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Original Research Article

Lichen planus and its clinical variants: a retrospective study in a tertiary care centre

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ABSTRACT

Background: Lichen planus is a chronic pruritic immune-mediated disorder involving skin, oral and genital mucosa, nail and hair with several morphological variants. Although not lethal, the chronic nature of the disease have significant impact on patient's quality of life and their psychological wellbeing. Aim was to find out clinico-epidemiological profile of LP and its variants including Dermoscopic features and its association with systemic diseases like Diabetes, Hypertension and Hypothyroidism.
Methods: This is a hospital based retrospective observational study. Medical records of all patients with LP during the period from January to December 2022 were noted. Various clinico-epidemiological and dermoscopic features along with systemic disease association were analysed.
Results: A total of 257 cases were reported. Most common age group affected was 41-60 yrs. Male:female ratio was 0.72:1 with female preponderance. LP in children (<18 yrs) was seen in 9.7% of cases. Classical LP was the most common type (29.5%) followed by Mucosal LP (12.45%). More than one variant was seen in 20.6% of cases. LP in association with systemic diseases was seen in 36.1% of cases with DM being the most frequent. Most common dermoscopic features were pigmentation (100%) followed by Wickham's striae (83.6%) and vascular findings (49.4%).
Conclusions: LP is a common papulosquamous disorder affecting middle aged adults with slight female preponderance. Childhood LP contributed to significant number of cases. Classical LP was the commonest clinical variant observed. LP is associated with DM, HTN and hypothyroidism. Dermoscopy is an useful tool in diagnosis and differentiating from other similar conditions.

Keywords: Childhood LP, Wickham's striae, Metabolic complications

INTRODUCTION

Lichen planus (LP) is a common, immune mediated papulosquamous disorder affecting the skin, mucous membranes, hair and nails. It is common in middle aged adults with a prevalence of 1-2% globally, 0.1-1.5% in India with a slight female preponderance.[1] Childhood LP accounts for 11% to 19% of all LP cases in India.[2] It is typically characterized by the presence of pruritic, polygonal, violaceous, flat topped papules favouring the extremities, particularly flexor aspects of the wrists and legs. The clinical-morphological diversity of its variants is all the more surprising where the typical clinical findings of LP can be lost to a large extent. Oral and genital lesions are debilitating, unpleasant, and can have long-term effects. The malignant potential of the oral erosive variety necessitates long-term monitoring.

Lichenplanopilaris leading to scarring alopecia and nail LP resulting in dystrophy and scarring of few or all nails are disfiguring and are of great cosmetic concern. The persistent and frequently erosive nature of LP have a significant impact on patient's quality of life (QOL) and psychological well being.[3] Diabetes mellitus (DM), HTN, Hypothyroidism, and dyslipidemia are a few metabolic conditions that have been associated to the disease.[4] LP may serve as an external indicator of underlying immune and metabolic dysfunction.[5] Dermoscopy helps in differentiating from other mimicking dermatoses, often obviating the need for a skin biopsy. In this retrospective study we made an attempt to read the clinico-epidemiological profile of LP and its systemic associations in our centre.

METHODS

This is a retrospective, observational, clinico-epidemiological study conducted in the outpatient department of dermatology at a tertiary care hospital. A total of 257 patients were included in our study. The medical records of all patients with Lichen planus who attended the OPD during January 2022 to December 2022 were analysed. Patients with lichenoid drug eruption were excluded. The following information including age, sex, clinical variant and any associated conditions like HTN, DM, Hypothyroidism were collected. All the cases were diagnosed based on clinical features and dermoscopic findings and skin biopsy wherever needed.

Sample size and sampling technique

Sample size was calculated using following formula

$$n = 1 + Z^2 \times p(1-p)/e^2N$$

Where Z=Z score, p=Standard deviation, e=margin of error, N=population size. Random sampling technique was used. Statistical data was tabulated in Microsoft office Excel for Windows and test results were calculated using IBM SPSS v21 for Windows.

RESULTS

Age wise distribution

A total of 257 patients were included in the study. The most common age group was 41-60 yrs which contributed to 48.6% of the total cases followed by 18-40 yrs. Childhood LP contributed to 9.7% cases.

Gender wise distribution

There were 108 males (42%) and 149 females (58%) with a male:female ratio of 0.72:1

Among the total cases of LP in all age groups, the most common type noted classical (29.5%) followed by hypertrophic (12.06%). Lichenplanus pigmentosus was seen in 29 cases (11.2%).

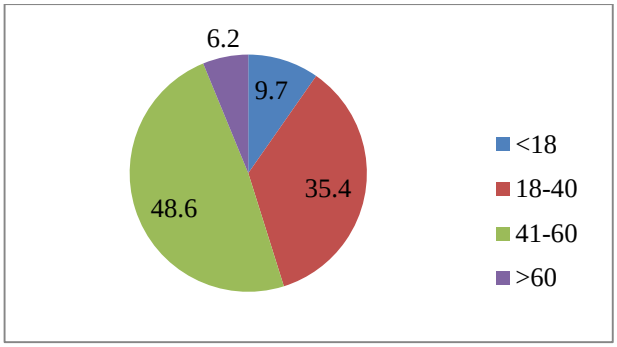

Figure 1: Age-wise distribution.

Linear LP, LP pemphigoides was seen in 3 each cases where as single case of Annular LP, Bullous LP and Atrophic LP were seen. Mucosal involvement as a sole manifestation without skin lesions was seen in 32 pateints (12.45%) among them the most common was oral LP seen in 27 patients (84%) followed by genital LP in 4 patients (12.5%) and a single case (0.3%) of both oral and genital mucosa involvement. There were 3 cases of oral eruptive LP. Hair involvement was seen in 12 cases (4.6%). Nail LP manifesting solely was seen in 5 cases (1.9%) whereas nail changes in classic LP were seen in 5 (9.4%) of cases. More than one variant of LP was seen in 53 patients (20.6%) out of which the common association was classical and oral LP (75.4%).

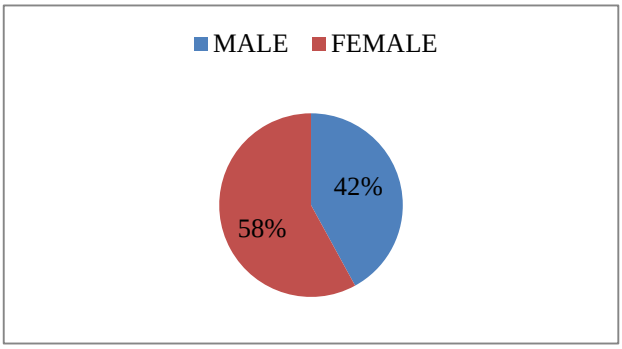

Figure 2: Gender-wise distribution.

Of the total cases of LP, there was association with systemic disease in 93 patients (36.1%) with the most common being DM in 57 (61.2%) followed by HTN in 28 (30.1%), hypothyroidism in 8 (8.8%) of patients. The most common dermoscopic findings seen in Lichen planus were pigmentation (100%), Wickham's Striae (83.6%), vascular findings (49.4%) of cases. Most common pattern of striae Wickham's striae was Reticular followed by Radial streaming, linear, leaf venation and circular patterns. Most common Pigment findings were bluish gray dots/globules and yellow brown dots/globules. Vascular findings observed were red dots and globules, Linear vessels and Mixed type with diffuse, patchy or peripheral arrangement. In Classic LP, reticular

wickham's striae, Greyish blue dots/globules and vasculature as red dots and globules were seen predominantly. In Hypertrophic LP, wickham's striae in peripheral striations, greyish blue dots over brownish black background and mixed pattern vasculature were seen. Other findings noted were comedo like openings, follicular plugging, corn pearls, scaling and milia. In Lichenplanopilaris, targetoid bluish-grey pigmentation around follicles, peripilar scaling and whitish follicular dots were seen. In Lichen planus pigmentosus, blue-grayish and brown-grayish dots/globules arranged in patchy/diffuse patterns were seen. Wickham's striae were absent in Lichen planus pigmentosus and Actinic LP.

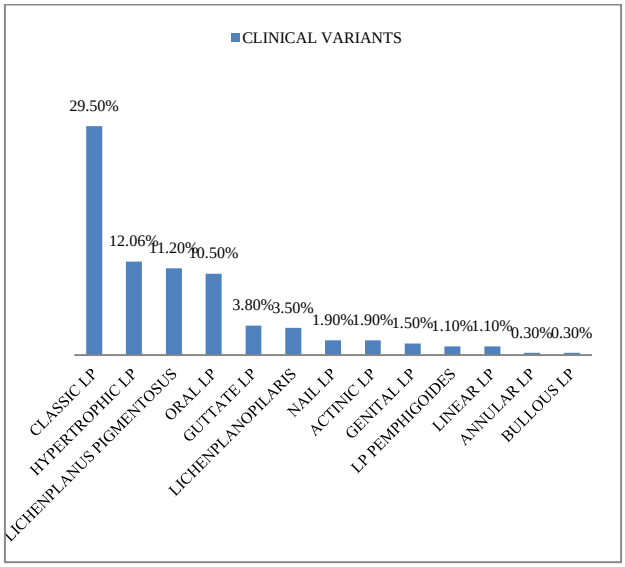

Figure 3: Clinical variants of lichen planus.

DISCUSSION

Lichen Planus is a chronic immune mediated inflammatory disorder occuring in middle aged adults. Uncertainity surrounds the pathogenesis of LP. Favoured is an autoimmune response in which basal keratinocytes are attacked by CD8+ T-lymphocytes resulting in cell death. The most common age group in our study was 41-60 yrs (48.6%) followed by 18-40yrs (35.6%). This is in contrast to other studies, which found that the most prevalent age group was 21-40 years. There were 25 cases of LP in children (under 18 years) which contributed to 9.7% of cases. It is comparable to 10% reported by Sneha et al.[1] Because of the limited documentation on childhood LP in the literature, LP in children was formerly thought to be a rare phenomenon. However, they make up a higher percentage of instances (10%-11%), according to recent studies. Increased incidence in tropics may be attributed to early contact with infectious agents as well as other environmental triggers including trauma.[1] The elderly population were affected rarely, which contributed to only 6.2% of cases in our study above the age of 60 years. In our study, the youngest affected person was 5 years old, and the oldest was 76 years old, which is similar to the study conducted by Gupta et al.[6] Our study's male to female ratio of 0.72:1 is comparable to that of Sharma et al (0.76:1) Parihar et al (0.8:1) which indicates a female preponderance.[4,7]

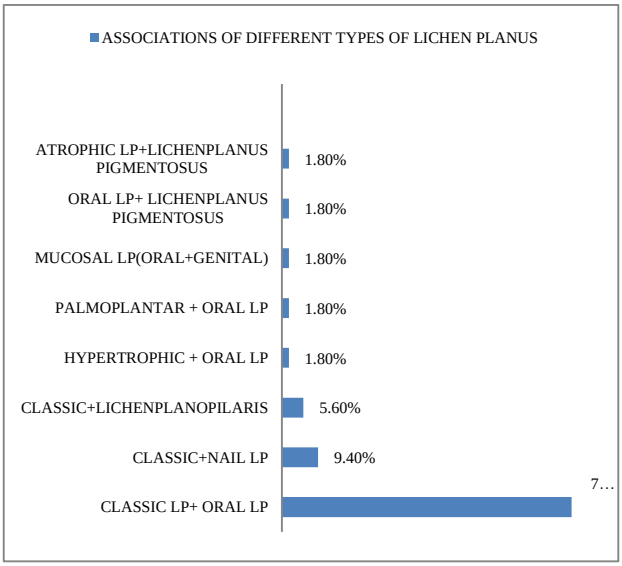

Figure 4: Associations of different types of lichen planus.

The most prevalent clinical variant identified in this study was classical LP, followed by hypertrophic LP, which is consistent with the study by Sneha et al and Gupta et al.[1,6] Bullous and Annular LP, which made up 0.3% of all patients were the less frequent clinical variants. In contrast to Gupta et al (17%) and Sneha et al (16.5%), 32 patients (12.45%) had mucosal involvement as the only symptom without skin lesions in this study.

Figure 5: Linear lichen planus.

The fact that the majority of patients with oral lesions primarily present to other specialities could be responsible for the decreased incidence of oral lichen planus. Three cases of oral erosive LP (11%) were observed, which is similar to the findings of Gupta et al (12%) but lesser than those of Sneha et al (21%), and Bhattacharya et al (19.6%).[1,6,8] Erosive LP is considered

as a pre-malignant condition with a 0.5-2% chance of malignant transition, necessitating long-term supervision. While nail LP is uncommon as the only symptom of the disease, nail involvement was reported in 1% to 10% of patients.

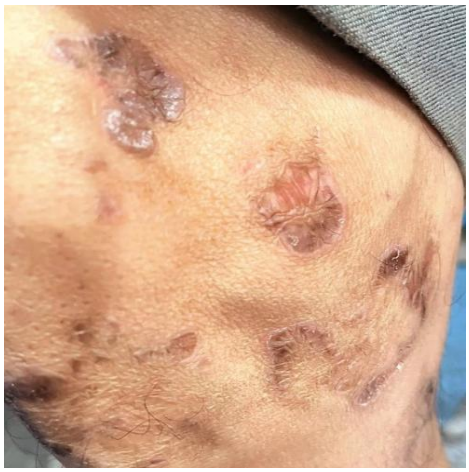

Figure 6: Atrophic lichen planus.

In our study, only five cases (1.9%) of nail LP manifested, compared to five (9.4%) cases of classic LP, which showed nail changes. Two cases with Twenty- Nail dystrophy noted. In our study, LP involving only hair was observed in 12 patients (4.6%), which is comparable to the study of Gupta et al (5%).[6]

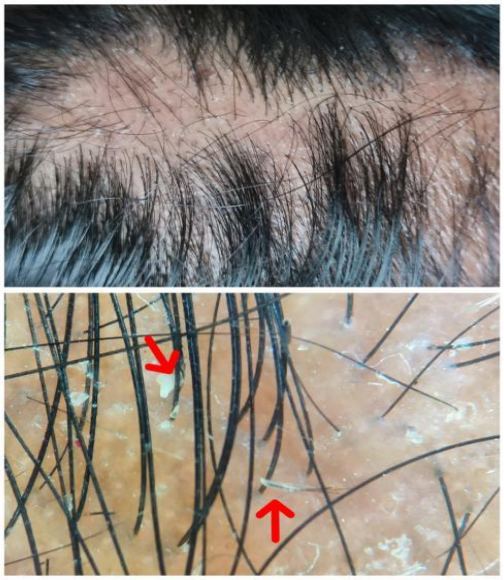

Figure 7: Lichen Planopilaris (Red arrow: Peripilar cast on dermoscopy).

We found three cases of Graham-Little-Piccardi-Lasseur syndrome, which involves the triad of cicatricial alopecia of the scalp, LP of the skin, and non-scarring hair loss of axillary and pubic hairs. When compared to studies by Gupta et al (7.1%) and Bhattacharya et al (3.4%), this study found that 53 patients (20.6%) had more than one variant of LP occurring at the same time.[6,8] Therefore it is not uncommon to have more than one variant of Lichen planus in a person. In our study Wickham's Striae is seen in 83.4% cases as compared to the studies by Lallas et al, Vasquez-Lopez et al (92%).[9,10]

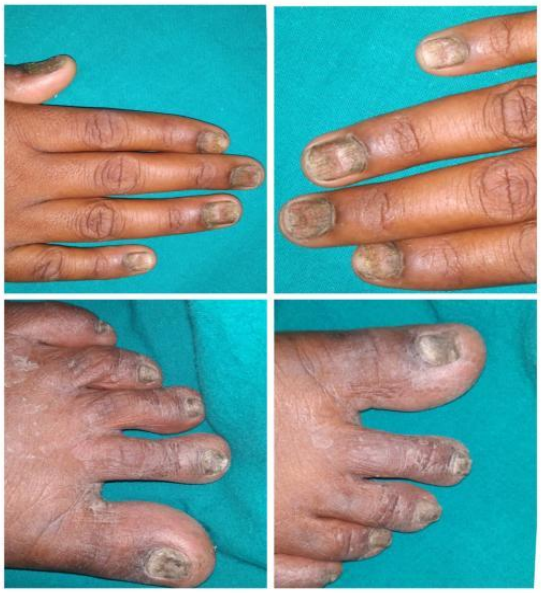

Figure 8: Nail LP (Twenty nail dystrophy).

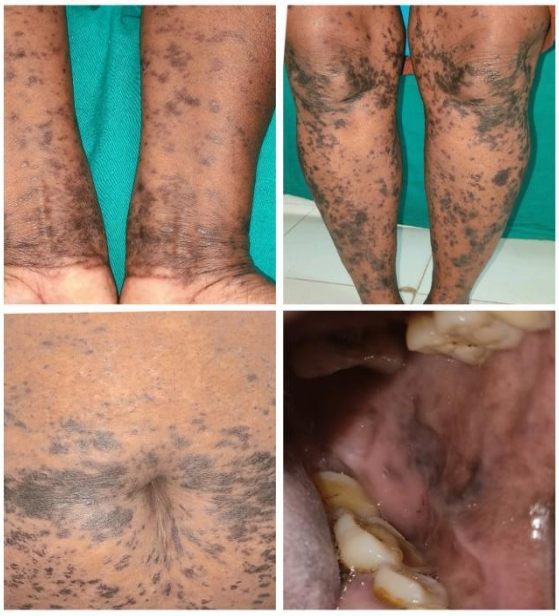

Figure 9: Generalized Eruptive LP+Oral LP.

It represents increased granular layer in histology. Wickham's striae were absent in Lichen planus pigmentosus and Actinic LP. Grey-blue colour is the predominant pigment in our study which is similar to Chandravathi et al.[11] Gery blue dots in histology represents melanophages in the dermis. Vacular findings such as red dots/globules and mixed pattern in a patchy or peripheral distribution is seen which is comparable to

Lallas et al.[9] Additional findings such as comedo like openings, corn pearls and milium cysts were noted in less number of cases which is consistent with studies likeVasquez-Lopez et al, Chandravathi et al.[10,11]

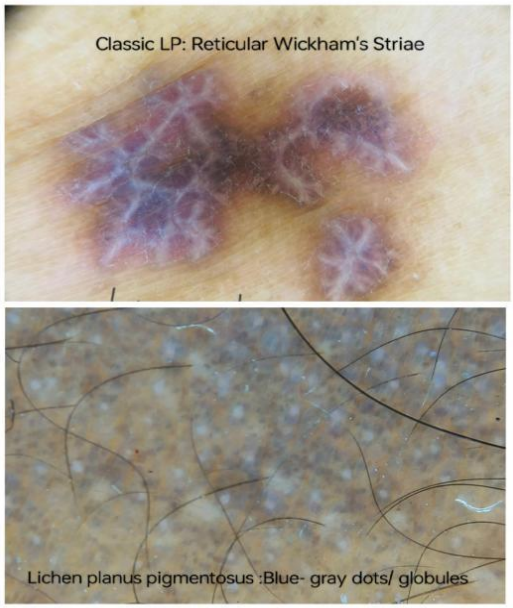

Figure 10: Dermoscopic findings.

In this study associated systemic diseases were found in 93 patients(36.1%) which is high when compared to the studies by Bhattacharya et al and Gupta et al showing 16.4% and 11% respectively.[6,8] Among them the most common being DM (61.2%) followed by HTN (30.1%), hypothyroidism (8.8%) of total cases with systemic involvement. There were 7 cases of Grinspan syndrome (LP, DM and HTN) in our study. There has been an increase in the prevalence of DM and carbohydrate intolerance as a result of faulty carbohydrate expression in the epidermal cells in patients with LP.[4] Metabolic complications can be attributed to increased oxidative stress leading to chronic inflammation seen in LP.[5] Screening for metabolic syndrome should be done to identify at risk individuals which can prevent cardiovascular complications later in life.[5]

Limitations

The drawbacks of this study were it was retrospective, observational, hospital-based, and descriptive in design. The study may not accurately reflect the characteristics of the general population.

CONCLUSION

Lichen planus is a chronic papulo squamous disorder with some acute presentations. Classical LP is the commonest clinical variant observed. Childhood LP contributed to significant number of cases, although it is considered to be rare. Dermoscopic features like Wickham's Striae, pigmentation and vascular findings scored big in identification of LP and differentiating from other similar dermatoses. In the present study LP is significantly associated with systemic diseases like DM, HTN and hypothyroidism reiterating the autoimmune basis. Therefore, screening of patients for DM, HTN must be performed for early identification and prevention of complications later in life. Early diagnosis and prompt management prevents permanent sequelae like dyspigmentation, cicatricial alopecia and scarring there by improving the quality of life of patients.

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Ethical approval: Not required

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