

Original Research Article

Clinical aspects of palmoplantar dermatoses in patients attending tertiary health care centre

Yashodha Hassan Vasanthkumar*, Mangala Hedne Chandrasekhar,
Shamnur Basavrajappa Murugesh

Department of Dermatology, J.J.M. Medical College, Davangere, Karnataka, India

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***Correspondence:**

Dr. Yashodha H. V.,

E-mail: ysoda92@gmail.com

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ABSTRACT

Background: Dermatoses affecting palms and soles are among the most difficult of all dermatological therapeutic problems. Apart from diagnostic difficulties, few palmoplantar dermatoses cause great discomfort and disability and may also affect a person's livelihood. To evaluate demographic aspects like age and gender wise distribution and clinical profile of patients suffering from palmoplantar dermatoses.

Methods: This cross-sectional study was conducted between August 2018 to July 2019 in the Department of Dermatology, venereology and leprosy in tertiary care centre. Total 200 cases attending the department of dermatology primarily with complaints pertaining to palms and soles with or without body part involvement in patients of age group between 5-70 yrs. and both sexes were enrolled in the study. Investigations such as direct microscopic examination of scrapings, wet mount with potassium hydroxide, Wood's lamp examination, patch testing and sample for biopsy was taken. After taking consent a detailed history and clinical examination pertaining to the aim of the study was recorded and analysed.

Results: A total of 200 patients were enrolled, among which 63% were males and 37% were females showing male predominance. The most common age group affected was 21-40 years. The most common chief complaint was itching (41.5%). Palmoplantar psoriasis was the most common dermatosis with 23.5% cases.

Conclusions: Palmoplantar dermatoses are frequently encountered in the dermatologic field. Early recognition of clinical symptoms and signs aids in diagnostic investigations and helps in appropriate and effective management of illness to improve the quality of life.

Keywords: Palmoplantar dermatoses, Clinical profile, Palm, Sole

INTRODUCTION

Diseases of skin is common, sometimes chronic, disfiguring, inflammatory and proliferative condition of skin in which genetic, environmental influences, level of literacy, social backwardness, varied climate, industrialization, access to primary health care, and different religious, ritual and cultural factors play a critical role and also the pattern of skin diseases in India

are influenced by the developing economy.^{1,2} Skin changes are affected with aging due to passage of time and photo-aging due to exposure to the sun, with signs of xerosis, fine wrinkling, thinning of skin, loss of elasticity, seborrhoeic keratosis, coarse deep wrinkling, skin tag, etc.^{2,3}

Dermatosis is defined as a disorder involving lesions or eruptions of the skin that are acute (lasting days to weeks)

or chronic (lasting months to years).⁴ There is a wide variation in the presentation of dermatoses in various studies. Acute lesions are relatively common and exhibit a wide range of clinical conditions.⁵ Usually, these conditions are triggered by local or systemic immunologic factors (e.g., allergic reaction); however, the exact etiology remains unclear.⁶ Palmoplantar dermatoses include specific skin diseases affecting palms and soles and are frequently encountered dermatoses in the dermatology practice.⁷ Palms and soles have a non-hairy skin which is marked by series of ridges and grooves with a configuration unique to each individual known as dermatoglyphics. Some palmoplantar dermatoses are specific to palms and soles only while some have tendency to involve other body parts also.⁸ Palmoplantar dermatoses often pose challenges in diagnosis because of alteration of classic skin lesions. In persons whose livelihood depends upon occupation which involves manual work and walking, this group of diseases may be occupationally disabling. The most common palmoplantar dermatoses include plantar psoriasis, eczema, palmoplantar keratoderma, infections, corn and callosity hyperhidrosis, keratolysis exfoliative, contact dermatitis etc... Many previous studies have focused on the specific diseases of palmoplantar dermatoses. Many skin diseases are treatable but apart from diagnostic difficulties few palmoplantar dermatoses also limit our day today activities and thereby have a significant impact on the quality of life.⁹ Knowledge of these epidemiological data is important in planning therapeutic and preventive strategies in healthcare services.

With these viewpoints, the present study was planned to evaluate clinical profile of patients suffering from palmoplantar dermatoses at a tertiary care centre and to have an insight into the frequency, the types of skin disorders, the scope and referral pattern of outpatient dermatology consultations that appear in a tertiary care hospital to determine the burden of these diseases.

METHODS

The present study was a cross sectional study conducted between August 2018 to July 2019 in the department of dermatology, venereology and leprosy, J.J.M medical college, Davangere, Karnataka. A total of 200 cases attending the department where patients with dermatoses involving palms and soles with or without other body part involvement were included and were enrolled during the one-year period.

Patients of age group between 5-70 years. and both sexes were included after informed written consent. The exclusion criteria in which patients who have already been receiving treatment, patients with sexually transmitted infections/Hansen’s disease with palmoplantar lesions and patients who did not give written consent for study participation were excluded. A

detailed history was taken, and thorough clinical examination was done.

Direct examination of scrapings wet mounted with 10% potassium hydroxide, patch testing using Indian Standard series was done for those eczema and Wood’s lamp examination was carried out.¹⁰ Wherever, diagnosis was not arrived, differential diagnosis was considered and a sample for biopsy was taken i.e., an elliptical bit of tissue including adjoining normal skin was excised and subjected to histopathological examination. A thorough analysis was done with all the available clinical data and recorded. Statistical analysis was performed with the SPSS (statistical package for social sciences) version 16. [IBM SPASS statistics (IBM corp. Armonk, NY, USA released 2011)].

RESULTS

Among 200 cases in the study, 126 (63%) were males and rest 74 (37%) were female (Figure 1). Male to female ratio was 1:0.6 showing male preponderance of disease. Maximum age incidence was in the age group of 21-40 years while a least incidence was in age group of 61-70 years. (Figure 2). Considering the occupation of the patients, a maximum incidence was noted in agriculturists (33%) shown in (Table 1).

Table 1: Occupation wise distribution of palmoplantar dermatoses.

Occupation	Number	Percentage
Agriculturist	67	33.5
Housewife	53	26.5
Labourers	42	21
Students	23	11.5
Business persons	10	5
Unemployed	5	2.5

Table 2: Distribution of palmoplantar dermatoses patients according to presenting complaints/clinical profile.

Complaints	Number	Percentage
Pruritis	83	41.5
Scaling	37	18.5
Erythema	35	17.5
Pain	28	14
Burning sensation	17	8.5

In our study, majority of the patients 83 (41.5%) presenting complaint of pruritis, followed by scaling in 37 (18.5%). Thirty-five (17.5%) patients had complained of erythema, 28 (14%) patients had pain and 17 (8.5%) patients had burning sensation. Distribution of palmoplantar dermatoses patients according to the presenting complaints is shown in (Table 2).

Out of 200 patients studied, maximum incidence was seen in palmoplantar psoriasis (23.5%), followed by palmoplantar keratoderma (12.5%), moniliasis (11.5%), dyshidrotic eczema (8.5%), hyperkeratotic eczema (7.5%), keratolysis exfoliative (7%), contact dermatitis (5%), hand-foot-and-mouth disease (HFMD) (6%), palmoplantar hyperhidrosis (4.5%), verruca vulgaris (4%), callus (3.5%), dermatophytosis (2%), hereditary palmoplantar keratoderma (PPK) (2%), pitted keratolysis (2%), vitiligo (0.5%) and erythema multiforme (EM) (0.5%) shown in (Table 3 and Figure 3).

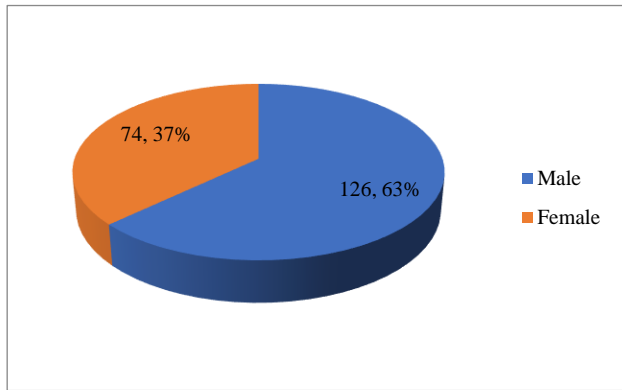


Figure 1: Sex incidence.

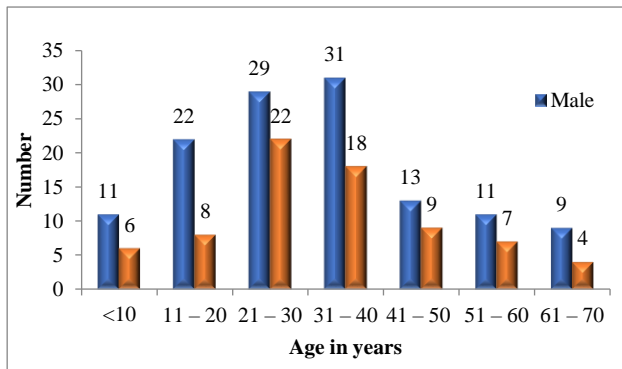


Figure 2: Age and sex distribution of palmoplantar dermatoses.

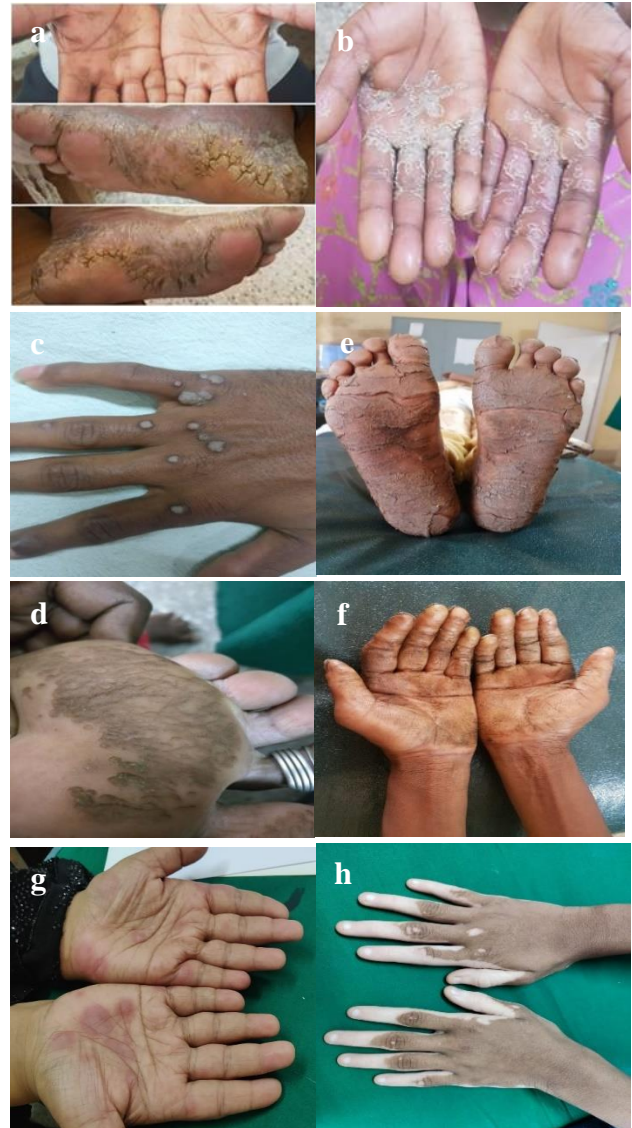


Figure 3: Distribution of palmoplantar dermatoses, (a) palmoplantar psoriasis, (b) moniliasis, (c) verruca vulgaris, (d) pitted keratolysis, (e, f) hereditary PPK, (g) erythema multiforme and (h) acral vitiligo.

Table 3: Distribution of palmoplantar dermatoses.

Diagnosis	Total		Males		Females	
	No	%	No	%	No	%
Palmoplantar psoriasis	47	23.5	32	25.3	15	20.22
Palmoplantar keratoderma	25	12.5	17	13.49	8	10.8
Moniliasis	23	11.5	11	5.5	12	16.2
Dyshidrotic eczema	17	8.5	12	6	5	2.5
Hyperkeratotic eczema	15	7.5	7	5.5	8	10.8
Keratolysis exfoliative	14	7	8	4	6	8
Contact dermatitis	10	5	7	3.5	3	4.05
HFMD	12	6	9	7.14	3	4.05
Palmoplantar hyperhidrosis	9	4.5	4	3.17	5	6.75
Verruca vulgaris	8	4	6	4.76	2	2.7
Callus	7	3.5	5	2.5	2	2.7

Continued.

Diagnosis	Total		Males		Females	
	No	%	No	%	No	%
Dermatophytosis	4	2	3	1.5	1	1.35
Hereditary PPK	4	2	3	1.5	1	1.35
Pitted keratolysis	3	1.5	1	0.79	2	2.7
Vitiligo	1	0.5	-	-	1	1.35
EM	1	0.5	1	0.79	-	-
Total	200	100	126	63	74	37

DISCUSSION

In the present study, the gender wise distribution pattern of patients showed 63% males and 37% females with male to female ratio of 1:0.6; which is similar to the study done by Kang et al where there was male preponderance with female to male ratio of 1:1.01.¹¹ Male preponderance of palmoplantar dermatoses could be because of occupation and activities related to exposure of various environmental pollutants, occupation related chemicals, mechanical/physical injuries, contact allergens and irritants and also this to the Indian custom of walking barefoot or wearing open slippers.

In the present study, most of the patients belonged to the age group of 21-40 years and while in the study by Kang et al, maximum incidence was seen in two age groups 40-49 years and 50-59 and in contrast to the study by Khandpur et al, where majority of patients of cases were in age group of 21-50 years (66.8%).^{11,12} These findings were comparable to the study conducted by Agarwal et al where psoriasis of palms and soles, hyperkeratotic eczema and tinea pedis and manuum, all seemed to be more prevalent in middle aged adults.¹³ In our study, 17 cases (8.5%) of palmoplantar dermatoses were observed, belonged to age group of less than 10 years, suggesting onset of illness during childhood.¹⁴

In the present study, among the occupational group, agriculturists constituted the majority (33.5%) followed by housewives (26.5%), labourers (21%), students (11.5%), business persons (5%), elderly retired personnel (5.3%), professional workers (5%), business personnel (3%) and unemployed (2.5%). This reflects the functional importance of the palms and soles in one's occupation. In addition to the physiological functions of temperature regulation and tactile sensation, palms and soles have wide variety of functions which include grasping, manipulating, precise movements (palms) and locomotion (soles). When dermatosis affects palms and soles, it impairs the activity of individual especially manual labourers.

In the present study, the palmoplantar dermatosis with maximum incidence involving was palmoplantar psoriasis (23.5%), while in the study by Kang et al, it was pompholyx (22.4%).¹¹ The palmoplantar ketoderma incidence was 12.5% while in the study by Kang et al it was verruca (17.9%).¹¹ The moniliasis was 11.5%, dyshidrotic eczema was 8.5%, hyperkeratotic eczema was

7.5%, keratolysis exfoliative was 7%, contact dermatitis was 5%, HFMD was 6%, palmoplantar hyperhidrosis was 4.5%, verruca vulgaris was 4%, callus was 3.5%, dermatophytosis was 2%, hereditary PPK was 2%, pitted keratolysis was 1.5%, vitiligo was 0.5% and erythema multiforme was 0.5%. While in case of Hongal et al study reported, the moniliasis was 19%, hyperkeratotic eczema was 4%, keratolysis exfoliative was 6%, contact allergic dermatitis was 4.3, contact irritant dermatitis was 2.7%, HFMD was 0.7%, palmoplantar hyperhidrosis was 7%, hereditary PPK was 4.3%, pitted keratolysis was 6%, and erythema multiforme was 1.7%.⁷ Dermatitis with maximum incidence involving both palms and soles was palmoplantar psoriasis (41.4%), while in the study by Hongal et al it was 20.7%.¹⁵

In our study, majority of the patients (i.e. 41.5%) had presented with complaint of pruritis, followed by 18.5% of patients had complaint of scaling, 17.5% patients had erythema, 14% patients had pain and 8.5% patients had complaint burning sensation. There were few other studies in which itching was found to be the predominant symptom in palmoplantar dermatoses.^{13,16} In our study, palmoplantar psoriasis was the most common dermatoses found in 47 (23.5%) cases followed by palmoplantar keratoderma in 25 (12.5%), while in a study conducted by Nair et al, they found 28.22% cases with palmoplantar psoriasis and 26.72% cases with keratinizing disorders.⁸ In another similar type of study conducted by Hongal et al, they found the most common five diseases in their study were palmoplantar psoriasis (20.7%), moniliasis (19%), palmoplantar hyperhidrosis (7%), keratolysis exfoliative (6%) and pitted keratolysis (6%).¹⁵

In the present study, out of 200 patients studied, maximum incidences were seen in palmoplantar psoriasis (23.5%). Further investigation with a wider and 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 accurate diagnosis and specific treatment could be achieved.

CONCLUSION

In conclusion, study, on palmoplantar dermatoses is a worthy subject for study as palmoplantar dermatoses have a protean manifestation. The subject is complex, as the term palmoplantar includes heterogenous group of disorders; but no classification exists and the opinions

vary regarding the conditions to be included under palmoplantar dermatoses. In our study, a male preponderance was seen, which reflects the higher chances of men contracting disease at work. A peak incidence of palmoplantar dermatoses was observed in 21-40 years age group that can be attributed to more risks/trauma/contact during working or walking (barefooted) in this age group. This study gives an insight regarding various aspects of clinical profile of palmoplantar dermatoses. Its early recognition of clinical symptoms and signs to recognize the clinical features of dermatoses affecting palms and soles, as the clue that clinches the diagnosis lies in the clinical signs. It's also very important to plan further supportive diagnostic investigations as well as appropriate and effective management to further improve outcome of illness and the 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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