lesions, socio-economic and demographic characteristics. Psoriasis is a complex disease which may present with wide ranging severity affecting different parts of the body. Mild to moderate psoriasis tends to refer to patients with relatively localized psoriasis. The moderate to severe category tends to refer to the patients with more generalized disease or disease that is otherwise disabling and according to a study by Liem W et al comprises 20-25% of all psoriatics seen in average practice. Psoriasis has traditionally been classified purely on the basis of body surface area as mild corresponding to less than 5% body surface area, moderated psoriasis equals 5-15% of body surface area and as severe psoriasis if body surface area is over 15-20%.⁷ Krueger et al revised this definition to include not only the body surface area involvement,

but also the quality-of-life issues as well as the patient's ability to withstand and deal with side effects relating to treatment.⁸

Psoriasis can affect all age groups and, in this study, the minimum age was 20 years while the maximum age was 56 years with a mean age of 37.43 ± 10.1 years. About 65% of the study subjects were in the age group of 21 to 40 years. This finding is concurrent to the one observed by Spuls et al who observed a mean age of 28 years while Sharma et al and Lal et al observed high incidence on the second decade.⁹⁻¹¹ Almost half (47.5%) of the study subjects with were having the disease for the 1 to 5 years duration while 25% had for 6 to 10 years and about 22.5% were having the disease for the 11 to 20 years. The minimum duration in this study was one year while the maximum duration was 30 years with a mean duration of 8.93 ± 7.02 years. Lal et al reported duration of illness between 18 months to 3 years while Lafah et al reported till 26 months.^{11,12} In our study the predominant symptom noted was pruritus 25 (62.5%), which was similar to the studies conducted by Newbold PCH13 who documented 92% and Yosip et al who noted 84%, with higher prevalence in patients with more severe disease.¹⁴

In this study, about 55% of the study subjects were males and the remaining were females (45%). The marginally higher incidence of psoriasis in males may be because of the fact that male patients usually come forward and report the symptoms and lesions while there is hesitancy because of the fear of stigma and social rejection among females. This finding is similar to the findings observed by Mehta et al and Gottlieb et al.^{15,16} The mean age of onset for males and females was 34.6 ± 13.24 and 26.54 ± 14.12 years. Gunawardena et al reported the tendency for the females to get the disease earlier than males as observed in the present study.¹⁷ Only 6 (15%) of the study subjects had family history of psoriasis in one or more members. The mean age of onset was earlier (20.23 years) in the female cases with a positive family history, as compared to males (25.36 years). Familial occurrence of psoriasis has been reported to vary from 4.4% to 90.9%. Farber and Nall reported that approximately three fourths of the patients with a family history of psoriasis were below 30 years of age when psoriasis started.¹⁸ Holgate observed that when one parent had psoriasis, 94% of probands of both sexes developed the disease before 30 years of age.¹⁹

Yasuda et al and Lomholt reported that the frequency of the lesions to be more on the scalp, elbows, trunk and lower extremities.^{20,21} In the present study scalp

involvement was seen in 36.5% followed by lower extremities in 27.6% and trunk in 23.5%. In our study nail involvement was seen in about 27 (67.5%) of the study subjects, 15 (37.5%) males and 12 (30%) females. This finding is similar to the findings observed by Farber et al and EL Zawahry.^{22,23} Association of psoriasis with arthropathy has been reported to be 4% by Wassman and 7% by Ingram.^{24,25} In the present study similar findings of Joint involvement with the evidence of psoriatic arthritis was noted in 4 (10%) subjects, 3 (7.5%) males and 1 (2.5%) female.

The comorbidities were seen in 29 (72.5%) of psoriasis patients in our study. Like previous studies, the major comorbidities observed in our study were hypertension in 8 (20%), obesity 14 (35%), diabetes mellitus 16 (40%), dyslipidemia 27 (67.5%), metabolic syndrome 15 (37.5%) and myocardial infarction 2 (5%). Dyslipidemia (67.5%) was the commonest comorbidity in our study. A study conducted by Thomas et al reported that obesity was seen in 6.6% and another study by Kaye et al also reported 6.3% among patients with psoriasis.^{26,27} In the present study, there was no statistically significant difference in occurrence of comorbidities among both male 15 (68.18%) and female 13 (72.22%) subjects and the difference was not statistically significant (p value =0.2918). Similar results were obtained in previous study by Gisondi et al who reported an equal distribution of comorbidities in both sexes. Few previous studies by Shapiro et al and Neimann et al have reported that the comorbidities were more commonly seen in severe disease.²⁸⁻³⁰ But in our study, though it was commonly present in severe type (73.33%) of psoriasis it was also noted in moderate type (72%) psoriasis and the difference was not statistically significant (p value =0.5726). This infers that comorbidities can occur irrespective of its severity.

A previous study by Lomholt reported seasonal changes with remission of psoriasis during summer and another study conducted by Yasuda et al noted exacerbation of psoriasis in winter.^{20,21} In our present study similar seasonal variations were documented in 10 (25%) patients with exacerbation in winter and remission in summer months. The most common triggering factor noted in our study was trauma 6 (15%), followed by emotional factors 3 (7.5%), infection 2 (5%) and drugs in 1 (2.5%) which was similar to a previous study conducted by Braun Falco et al that reported trauma to be the most common precipitating factor.³¹ Spontaneous clearing of psoriasis was recorded to be between 39% in a previous study conducted by Faber et al and 55% in another study by Yasuda et al.^{20,22} But in present study complete resolution of the lesions was reported in only 12.5% and the duration of remission varied from 1 to 6 months in most cases and rarely upto to 2 years in one patient. In this study, about 23% of the study population were unskilled labourers while 30% were skilled workers and 25% were unemployed. About 40% of the study population only had primary education while 30% were

illiterates and the remaining had mostly secondary level or higher secondary level of education.

Limitations

Only 40 clinically diagnosed subjects with moderate to severe plaque type of psoriasis could be enrolled in the current study as the duration of study was only 1 year. A larger number of subjects or increased duration of study period would have further substantiated the findings of the above study.

CONCLUSION

Patients with moderate to severe psoriasis mostly have a low quality of life with multiple significant comorbidities that increases the risk for morbidity and mortality. Co-morbidities are common in psoriasis of severe and moderate type and hence psoriasis is emerging as a systemic disease in current days and it is not skin deep. Dermatologist should be aware of these comorbidities and the current study strongly recommends screening of all patients with psoriasis, irrespective of their age, sex, duration of disease, severity and type of psoriasis.

Even if the patients are devoid of co-morbidities at screening, they should be advised to lead a healthy lifestyle practices so as to prevent the future development of co-morbidities and to maintain a good quality of life. This study also emphasise the importance of unified management by dermatologist and other specialists in this present era to prevent these comorbidities.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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