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RESEARCH ARTICLE

Predisposing factors and common clinical presentation of Psoriasis in rural population of Western Maharashtra.

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ABSTRACT

Psoriasis is a non-contagious inflammatory skin disorder characterized by dry, erythematous, scaly plaques that develops over various parts of body. Prevalence of psoriasis is 0-11.8% around the globe which varies from region to region and increasing globally. Its clinical presentation also varies depending upon the environmental, hereditary and various other predisposing factors. Knowledge of common clinical presentations and predisposing factors is essential in prevention, early diagnosis and treatment.

Objectives: To study the predisposing factors and common clinical presentations of psoriasis in patients.

Methods: A modified, pre-tested, semi-structured Psoriasis Evaluation plus Medication survey questionnaire was used in patients of psoriasis presenting to the skin department of Pravara Rural Hospital, Loni this study.

Results: Proportion of psoriasis was high in males of 20-40 years with positive family history. There was no significant association psoriasis with addiction. Psoriatic patches were of non-red, thickened, scaly in nature commonly observed on leg, forearm and scalp. The involvement of fingernail, toenail and combination of both along with Psoriatic arthritis was significantly higher in males.

Conclusion: Male predominance, family history is the common predisposing factors which are found to be associated with Psoriasis. There is involvement of 1-3 regions of body and non-red, thickened, scaly type of pattern of psoriasis is seen in psoriatic patients of rural western Maharashtra, which may be helpful in prevention and early detection of psoriasis.

INTRODUCTION

Psoriasis is an immune mediated genetically determined common dermatological disorder which affects skin, nails, joints and various systems of human body[1]. It is a non-contagious inflammatory skin disorder characterized by dry, sharp, erythmatous, scaly skin plaques that develops over various parts of body. The most commonly affected sites are scalp, tips of finger, sole, gluteal region, elbow, knees, shin, sacrum, over the breast and genitalia.

There are many distinct clinical subtypes, which often overlap with chronic plaque, guttate, generalized pustular, palm plantarpustular and erythrodermic.[(2,3)]

Clinical presentation of psoriasis varies in various regions around the globe. It is found that diagnosing psoriasis on clinical ground is a difficult task and requires knowledge of common clinical presentations in respective regions to confirm the diagnosis. Such knowledge of common clinical presentations of psoriasis may help the health care workers in early detection and diagnosis of psoriasis.

The Psoriasis has a worldwide distribution, with prevalence varying according to the geographic locations.[(1)]There are numerous population based studies which provides growing prevalence of Psoriasis in different population worldwide. Estimated prevalence of psoriasis is 0 - 11.8% in various locations around the globe. In USA prevalence of psoriasis is estimated around 4.6% while in Canada it is 4.7%. It is lower in UK which varies from 1.4 – 1.6 %. On the contrary most of the prevalence studies in India are hospital based and ranges the prevalence of psoriasis from 0.44 – 2.2%.

In spite of its growing prevalence and incidence the cause of disease remain unknown and the evolving evidences suggests that psoriasis is a disorder caused by the influence of hereditary factors[(5)], rapidly changing environmental compositions and modified life styles like stress, addiction to tobacco, alcohol etc.[(1,4)] These predisposing factors may play a key role in prevention as well as management of psoriasis and avoid its complications too. A better knowledge of factors affecting disease may allow application of preventive approaches. Keeping all this in mind a survey was planned to assess the various predisposing factors and the common clinical presentation of psoriasis in rural population of western Maharashtra.

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MATERIAL AND METHODS:

This survey based study was done in collaboration with department of Skin and VD in Pravara Rural Hospital, Loni where patients of nearby villages of western Maharashtra routinely visit for various health related problems. After applying inclusion and exclusion criteria, patients who were ready to give consent were enrolled in the study by convenient sampling techniques. Patients of Psoriasis, of any age and either sex, diagnosed by the dermatologist in PRH, and willing to give verbal informed consent were included in the study. Patients suffering from any chronic illness or auto immune disorders or receiving medications for other diseases were excluded from the study. It was a cross sectional study in which a data from 50 patients were collected .

A modified, pre-tested, semi-structured Psoriasis Evaluation plus Medication survey questionnaire was used in this study. Psoriasis Evaluation plus Medication survey questionnaire is used in the Collaborative Association Study of Psoriasis (CASP), which is a Genetic Association Information Network (GAIN).[6]

Data was collected under following headings from the individuals with psoriasis:

Predisposing Factors: family history of psoriasis or other autoimmune diseases; history of addiction.

Clinical Features: Age of onset, symptoms, area involved, and severity.

RESULTS:

In this study responses of survey questionnaire were received from 50 psoriatic patients from 1st January 2013 to 30th April 2013.

Figure 1 shows the proportion of psoriasis patients according to age and sex. Proportion of psoriasis in the age group of 20-40 years is found to be more as compared to other age groups. The proportion of psoriasis in males is higher than females in all age groups.

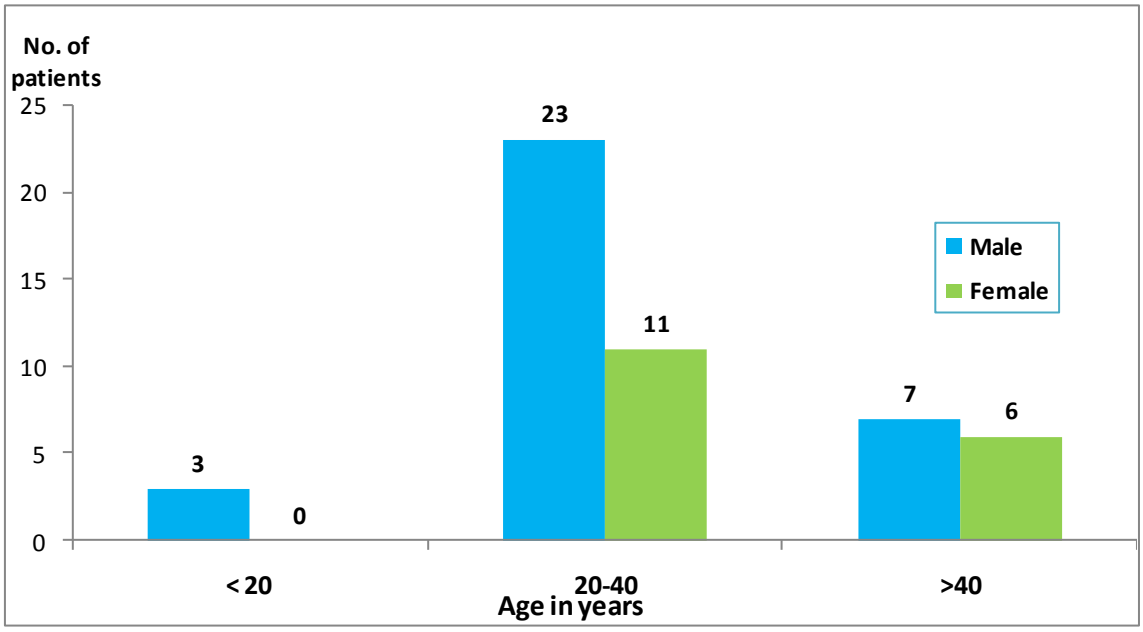

Figure 1: distribution of psoriasis according to age and sex

Table 1: Age of Onset and Diagnosis

Age (Yrs)	Age of onset	Age of diagnosis
0-10	3	2
11-20	9	7
21-30	16*	18*
31-40	12*	12*
41-50	3	3
51-60	4	5
61-70	3	3
Total	50	50

*($p<0.05$)

Table 1 shows the common age of onset and age of diagnosis of psoriasis in rural population of western Maharashtra.
By applying Z test of difference between two proportions, the proportion of age of onset in 21-30 and 31-40 years are significantly higher as compared to other age group under study ($p<0.05$).

Table 2: Correlation of family history with Psoriasis

Relatives	Yes
Father	2*
Mother	2*
Brother	0
Sister	0
Son	0
Daughter	1
Grandfather	2*
Grandmother	0
Uncle	0
Aunt	0
Total	7

*$p<0.05$ (Z test of difference between two proportions)

The correlation of the significant family history of psoriasis with the causality of psoriasis is depicted in table 2.
By applying Z test of difference between two proportions, the proportion of family history of father, mother and grandfather is significantly higher as compared to other relatives($p<0.05$)
By applying Z test of difference between two proportions, the proportion of addiction before onset (tobacco chewing and alcohol) is significantly higher as compared to other addictions ($p<0.05$)
Figure 3 shows that 1-3 region involvement is common in the psoriatic patients. There are maximum 8 regions involved.

Table 3: Regional Distribution of Psoriatic Patch (Multiple responses)

Region	Yes	No	Total
Scalp	14	36	50
Face	0	50	50
Chest	10	40	50
Abdomen	10	40	50
Back	13	37	50
Forearm	17	33	50
Arm	5	45	50
Thigh	9	41	50
Leg	22	28	50
Palm	12	38	50
Sole	11	39	50
Fingers	11	39	50
Toes	6	44	50
Fingernails	11	39	50
Toenails	6	44	50
Sexual organ	1	49	50

*** 37 (74%) cases were observed with multiple region involvement.**

Table 3 shows regional distribution of psoriatic patch on various parts of a body. Out of 50 patients 37 patients are having involvement of multiple regions where as 13 patients are with single region involvement.
In this study we observed various common clinical characteristics of psoriatic patches like color of patch, thickness of patch and pattern of scale over the patch.
Table 4 shows the variation in colors of psoriatic patches

Table 4: Colour of Psoriatic Patch

Color of Psoriatic Patch	Yes
No Redness	29*
Slight Pink	9*
Pink	2
Red	7*
Dark Red	3
Total	50

*P<0.05 (Z test of difference between two proportions)

By applying Z test of difference between two proportions, the proportion of no redness, sight pink and red is significantly higher as compared to other colors of Psoriatic Patch(p<0.05)

Table 5 depicts the variation in thickness pattern of psoriatic patches

Table 5: Thickness pattern of Psoriatic Patch

Thickness pattern of Psoriatic Patch	Yes
No Thickness	13
Feel Firm	10
Raised	17*
Thick	10
Very Thick	0
Total	50

*p<0.05 (Z test of difference between two proportions)

By applying Z test of difference between two proportions, the proportion of raised thickness pattern of Psoriatic Patchis significantly higher as compared to other thickness patterns (p<0.05)

Table 6 shows the pattern of scales over psoriatic patches

Table 6: Scales over psoriatic patch

Scales over psoriatic patch	No. (%)
No Scale	15(30%)
Slight Scaly	14(28%)
Scaly*	21(42%)
Flank	0(0%)
Very Flank	0(0%)
Total	50(100%)

*p<0.05 (Z test of difference between two proportions)

By applying Z test of difference between two proportions, the proportion of scaly Psoriatic Patch is significantly higher as compared to other scales (p<0.05)

Involvement of nails is also observed in this study. Table 7 shows the involvement of nails in male and female.

Table 7: Nail psoriasis pattern

Sex	Fingernail involvement	Toenail involvement	Combination of toe & fingernails	Total
Male*	5	1	3	9
Female	0	0	2	2
Total	5	1	5	11

***p<0.05 (**Z test of difference between two proportions**)**

By applying Z test of difference between two proportions, the proportion of fingernail involvement, toenail involvement and combination of both is significantly higher in males as compared to females. (p<0.05)

Association of Psoriatic arthritis in patient of psoriasis among male and female is shown in table 8.

Table 8: Association of Psoriatic Arthritis

Psoriatic arthritis	Yes	No
Male	6	27
Female	2	15
Total	8	42

By applying Z test of difference between two proportions, the proportion of Psoriatic arthritis is significantly higher in males as compared to females ($p<0.05$)

DISCUSSION:

Psoriasis is a chronic inflammatory disorder with significant predisposition of various factors like environmental, genetic, hereditary, infections and addictions [7,8,9,10]

The prevalence of psoriasis is increasing in developed as well as developing countries. Its significance is improving day by day in non-communicable diseases around the globe. This will probably lead to increase the burden over health care sector.

Various measures shall be taken to improve the awareness about the predisposing factors for primary prevention and the common clinical presentation/pattern of disease for early detection and diagnosis of psoriasis.

The present study observed the important predisposing factors and frequently observed clinical pattern of psoriasis in rural population of western Maharashtra.

In present study it is found that in rural area of western Maharashtra, psoriasis is more common in age group of 20-40 years. Also it is observed that in all the age groups, proportion of psoriasis among male is higher as compared to female. This finding of our study finding is similar to the findings of a study conducted in north Indian popullatio by Bedi et al. [11]

Age of onset of psoriasis is found more in the age group of 20 to 40 as compared to other age groups suggesting that occurrence of psoriasisis not common among children as well as elderly population. This finding of psoriasis in rural population differs from the findings of Hellgren et al [12]as well as Farber et al[13]. they found higher prevalence of psoriasis with greater age. But Brandrup et al[14] suggested that there is no consistent correlation between age and psoriasis. This higher proportion of psoriasis in middle aged patients may suggest a cohort effect and the influence of environmental factors.

Regarding family history of psoriasis and occurrence of psoriasis it is found that a single patient in the family may lead to strong and consistent risk. Also amongst the first degree relatives, chances of psoriasis will raised to great extent. Our study reveals the same findings i.e. there is significant correlation between occurrence of disease in mother, father and grandfather.

Zhu K J[15] et al found significant correlation of addiction and psoriasis. Findings of our study are contradictory to that of Zhu K J et al. because there are very few cases with addiction. But the proportion of alcohol consumption and tobacco chewing was significantly higher amongst the addicts. According to various studies, correlation of addiction and psoriasis is not consistent and it may vary from region to region.

Clinical presentation of psoriasis varies to some extent in rural population as compared to its generalized presentation all around the world. In our study commonly 1-3 regions of body are involved among which the leg, forearm and scalp are the frequent one. Whereas literature revealed that, the involvement of scalp, ear, eyelid, mouth and nails are common [16,17,18]with multiple region involvement. The pattern of psoriatic patch in our study population in terms of color, thickness and presence of scales also vary to some extent than the generalized pattern. We found no redness over the patches more frequently with increased thickness and formation of scales. Whereas according to National Psoriasis Foundation, red or erythmatous, scaly and thickened patches of psoriasis is the common presentation.[19] For these variations in the clinical presentation among rural population either environmental factors, variation in lifestyle or genetic factors may be responsible. Hence to conclude these changes in pattern of psoriatic patches in rural population of western Maharashtra more studies, either with larger sample size or at multiple sites are required.

CONCLUSION:

With the findings of our study, it can be concluded that, in rural population of western Maharashtra, the psoriasis is more common in males of age group 20 to 40 years. It is common in patients with positive family history in first degree relatives and it is not common in addicts but amongst addicts with psoriasis the proportion of alcohol and tobacco chewing is more significant.

Clinical presentation of psoriasis in rural population of western Maharashtra is involvement of one to three regions with no redness, thickened, scaly psoriatic patches. Nail psoriasis is common in male as compared to

females and psoriatic arthritis is also common among the males.

Hence this knowledge of predisposing factors and common clinical presentations will help the health care workers in rural area of western Maharashtra to prevent as well as to detect and diagnose psoriasis as earliest.

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