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Dermal co-morbidity profile in clinically diagnosed polymorphous light eruption: A clinical study of 100 cases

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Abstract

Background: Polymorphous light eruption (PMLE) is an acquired disease and is the most common of the idiopathic photodermatoses. In dermatology, a number of other conditions as a response to sunlight exposure have also been reported, however, there is no study detailing the dermatological co-morbidity profile of clinically diagnosed PMLE cases.

Aims and Objective: To study dermal co-morbidity profile of PMLE cases.

Materials and Methods: Hundred PMLE patients were studied at Department of Dermatology, Venereology & Leprosy, Era's Lucknow Medical College and Hospital, Lucknow during a period of one year for demographic, clinical and histopathological findings.

Results: Maximum patients had age <30 years (54%) with female preponderance (58%). Maximum patients had an acute onset (61%) mainly in summer season (78%). A total of 77 patients had dermal co-morbidities. Melasma was the most common co-morbidity (23%). Histopathology was performed in 89 cases and confirmed PMLE in only 56.92% cases. Presence of dermal co-morbidities in a large number of cases (77%) and lack of confirmed diagnosis in almost half the cases stress on the need to adopt a comprehensive clinical and histopathological evaluation approach.

Conclusion: PMLE was characterized by a higher prevalence of other dermal conditions, thus indicating the vulnerability of these patients to other skin disorders.

Keywords: Polymorphic light eruption (PMLE), dermal comorbidities, light exposure

Introduction

Polymorphous light eruption (PMLE) is an acquired disease and is the most common of the idiopathic photodermatoses [1]. It is primarily characterized by recurrent, abnormal, delayed reactions to sunlight with a varied morphology of papules, plaques and vesicles on the exposed areas of the skin. Its prevalence is reported to vary from 5 to 20% in different populations [2-4]. PMLE has a substantial psychosocial impact on the patients quality of life.

The skin is protected by utilization of three systems, viz., the stratum corneum barrier, immunity and pigmentation to provide protection from harmful radiation that includes sun exposure, mainly against the ultraviolet (UV) light spectrum, which is held responsible for visible extrinsic skin aging as well as cause of a number of skin disorders including skin cancer [5]. Incidentally, apart from PMLE, a number of other skin disorders, viz. melisma [6-8], exogenous ochronosis [9], pigmentary demarcation lines [10], freckles [11], contact dermatitis [12], etc. Owing to this common etiology, it can be assumed that PMLE might have other coexistent skin disorders.

Owing to a substantial role in determining the self-esteem and quality of life of patients, it is essential that the PMLE must be treated at the earliest, however, co-existence of other skin disorders might confound and affect the clinical diagnosis and will in turn affect the treatment and management. Unfortunately, presence of dermal co-morbidities in PMLE cases has not been extensively reported.

Materials and Methods

Present cross-sectional study was performed on 100 patients of photodermatoses (PMLE) at Department of Dermatology, Venereology & Leprosy, Era's Lucknow Medical College and Hospital, Lucknow during a period of one year.

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Patients having immunocompromised status, malignancy, Drug and Chemical induced photosensitivity and those having dermatoses exacerbated by UVR were excluded from the assessment.

The study was approved by Institutional Ethical Committee. Informed consent was taken from all the patients. A detailed history was taken with reference to the past history of similar episodes, family history of any similar illness, mode of onset, progression of the disease, seasonal variation and the extent of the involvement.

A detailed general examination was carried out in all cases with particular reference to find out the distribution of skin lesions, type of skin lesions, any secondary changes. Local examination was carried out methodically in every patient to find out the morphological features of every skin lesion. All systems were carefully examined to find out any associated abnormalities in other systems.

All the cases were investigated for skin biopsy, complete Blood Count and urine for albumin, sugar and microscopy. Digital Photographs were taken, after taking informed written consent. The identity of the patient was kept confidential.

All the data analysis was performed using IBM SPSS ver. 20 software. Quantitative data was expressed as mean ± standard deviation (SD) whereas categorical data was expressed as percentage. Cross tabulation and frequency distribution was used to prepare the table and Microsoft excel 2010 was used to prepare the required graph. Level of significance was assessed at 5% level.

Results

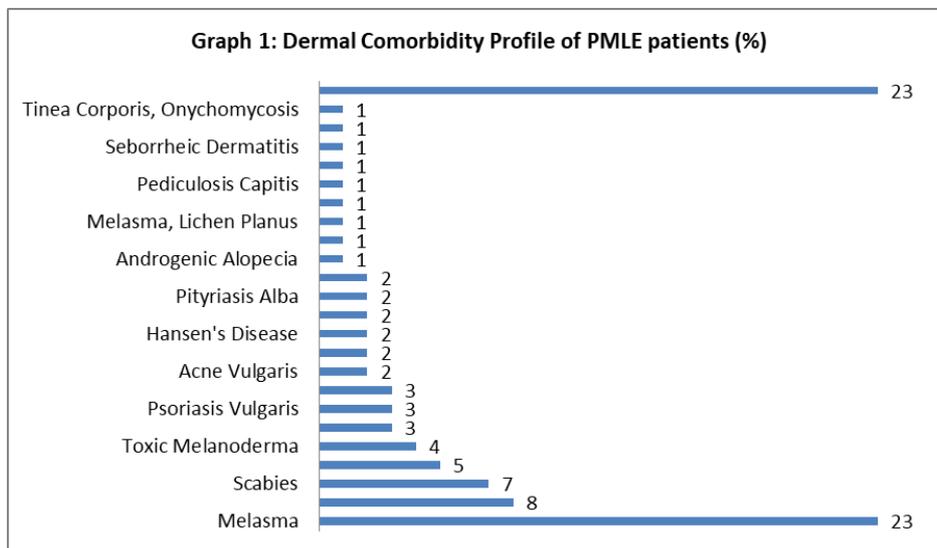
Majority of patients were aged <30 years (54%), were females (58%), mainly students (32%) and housewives

(28%). Mean BMI of patients was 21.43±3.78 kg/m². Only 11% had family history of PMLE. A total of 5% had drug allergy. History of tobacco, alcohol and/or smoking was reported by 20% patients. Majority were affected in summer (76%), however, a total of 24% were affected in winter. Maximum had <6 months' history of current illness. Burning sensation (34%), itching (34%) or both itching and burning sensation together (28%) were the presenting complaints. Majority had acute onset (61%). A total of 57 (57%) had treatment history for PMLE.

Table 1: Physical examination of PMLE patients

Physical examination		Percentage
Oral Cavity	Carries	6
	Normal	63
	Staining	32
Pallor		6
Pedal edema		11
Type of lesions	Eczematous	8
	Papular	64
	Plaque	28
Number	Multiple	85
	Single	15
Shape	Irregular	53
	Regular	47
Surface	Rough	55
	Shiny	7
	Smooth	38
Poorly defined margins		22
Distribution	Neck and Forearm	45
	Face and Neck and Forearm	25

Data is expressed as percentage



Histopathological evaluation could be done in 88% cases. It was confirmed as PMLE in 54 (56.92%) cases, in 23 (27.54%) it was confirmed as chronic non-specific dermatitis and in 11 (15.54%), it was confirmed as mild chronic dermatitis.

Discussion

Polymorphous light eruption (PMLE) is primarily characterized by cardinal symptom of severe pruritic skin lesions. Macular, papular, papulovesicular, urticarial, multiforme and plaque-like variants are differentiated

morphologically, hence the name polymorphous [13]. It usually affects the upper chest, upper arms, backs of the hands, thighs, and the sides of the face. The skin lesions resolve spontaneously within several days of stopping sun exposure and to accelerate this external application of glucocorticoids is recommended [14]. However, there are other skin conditions too that generally have sun exposure as the principle etiology and hence their coexistence or overlapping role in PMLE cases cannot be ruled out.

The present study showed presence of other skin disorders in a high proportion of PMLE patients (77%). As the

etiology of PMLE primarily includes sun exposure, which is also a triggering factor for spectrum of skin disorders including skin cancer^[15-17]. Most of these coexisting problems are hyperpigmentation disorders with sun exposure being the common etiological or aggravating risk factor^[18, 19].

In present study, melasma was the most common coexisting skin condition. There was predominance of women in reproductive age group (<30 years), hence the coexistence of melasma cannot be ruled out. Histologically, apart from epidermal pigmentation melasma is characterized by extracellular matrix abnormality, especially solar elastosis and disrupted basement membrane. In the dermis, an increase in vascularity and an increase in the number of mast cells has also been reported^[20].

The other common coexistent skin disorders included freckles, scabies and irritant contact dermatitis which together affected 20% of the patients. Although, for freckles and irritant contact dermatitis, sun exposure has been reported as a possible etiology^[11, 12] however for scabies no such etiology has been reported. In present study, lentigines, psoriasis vulgaris and seborrheic keratosis accounted for 9% of total cases (3% each). Solar lentigines are a less common yet sun-exposure related skin disorder. It generally occurs on the sun-exposed areas of the body. The backs of hands and face are common areas. Lentigines are benign in nature and generally do not require treatment other than for cosmetic purposes.

In present study, histopathological confirmation of PMLE could be done in 59.92% of cases, indicating the need to carry out a proper differential diagnosis in these patients, particularly in skin disorders which has clinical presentation similar to PMLE. The presence of other skin conditions indicates the need for effective plan of management. It must be borne in mind that most of the patients with PMLE seek treatment for quality of life related concerns and hence a holistic approach for diagnosis and treatment is recommended.

The present study was an attempt to explore the coexisting skin disorders in PMLE patients and provided some useful information. In light of the information provided by this preliminary work, further studies on this aspects are required.

Conclusion

The findings of the study showed PMLE was characterized by a high rate of other dermal conditions, thus indicating the vulnerability of these patients to other skin disorders. Presence of coexisting dermal conditions indicated the need to carry out a holistic and exhaustive differential diagnosis and a comprehensive treatment and management strategy to derive full patient satisfaction.

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