Assessment of clinical manifestations related to palmoplantar keratoderma and its impact on quality of life of cases

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Abstract

Introduction: Palmoplantar keratodermas (PPKs) is heterogeneous entity of cutaneous disorders, with hyperkeratinisation of stratum corneum over palm and soles. PPKs can be hereditary or acquired. Acquired PPK occurs in later years due to continuous or constant exposure to allergens, irritants and exposure to trauma.

Aim: This study undertaken to assess the clinical manifestations related to Palmoplantar keratoderma cases and its impact on quality of life of cases.

Materials and Methods: A total of 106 patients with chief complaints of Palmoplantar keratoderma attending outpatient department of DVL were included. Detailed clinical history regarding diseases status was collected. The Patients feedback was taken as impact scores i.e. 3 (Very good), 2 (Good), 1 (Moderate), 0 (Poor). QOL was measured by grading system based on the patient's feedback.

Results: Majority cases were between 2nd to 4th decades (65%). Housewives (30.1%) and daily wage labourers (24.5%) were more commonly affected by acquired PPK. Psoriasis (52.8%) followed by Eczema (15.09%), Pityriasis rubra pilaris (8.4%) and Erythroderma dermatitis (5.6%) are common symptoms associated with PPK. There is a notable impact of PPK on quality of life of patients in 57.4% cases.

Conclusion: Acquired PPK is always misdiagnosed because it is nonhereditary. House wives and daily wage workers are commonly affected due to constant exposure to detergents, chemicals and various forms of trauma. Palmoplantar keratodermas has remarkable impact on quality of life of patients.

Keywords: Palmoplantar keratoderma (PPK), Psoriasis, Occupation, Prevalence, Quality of life (QOL).

Introduction

Palmoplantar keratoderma (PPK) is a disorder of keratinization, characterized by a diffuse or focal thickening of the stratum corneum over palmoplantar region.[1] Diffuse, focal and punctuate are type of PPKs, division is based on mode of inheritance, morphology, comorbidities with other symptoms, erythematous borders, hyperhidrosis and area of epidermal involvement over palm and soles.[2] Keratodermas can be both acquired and hereditary.

Acquired PPK is nonhereditary and non-frictional hyperkeratosis which occur later in life, with a possible etiology like infections, reactive and inflammatory dermatoses, and other systemic complications.[3] It appears over palms and soles involving more than 50% of the acral areas. Acquired PPK occurs due to multiple causes i.e. psoriasis, human papillomavirus, eczema, paraneoplastic keratoderma, calluses, dermatophytosis etc.[4]

With the wide etiologic factors involvement and minimal availability of clinical and epidemiologic literature, the present study designed to assess the clinical manifestations of related to Palmoplantar keratoderma and its impact on quality of life of cases.

Materials and Methods

The present descriptive study was conducted in Department of DVL, MNR Medical College and Hospital, Sangareddy during April 2016 to March 2018. A total 106 cases attending outpatient department of DVL with chief complaints of Palmoplantar keratoderma were recruited for the study. Informed consent was obtained from all the patients and study protocol was approved by institutional ethics committee. Patients of both sexes with chief complaints of Palmoplantar keratoderma (acquired & inherited), cases between 1-50 years of age and with positive family history were included in the study. Patients who were not willing to participate, with >50 years age and other dermatological disorders were excluded from the study.

A detailed clinical history of the patients was collected i.e. Disease progression, Palm and sole involvement, keratotic surface discoloration, recurrent skin infections, scaling of skin, feature of scales, fissures and its bleeding from keratotic surface, burning sensation, other issues of pigmentation, photosensitivity and pain. Past treatment profile and history of palmoplantar keratoderma was noted.

Quality of life (QOL), of cases were assessed by a score based patients enquiry on pain, itchiness of skin, difficulties at working places, during sports, during social activities, during interaction with friends and relatives, sexual difficulties with partner and related to treatment methods treatment. The Patients feedback was taken as impact scores i.e. 3 (Very good), 2 (Good), 1 (Moderate), 0 (Poor). QOL was measured by grading system based on the patient's feedback. Data was extracted and

analysed to calculate the percentages by using Microsoft excel sheet.

Results

A total 106 cases with palmoplantar keratoderma were considered between age group 1st to 7th decades (Fig. 1). Among 7800 cases attended outpatient wing of Department of DVL, MNR Medical College and Hospital during study period, 106 patients (0.013%) were diagnosed with acquired palmoplantar keratoderma and recruited for the study. Among the participants majority were in between age group 2nd to 6th decade (Fig. 1).

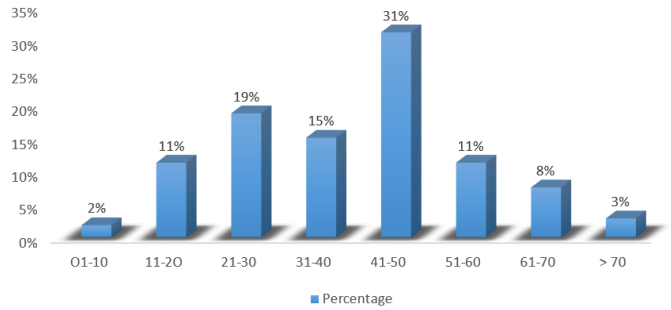

Fig. 1: Age wise distribution of cases

Table 1: Distribution of acquired cases based on occupation.

Occupation	Acquired PPK	
	Number	Percentage
Unemployed	10	9.4%
Daily wage Labourer	26	24.5%
Student	12	11.3%
Housewives	32	30.1%
Garage workers	12	11.3%
Fisherman	09	8.4%
Office work/printing press	05	4.7%

Housewives (30.1%) and daily wage labourers (24.5%) contributed more in acquired PPK, followed by Students (11.3%), garage workers (11.3%), Unemployed (9.4%), fisherman (8.4%) and office workers (4.7%) (Table 1). Focal type (54.7%) is most common clinical pattern type in acquired PPK patients followed by diffuse type (45.2%) (Table 2).

Table 2: Clinical pattern in acquired PPK

	Gender	Number	Percentage
Diffuse (n=48)	Male	20	18.8%
	Female	28	26.4%
Focal (n=58)	Male	38	35.8%
	Female	20	18.8%
Punctate (n=0)	Male	-	-
	Female	-	-

Table 3: Etiological characteristics of acquired PPK

Disease	Total no cases	Percentage
Eczema	16	15.09%
Pitted keratolysis	04	3.7%
Psoriasis	56	52.8%
Lichen planus	03	2.8%
Pityriasis rubra pilaris	09	8.4%
Erythroderma dermatitis	06	5.6%
Atopic dermatitis	03	2.8%
Crusted scabies	05	4.7%
Mycosis fungoides	02	1.9%
Reiters syndrome	02	1.9%

Psoriasis (52.8%) is the commonest clinical manifestation associated with PPK followed by eczema (15.09%) (Table 3). A total 67.9% cases had extreme and remarkable effect on the life due to PPK.

Table 4: Assessment of quality of life by grading system in acquired PPK patients

Effect on life	Total no of cases	
	Number	Percentage
No change	02	1.8%
Mild change	08	7.5%
Moderate change	24	22.6%
Remarkable change	58	54.7%
Extreme change	14	13.2%

Discussion

Palmoplantar keratodermas (PPK) is a thickening of skin of the palm and sole due to hyperkeratosis.[5,6] PPK is referred as heterogeneous group of disorders and is divided as acquired or hereditary.[7,8] Clinically, acquired PPK have various epidermal pattern of involvement, diffuse, focal and punctuate types. Diffuse PPK refers to uniform involvement of palmoplantar surface, focal PPK refers over pressure points which may be striate or oval and punctuate PPK having multiple scattered, round lesions of tiny keratotic papules on palm and sole.[8,9] This study was designed to assess the clinical profile, its associated symptoms in patients with palmoplantar keratodermas.

Several studies noted that the cases between the ages 17-40 years (42.7%) (10), 40-59 years (36.2%)[11] and 41-50 years (26%),[12] 21-30 years[13] were prone to PPK. In this study majority cases were between 21-50 years (65%) which is correlating with the above studies and age of onset was noted during second decade.

PPK was most common in housewives (30.2%), labourers (26.2%) and students (25.2%) due to their high exposure to chemicals, friction, detergents and water while their daily activities.[10] Kodali et al., stated that farmers (53%) and housewives (20%) were commonly affected,[12] Chopra et al., stated that housewives (18.69%) and manual workers (48.16%) are commonly affected, with PPK.[14] Study by Mahajan et al., reported that manual labourer (48.16%), students (33.1%) and housewives (18.69%) affected by PPK.[15] Another study by Murthy SC et al., reported that farmers and manual labourers are commonly affected by PPK.[16] In present study, housewives (30.1%) affected more common, followed by daily wage labourers (24.5%), garage workers (11.3%) and students (11.3%).

In present study psoriasis (52.8%) is the most common symptom associated with PPK which is correlating with the findings of Chopra et al., and Murthy SC et al.[14,16] In this study PPK is also associated with Eczema in 15.09% cases, with Pityriasis rubra pilaris in 8.4% cases, with Erythroderma dermatitis in 5.6%, with Pitted keratolysis in 3.7% cases. In this study impact of PPK on quality of life of patients was extreme and remarkable in 67.9% cases and is moderate on 22.6% cases (Table 4).

Conclusion

Acquired PPK is a nonhereditary and non-frictional hyperkeratosis of palms and soles which inculpate half of the acral area and more. The results concluded that majority cases with acquired PPK were housewives and daily wage labourers. Psoriasis followed by Eczema, Pityriasis rubra pilaris and Erythroderma dermatitis are common symptoms associated with PPK. Observed notable impact of PPK on quality of life of patients in 57.4% cases. Clinical evaluation of acquired PPK is always need attention of clinician to find out the exact cause. This study focused on clinical profile of acquired PPK, but detailed evaluation is required on all subtypes of PPKs with more sample size.

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