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RESEARCH ARTICLE

CLINICO-EPIDEMIOLOGICAL STUDY OF PSORIASIS IN A TERTIARY CARE HOSPITAL, PUDUCHERRY

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ABSTRACT

AIMS & OBJECTIVES: The aim of the study is to clinically estimate the prevalence of common type of psoriasis in tertiary care hospital, Puducherry. **MATERIALS & METHODS:** The study was carried out as cross sectional study among 100 patients visiting the outpatient clinic of department of dermatology of our tertiary hospital for a period of 1 year. A structured interview schedule was used to elicit data regarding medical history. **RESULTS:** Detailed history was taken which shows itching and scaling as major complaints. Clinical examination of type of psoriasis based on site and distribution was carried out. Most common site of involvement is trunk, extremities, palms & soles. Symmetrical type of distribution is common. A majority of participants belong to the age group of > 40 yrs, males 62 % and females 38%. Clinical signs were elicited, Data was entered and analysed using SPSS software version 21. Out of 100 patients, Auspitz sign positive in 37%, Koebner phenomenon was elicited in 38% patients. Oil drop sign was present in only 1% patients, Wornoff ring which is seen in regressing lesions were present in only 1% patients. No signs were noticed in 10 % patients. Out of 100 patients The prevalence of Chronic plaque psoriasis is 37% , which is the most common type of psoriasis in our study, palmoplantar psoriasis being second most common type which is 27 % , scalp psoriasis is 12%, guttate psoriasis 11%, erythrodermic psoriasis 9 %.

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INTRODUCTION

Psoriasis, is a chronic inflammatory skin disease affecting skin, nail and joints with a strong genetic basis, characterised by complex alterations in epidermal growth and differentiation. Psoriasis of skin is chronic inflammatory disease characterized by inflammation of epidermis & dermis associated with thickened epidermis & atypical keratinocyte proliferation & differentiation. Psoriasis a dermatological condition is of importance to a clinician beyond treatment of the skin lesions (Christ, 2006). This skin condition characterized by red, scaly plaques, which could cover all parts of the body, has a greater impact on the affected persons psychological and physical well-being than many other chronic medical ailments like diabetes or cancer. Psoriasis is a common disease with estimated prevalence of approximately 2-3% of the world

population Exact Etiology of psoriasis is unknown but epidemiological studies have identified several risk factors including smoking, high body mass index, sedentary life style and excess alcohol consumption. Psoriasis, is a chronic inflammatory skin disease affecting skin, nail and joints with a strong genetic basis, characterised by complex alterations in epidermal growth and differentiation. Psoriasis of skin is chronic inflammatory disease characterized by inflammation of epidermis & dermis associated with thickened epidermis & atypical keratinocyte proliferation & differentiation. Psoriasis a dermatological condition is of importance to a clinician beyond treatment of the skin lesions (Christ, 2006). This skin condition characterized by red, scaly plaques, which could cover all parts of the body, has a greater impact on the affected persons psychological and physical well-being than many other chronic medical ailments like diabetes or cancer. Psoriasis is a common disease with estimated prevalence of approximately 2-3% of the world population Exact Etiology of psoriasis is unknown but epidemiological studies have identified several risk factors including smoking, high body mass index, sedentary life style and excess alcohol consumption.

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A lifelong chronic disease, Psoriasis is independently associated with depression, down look and psychiatric comorbidity. Psoriasis is heterogeneous in its morphology, affected sites, natural history, age at onset, duration, precipitating factors. It's an immune mediated genetically determined condition with various systemic associations and the genetic predisposition has a significant role in the etiopathogenesis of the disease and familial clustering of the cases has been observed. But Indians studies show low familial association of the disease. Bedi reported positive family history of psoriasis in 14% of their patients. Kaur *et al* reported family history in only 2% of their patients. The prevalence of Psoriasis varies across the world and according to published report prevalence in different parts varies from 0 to 11.8 %. In India, prevalence varies from 0.44 to 2.8 %; twice common in males, more common in third or fourth decade at the time of presentation. Psoriasis is associated with certain HLA antigens and complementary factors. In India common HLA association is HLA A1, HLA B17, HLA CW6 In South India, HLA BW57, and HLA DR7 (Langley, 2005).

There is a growing number of population-based studies providing worldwide prevalence estimates of psoriasis. Prevalence of psoriasis varies in different parts of the world. According to published reports, prevalence in different populations varies from 0% to 11.8% (Christ, 2006). For most of the data given, the range extends from around 0.5% to close to 2.5%. In the USA, the prevalence of psoriasis was estimated to be around 4.6% while in Canada it was 4.7%. Data from Europe show little variation in countries with a range from 1.4% (Norway), 1.55% (Croatia) and 1.6% (UK). In East Africa, the figure was 0.7% and in thehenan district of china only 0.75% were found affected. Most of the data on prevalence has been derived from hospital-based studies while there are only few well-defined large population based studies done to find the exact prevalence of this dermatoses in the community. Prevalence studies from India are mostly hospital-based. It presents the comparative data from various epidemiological studies on psoriasis from India. Okhandiar *et al.* collected a comprehensive data from various medical colleges located in Dibrugarh, Calcutta, Patna, Darbhanga, Lucknow, New Delhi and Amritsar. They found that the incidence of psoriasis among total skin patients ranged between 0.44 and 2.2%, with overall incidence of 1.02%. They noted that the incidence in Amritsar (2.2%) was higher as compared to other centers in Eastern India and speculated that it may be related to different environmental conditions (extremes of temperature), dietary habits, and genetic differences. The ratio of male to female (2.46:1) was very high which could not be clearly accounted for. Highest incidence was noted in the age group of 20-39 years and the mean age of onset in males and females was comparable. Genetic predisposition has a significant role in the etiopathogenesis of psoriasis and familial clustering of the cases has been observed. Farber *et al.* reported familial occurrence in 36% of their patients. Familial incidence is greater in childhood psoriasis compared to adult onset psoriasis. Indian studies report lower familial incidence of the disease. Bedi reported positive family history of psoriasis in 14% of their patients. While Kaur *et al.* reported family history in only 2% of their patients. First degree relatives were affected in 84% of the cases while second degree relatives in 12% cases. There are only few studies which have made record of family history of psoriasis in their patients, so definite statistical data on familial incidence is not available.

of the keratinocytes is ten to hundred times more than that in normal skin. Normally skin cells mature and shed from the skin surface every 28-30 days. In psoriatic skin, keratinocytes raise to surface in 3-6 days scaly, white patches (Hanson, *et al.*, 2008). Plaques are formed due to failure of fast dividing keratinocytes to mature properly. These plaques can be itchy and painful (Christ *et al.*, 2006; Langley, 2005).

Aims and Objectives: To study the various patterns of presentations and prevalence of psoriasis among the patients attending dermatology out patient department in a tertiary care hospital, Puducherry.

Objectives

This study was carried out to

- To study different types of psoriasis and estimate their prevalence in both male and female.
- To know the disease progression and comorbid conditions including triggering factors

MATERIALS AND METHODOLOGY

Study Design: The study was carried out as a cross sectional study in a teaching hospital.

Study Area: This study was undertaken in outpatient department of dermatology in our hospital.

Study Period: The study was carried out for a period of one year from April 2018 - March 2019

Study Population: The study population of consisted of all patient show visited the outpatient department during the study period.

Sample Size And Sampling Techniques: Sample size – 100
Sampling technique –convenient sampling

Ethical Approval And Informed Consent: Approval was obtained from the Institutional Ethics Committee prior to the commencement of the study. (Annexure II) . Each participant was explained in detail about the study and informed consent was obtained prior to the data collection.

(Annexure III).

Selection Criteria

Inclusion Criteria

- All patients with psoriasis attending DVL OPD, both males and females including all age groups in the department of DVL, SLIMS.
- Also patients those who were already diagnosed and treated before study period, who attended OPD during study period.

Exclusion Criteria: Pregnant Patients were excluded from the study

Data collection tools: A structured interview schedule was used to collect information regarding the back ground characteristics and skin lesions. The interview schedule was divided into counterparts:

Demographic history: In this section information regarding age, sex, site and duration of the lesion, pre- existing lesion were obtained

Medical history: Presenting complaints, duration, progression, relapse / remission were elicited. History of comorbidites, chronic drug intake were elicited.

Clinical examination: Examination was done by principal investigator. Detailed clinical examination was carried out by the investigator for morphology, site, size, number of lesions and eliciting clinical signs. Diagnosis made mainly by clinical examination.

Data Analysis

Data was entered and analyzed using SPSS version 21 software. Percentages were used to describe the prevalence of different types of psoriasis among the patients Attending the dermatology opd.

RESULTS AND ANALYSIS

This cross –sectional study was carried out among 100 participants visiting the outpatient clinic of our department. The consent form was given to the patients prior to the interview. A structured interview schedule was used to elicit history regarding the medical conditions. Each participant was clinically examined to identify the type of psoriasis. Clinical signs were elicited.

Background Characteristics: Majority of participants in our study belong to the age group > 40 yrs. Males were about 62% and females were 32% out of 100 patients. Frequency of complaints, drug history, progression, relapse & remission, seasonal variation, personal history, family history, comorbidities, site of involvement, distribution, clinical signs , diagnosis were elicited.

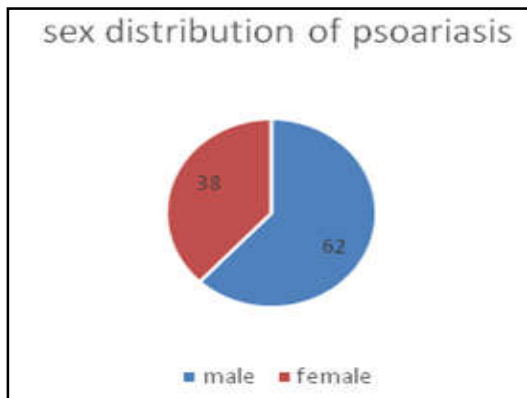


Fig.1. Shows sex distribution of psoriasis

The above pie chart shows sexual distribution of psoriasis among study population. The above Bar Diagram shows the distribution of frequency of complaints among the study population.

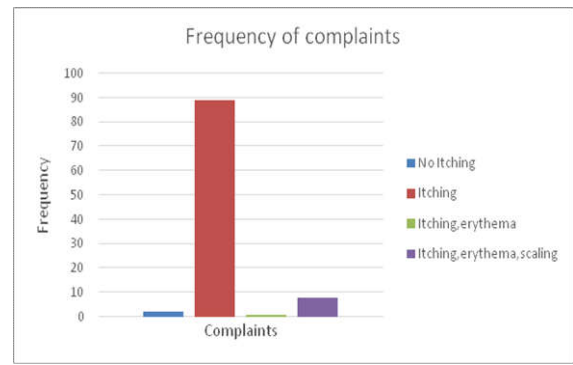


Fig. 2. Shows frequency of complaints

Table 1. Distribution based on the progression, relapse & remission

Variables	No of Cases	Frequency
Drug History of Psoriasis	Present	17
	absent	83
Progression	Present	92
	absent	8
Relapse & Remission	Present	69
	absent	31
Seasonal variation	No variation	43
	Summer	32
	Winter	24
	Both	1

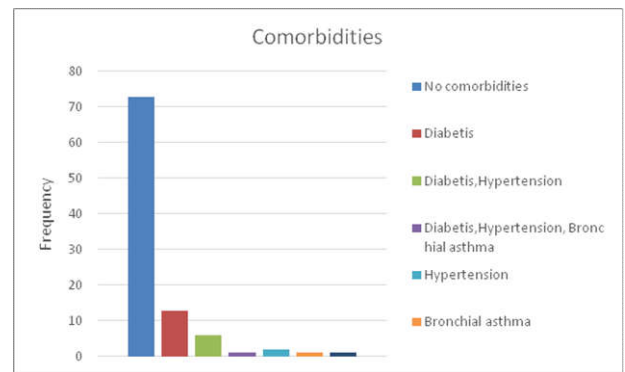


Fig. 3. Shows frequency of co morbidities in the study group

Table 2. Distribution of site of involvement in psoriasis among the patients in our study

Site	Frequency	Percentage
Palms & soles	34	34
Axilla, groin	1	1
Elbow,knee	3	3
Extremities	17	17
Nails	1	1
Penis	1	1
Trunk , extremities	29	29
Trunk, extremities, face	9	9
Trunk , extremities,face,scalp	5	5

The above table 1 shows the distribution of history in Psoriasis among the patients in our study group where only 17% reported the history of drug. The progressive nature of Psoriasis among the study group showed 92% with the complaints of progression and the remaining 8% remained stable. 69% reported with frequent relapse and remissions, which was absent in the remaining 31%. Based on the distribution of seasonal variation of Psoriasis among the patients in our study group, 43% had no variation, 32% reported variation during summer, 1% reported variation during summer & winter and the remaining 24% reported changes during winter.



Fig. 4. Shows site of distribution of psoriasis in study population

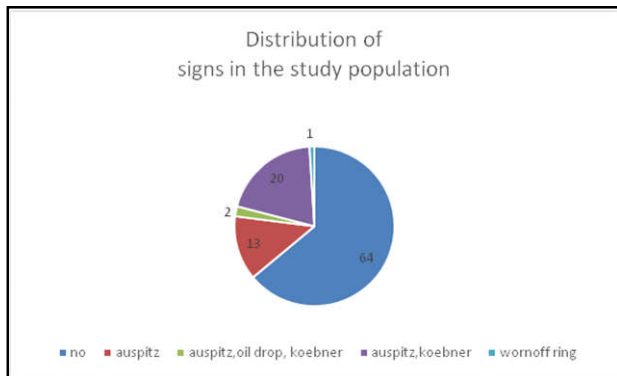


Fig. 5. Shows distribution of signs in the study population

Diagnosis	Number of cases	Percentage
Chronic plaque psoriasis	37	37
Palmo plantar psoriasis	27	27
Flexural psoriasis	1	1
Scalp psoriasis	12	12
Guttate psoriasis	11	11
Erythrodermic psoriasis	9	9
Nail psoriasis	1	1
Genital psoriasis	1	1
Pustular psoriasis	1	1

The above figure shows the distribution of co-morbidities among the Psoriasis patients of our study group. The below table shows the distribution of site of involvement in psoriasis among the patients in our study where 34% reported involvement of palms & soles, 1% axilla and groin involvement, 3% elbow and knee involvement, 17% reporting extremities involvement, 1% nail and penis involvement each, 29% trunk and extremities involvement, 9% reporting involvement of trunk, extremities & face and the remaining 5% reported the involvement of trunk, face, scalp and extremities. The below figure shows the distribution of psoriasis in our study population. The above table shows the distribution of scalp involvement where only 31% reported positive and the remaining 69% were negative, 1% had the oral mucosa involvement and the remaining 99% remained negative. 1% had genital mucosa involvement and the remaining 99% remained negative, 45% were positive and the remaining 55% remained negative. The distribution of nails involvement in psoriasis among the patient attended during study period where only 30% had pitting of nails, 15% with nail dystrophy and the remaining 55% had no nail involvement. The above pie chart shows the distribution of signs among the study population. The below table shows the distribution of frequency of clinical pattern among the psoriatic Patients where 37% had chronic plaque psoriasis, 27% had palmo plantar psoriasis, 12% had scalp psoriasis, 11% had guttate

psoriasis, 9% had erythrodermic psoriasis, 1% with flexural psoriasis, 1% with nail psoriasis, 1% with genital psoriasis and the remaining 1% with pustular psoriasis.

DISCUSSION

Chronic Plaque Psoriasis seen in 37% of patients and this is the major type, among the study group. In general patients attending to our DVL OPD, majority patients are suffering from chronic plaque psoriasis. Many cases we are treating with PUVA/ Methotrexate. Many patients were middle aged; mostly males belong to this category. In a study Christensen TE, Callis KP, Hoffman MS et al. in their observations identified two morphological variants, thin plaque and thick plaque Psoriasis. Erythrodermic Psoriasis is diagnosed and treated in our study in 9% of patients out of 100 cases. This condition usually less common, among the types of Psoriasis – the same is observed in our study. Primary erythroderma will present without comorbid conditions, but secondary erythroderma always associated with pre existing dermatoses, particularly psoriasis. According to literature majority of these patients develop secondary erythroderma. Pustular psoriasis least common condition, We found 1% involvement in our study group. Pustular psoriasis is most common cause for development of secondary erythroderma. Oral mucosal involvement not seen in 99% of patients. But noticed in 1% of study group. Oral mucosal lesions can present as isolated variant, which is known as geographic tongue, variant of psoriasis. Unlike lichen planus or pemphigus. The involvement of oral cavity is rare in psoriasis. Palmoplantar psoriasis needs to be differentiated from Differential diagnosis with palmar eczema / contact dermatitis. Psoriatic lesions over the genital mucosa observed in 2% of study group. But not found in rest of the 98% of patients. Involvement of genital mucosa is less common or least common, the same which study reveals. There is literature published by Babu M, Ramachandru P, Naikh BKH, on Psoriasis of the mucous membrane in IJDV, supporting our study. In the skin OPD in our hospital, many cases are attending with Palmoplantar Psoriasis, without involvement of other sites.

Even during follow up lesions are confined to palms and soles only. Known as Palmoplantar psoriasis. In our study group 73% of patients there is no involvement of palms and soles and 27% we observed lesions over palms and soles. Flexural psoriasis 1% in our study group, which is rare type of psoriasis. This condition also called Inverse psoriasis. We noticed these lesions in a male at the groin and inner aspect of thighs. Erythematous shiny, asymptomatic lesion. Scalp involvement observed in 31% among total number of patients, whom we selected for the study and remaining 69% are without scalp lesions. In psoriasis scalp alone can involve; without involving other body sites, including nails. Scalp psoriasis is common in patients who are attending DVL OPD in our hospital. This study reflects the same, which we noticed in our department. Nail involvement seen in 45% of patients. Nails are normal in 55% of patients during my study period. Nail changes observed in our patients are Pitting and dystrophy. Other changes which we usually seen in Psoriasis, not found in our study group. There are study on the nail psoriasis by Grover C and Reddy BS Uma Chathruvedi K in British journal of Dermatology 2005. And Zias N psoriasis of the nail a clinicopathological arch dermatol 1969. In the study which is conducted by Velappan R et al. Int. J. Res. Dermatol. 2019 Aug; 5930 452-456 reveals chronic plaque psoriasis is

the most common clinical pattern, observed irrespective of age and sex.

Conclusion

In our study group surprisingly we never came across rare clinical presentations like Rupoid psoriasis or Ostraceous psoriasis or Elephantine psoriasis. In majority of patients, 37% had Auspitz sign positive which is most commonly seen in Chronic plaque psoriasis. And 38% showed koebner phenomenon, only 1% showed oil drop sign & worn off ring. Remaining patients in the study group did not show any signs. Most of the patients attending with Plaque psoriasis and during the study period they did not go in to erythroderma and they responded well to Methotrexate. In this group not all patients show the nail changes. Scalp involvement noticed in 31% of patients and this is the second highest among types of Cutaneous psoriasis.

During the study period it did not spread to other body sites. Clinically we are able to exclude other scaly scalp dermatoses. Erythrodermic psoriasis consists of 9%, which is a cause for secondary erythroderma successfully treated as inpatient and absolutely no mortality. We are able to differentiate clinically palmoplantar psoriasis with Eczema Flexural psoriasis also known as inverse psoriasis seen in 1% of study group in middle aged men. It is asymptomatic and also chronic. We observed 1% Pustular psoriasis in this study. Which is least common in clinical practice and also similar data reflects in the literature. Oral mucosa and genital involvement is rare – each comprised of 1% only. Though there is no sexual predilection, we observed male preponderance in our study. Interestingly during the study we did not find patients at younger age, neither infants nor children affected with psoriasis. Almost all patients are in the adulthood. Very few patients comes under geriatric age group. Finally our study is closely related to other Indian studies, the literature which is available on Epidemiology of psoriasis on clinical patterns.

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