

Original Research Article

Clinico-epidemiological profile of palmoplantar dermatoses in northeast India

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ABSTRACT

Background: Palmoplantar dermatoses are skin diseases affecting palms and soles and are commonly seen in the dermatology practice. It can cause significant discomfort to the patients, affecting their daily activities and also is a diagnostic dilemma to the physician. The aim of this study is to determine the clinico-epidemiological profile of palmoplantar dermatoses among patients attending the outpatient department (OPD).

Methods: Hospital based cross sectional study carried out from September 2018 to August 2020 in patients attending outpatient department of dermatology in Regional Institute of Medical Sciences (RIMS) Hospital, Imphal, Manipur.

Results: Of the total 200 patients, nearly half were males (50.5%). Most common age group involved was 26-45 years. Itching was the most common symptom (60%). Multiple lesions with palm alone involvement accounted for higher percentage with 39.5% followed by palmoplantar involvement. Most common palmoplantar dermatosis in the study was eczema with 23% followed by psoriasis (7.5%), dermatophytosis (7%), verruca vulgaris (6.5%), and keratolysis exfoliativa (6%).

Conclusions: Eczema was the most common palmoplantar disorder followed by psoriasis. Diagnosis of palmoplantar dermatoses is important at the earliest for appropriate management which helps in improving the patient's quality of life.

Keywords: Palmoplantar dermatoses, Eczema, Psoriasis

INTRODUCTION

Palms and soles are those part of our body which is exposed to environment, people, objects and harmful products for the wholesome of day increasing risk of infection, trauma and thereby dermatoses. Besides they are the readily visible areas of the body that are affected in various dermatoses, with or without affecting skin elsewhere in the body.¹

They cause significant discomfort to the patient, limiting the day-to-day activities, thereby impairing quality of life

too. As there are innumerable overlapping features both clinically and histopathologically, it is always a diagnostic as well as therapeutic dilemma for a dermatologist. Need therefore arises for a comprehensive study on pattern of dermatoses. Unfortunately, very few studies discussing the same, were published from India and none till date from north east India.

The present study is therefore undertaken to study the demographic profile, different clinico-morphological patterns of palmoplantar dermatoses among the people in this part of our country.

METHODS

The present study was a hospital based cross sectional study carried out from September 2018 to August 2020 in patients attending outpatient department of dermatology, venereology and leprology in Regional Institute of Medical Sciences (RIMS) Hospital, Imphal, Manipur after obtaining approval from the research ethics board of the institute. A total of 200 patients were enrolled after obtaining written consent from them. Patients with palmoplantar dermatoses of any age group and sex were included. Patients who were not willing to participate or did not give their consent were excluded. A detailed history was taken and a thorough clinical examination using magnifying glass and dermoscopy was done along with a pre-structured proforma. Investigations such as KOH mount, routine blood tests, and skin biopsy were done when required. The data was analysed using IBM statistical package for the social sciences (SPSS) statistics 21 for Windows.

RESULTS

Of the total 200 patients included in the study, 101 (50.5%) were males and 99 (49.5%) were females with M: F=1.02:1. The most common age group affected was 26-45 years with 70 (35%) patients, followed by 13-25 years with 62 (31%) patients (Figure 1). The age group of the patients ranged from 4 months to 68 years with mean age 25.28±15.2 years. Students were the highest population accounting for 33.5% (Table 1).

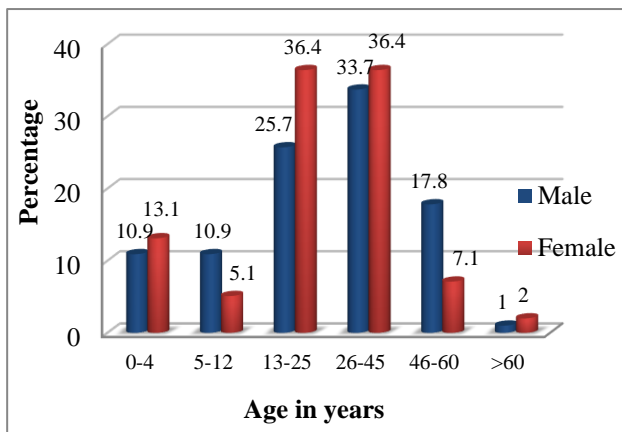


Figure 1: Gender distribution.

Table 1: Occupation of the patients.

Occupation	No. of patients (N)	Percentage
Laborer	13	6.5
Student	67	33.5
Clerk	46	23.0
Army personnel	9	4.5
Housewife	32	16.0
Unemployed	33	16.5

Itching was the most common presenting symptom in 120 (60%) patients, followed by redness in 80 (40%) patients (Table 2). Both less than 1 month and 1-3 months of illness duration shared equal distribution in 62 (31%) cases. Seasonal variations were present in 72 (36%) patients. Trauma was the most common aggravating factor (11.5%), whereas more than half (53%) had no aggravating factors. Among housewives, detergents (4.5%) and vegetables (3%) were the common aggravating factors. Majority of patients did not have any atopic history, 57 (28.5%) patients had allergic rhinitis. Sixty-four (32%) patients had associated systemic diseases like hypertension, diabetes mellitus, thyroid disease, liver disease or pulmonary disease. Past history of similar illness was seen in 49 (24.5%) patients and 17 (8.5%) patients had history of similar illness in the family. Thirty (15%) patients had previous treatment history for the same disease.

Table 2: Presenting symptoms of patients.

Symptoms	No. of patients (N)	Percentage
Itching	120	60.0
Redness	80	40.0
Pain	61	30.5
Thickening	45	22.5
Peeling of skin	41	20.5
Burning sensation	26	13.0
Blister	24	12.0
Swelling	16	8.0
Pitting	13	6.5
Depigmentation	10	5.0
Tightening of skin	7	3.5
Sweating	7	3.5

Majority of patients presented with multiple lesions (95%). Only palms were involved in 79 (39.5%) patients, soles only in 46 (23%) patients and both palms and soles in 75 (37.5%) patients (Figure 2).

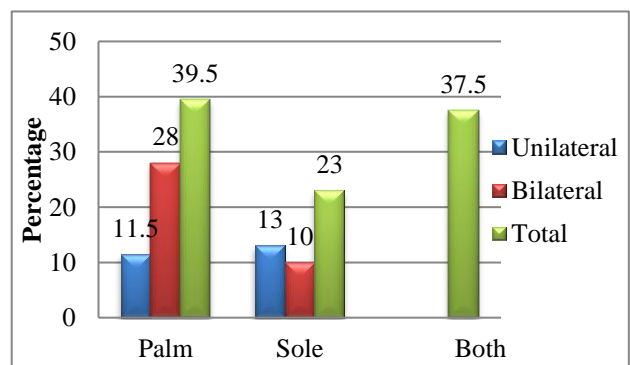


Figure 2: Distribution of lesions.

Considering other body area involvement, nail was involved in 34 (17%) patients followed by trunk (13.5%) and oral cavity (9%). Among investigations, skin biopsy for histopathological examination (HPE) was done in 42

(21%) cases, KOH in 24 (12%) and fungal culture in 10 (5%) cases.

The most common palmoplantar dermatosis in the study was eczema (23%), followed by psoriasis (7.5%), dermatophytosis (7%), verruca vulgaris (6.5%), and keratolysis exfoliativa (6%) (Table 3).

Table 3: Distribution of palmoplantar dermatoses.

Diagnosis	No. of patients (N)	Percentage
Eczema	46	23.0
Psoriasis	15	7.5
Dermatophytosis	14	7.0
Verruca vulgaris	13	6.5
Keratolysis exfoliativa	12	6.0
Hand foot mouth disease	11	5.5
Adverse drug reactions	11	5.5
Candidiasis	10	5.0
Perniosis	10	5.0
Vitiligo	10	5.0
Scabies	9	4.5
Corn	9	4.5
Systemic sclerosis	7	3.5
Pitted keratolysis	6	3.0
Secondary syphilis	5	2.5
Hyperhidrosis	3	1.5
Melanoma	2	1.0
Palmoplantar keratoderma	2	1.0
Trauma	2	1.0
Trophic ulcer	2	1.0
Urticaria	1	0.5

DISCUSSION

Palmoplantar dermatoses are commonly found in dermatological practice causing significant distress to the patient. Involvement of palms and soles affects the individual's ability to perform day-to-day activities. Among the various palmoplantar dermatoses, few are specific to palms and soles, while few involve other body areas also.³

A total of 200 patients were included in our study with a slight male preponderance (50.5%) and M: F=1.02:1, similar to study by Kang et al.² Studies by Nair et al and Rathoriya showed definite male preponderance of 1.2:1 and 1.4:1 respectively.^{1,3} Majority of the patients belonged to the age group of 26-45 years (35%) which was comparable to the findings of Nair et al and Rathoriya, with the common age group being 17-40 years and 31-40 years respectively.^{1,3}

In the present study, students (33.5%) constituted majority, contrary to the earlier studies where housewives and

laborers were the majority.^{1,3,4} This may be due to the predominance of patients in age group 5-25 (39%), who are mostly school/college going population in our study. Majority of the patients (60%) had itching as main complaint which was comparable to other studies.^{1,3,4} Though palmoplantar dermatoses are chronic in nature, most patients had presented with complaints for less than 1 month (31%) and 1-3 months (31%) which was similar to the study reported by Nair et al.¹ Seasonal variation was seen, with psoriasis and eczema aggravation in winter and fungal infection in summer similar to other studies.^{1,2}

In this study, only palmar involvement was seen in 39.5% of patients, soles only in 23% of patients, and both palms and soles in 37.5% cases which is comparable to Hongal et al.⁴ While in study by Kang et al, plantar involvement was majority with 51.9%.² Only palms involvement was seen mostly in keratolysis exfoliativa, eczema, only sole involvement in corn, tinea pedis and both in psoriasis, hand, foot and mouth disease (HFMD) and vitiligo. Majority of patients (95%) presented with multiple lesions, similar to Nair et al.¹ Involvement of other body areas was seen in 32% of cases similar to the study by Rathoriya et al.³ Among them, nail was commonly involved area in 17% of patients, with ridges, pitting and thickening as common nail changes, with maximum incidence in palmoplantar psoriasis, followed by tinea infection, candidiasis and eczema.

Eczema was the most common dermatosis found in 23% of cases. Among eczematous dermatitis, contact dermatitis was most common (10.5%) followed by pompholyx (7%) and hyperkeratotic eczema (5.5%) (Figure 3-5). These results were contrary to other studies in which palmoplantar psoriasis accounted for maximum.^{1,4} Another similar study by Kang et al showed palmoplantar pustulosis with 23.2% as the majority.² A definite female predominance was noted (M: F=1:2) with housewives being the commonest population. Pompholyx was predominant among 0-12 years age group. Detergents were noted as an important aggravating factor for eczema, so were hair dye and vegetables for contact dermatitis. Involvement of only palms were seen in 65% of cases and palmoplantar involvement in 35% of cases.



Figure 3: Allergic contact dermatitis (bullous) to hair dye.



Figure 4: Irritant contact dermatitis.



Figure 5: Plantar eczema.

In our study, 15 cases of psoriasis (7.5%) were noted with histopathological confirmation and became second-most common palmoplantar dermatoses (Figure 6). A male preponderance was seen similar to other studies, and majority in 46-60 years age group contrary to study by Khandpur et al with 21-50 as major group.^{4,5} This difference may be due to the shorter intervals of age group considered in this study. In our study palmoplantar psoriasis was common in housewives and elderly retired individuals whereas by Khandpur et al it was common among farmers, manual labourers and housewives.⁵ Palm and sole involvement were majority with 74% similar to Khandpur et al.⁵ In study of Kumar et al, plantar involvement was twice more common than palmar involvement.⁶ Nail involvement was observed in 66% of patients, which was similar to Hongal et al.⁴ A seasonal aggravation during winter was observed and 60% had associated HTN and dyslipidemia.

In our study, 14 patients (7%) had tinea infections. Among them, 8 cases were of tinea pedis and 6 were of tinea manuum. A male predominance was observed with higher incidence at 26-45 years of age. Along with palms and soles, other body area was involved in 10 cases (71%), with onychomycosis being majority in 8 cases. A seasonal aggravation during summers were also prominent, which is consistent with findings by Hongal et al and Pankajalakshmi et al.^{4,7}

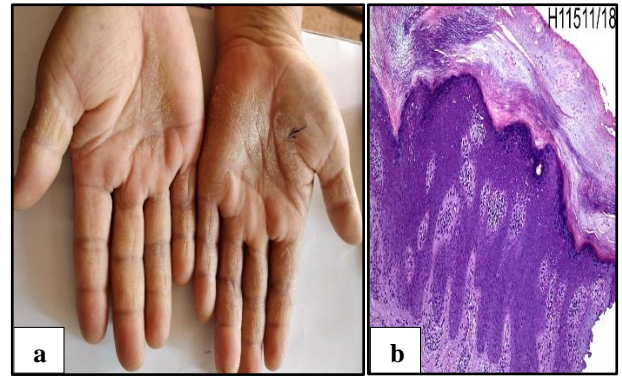


Figure 6: (a) Psoriasis involving bilateral palms; (b) histopathology of psoriasis with epidermis displaying hyperkeratosis, parakeratosis with mildly elongated rete pegs and neutrophils in the parakeratotic mounds with lymphocytes in the lower epidermis (H&E, 40X).

Keratolysis exfoliativa is a common disease, in which discrete areas of superficial skin peeling occur on palms, starting as air-filled blisters leading to a circinate or irregular annular pattern of scaling.⁸ In our study, 12 such cases (6%) were observed (Figure 7). Highest incidence was seen in the age group of 5-25 years. Ten cases (83.3%) showed only palmar involvement and 2 cases (16.7%) with both palm and sole involvement, associated hyperhidrosis in 58.3%.



Figure 7: Keratolysis exfoliativa.

Drug reactions are unwanted reactions that occur following the administration of drugs and are not characteristic of the desired pharmacodynamics effects of the drug.⁹ Cutaneous adverse drug reactions (CADRs) are common, comprising 10%–30% of all reported adverse drug reactions (ADRs) and its incidence in hospitalized patients is 2–3%.¹⁰ In our study, 11 cases (5.5%) of CADR were seen. 4 cases (2%) each of Steven Johnson syndrome (SJS) and erythema multiforme (EM) followed by 2 cases (1%) of toxic epidermal necrolysis (TEN) and 1 case (0.5%) of fixed drug eruption (FDE) were present. Commonly implicated drugs in the study were cephalosporins (36.3%), ofloxacin-ornidazole combination (27.2%), non-steroidal anti-inflammatory

drugs (NSAIDs) (18.1%), rifabutin (9%), and sulfasalazine (9%). Both palms and soles were involved in 72.7% cases of ADR and 82% had involvement of other body areas.

We had 11 patients (5.5%) of HFMD with palmoplantar involvement in the form of vesicles with fever, sore throat, and ulcers in the mouth. Higher incidence was seen in age group of 0-4 years (81.8%). All of them presented with involvement of both palms and soles, and 72.7% had oral ulcers, which is comparable to the studies conducted by Hongal et al and Kar et al.^{4,11}

Limitations

Study with larger population is necessary to understand the epidemiology of palmoplantar dermatoses. Skin biopsy needs to be done and subjected to histopathological examination with special stains in all cases to support the diagnosis.

CONCLUSION

Palmoplantar dermatoses include specific skin diseases affecting palms and soles and are frequently encountered dermatoses in the dermatology practice. The most common palmoplantar dermatosis in the study was eczema, followed by psoriasis and tinea infection. Majority of patients were in the age group of 26-45 years, with almost equal gender distribution. Itching was the most common presenting complaint with hyperkeratosis as the most common feature noted on palms and soles. Diagnosis of palmoplantar dermatoses is important at the earliest for appropriate management which helps in improving the patient's quality of life.

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Conflict of interest: None declared

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

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