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Original Article

Different clinical presentations of lichen planus

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Abstract

Objective To determine the frequency of different clinical variants of lichen planus.

Methods A prospective cross-sectional study was done including 255 patients of all ages and both sexes attending Dermatology outdoor at Shaikh Zayed Hospital, Lahore from January 2018 to December 2019.

Results Out of 255 patients in this study, 134 (53%) were females and 121 (47%) were males. The mean age of the patients was 51±23.35 years. Among cutaneous variants, classic LP was the predominant clinical type (40.3%, n=103), followed by hypertrophic LP (n= 23, 9%), lichen planus pigmentosus (n=19, 7.6%), lichen nitidis (n=17, 6.6%), generalized eruptive lichen planus (n=14, 5.5%), lichenoid drug eruption (n=9, 3.5%), follicular (n=4, 1.5%), annular and actinic each (n=3, 1.17%), bullous (n=2,0.78%), and atrophic (n=1,0.4%) variety. Oral lichen planus was seen in 54 patients (21.7%). The most frequent occurrence was of reticular type (n=21, 8%), followed by pigmented (n=17, 7%) and erosive variant (n=16, 6%). Out of 54 patients with oral lesion of lichen planus, 43 of them (16. 9%) oral lesion in combination with cutaneous lesions most commonly with classic LP (n=28, 10.10%), hypertrophic (n=12, 4.7%), LPP (n=1, 0.4%), follicular LP (n=1, 0.4%), and nail pterygium (n=1, 0.4%). Oral lesion were absent with other variant of LP like atrophic, annular and generalized eruptive. Koebner's phenomenon was seen in 27 patients (10.6%), while nail and genital involvement was noted in 34 and 3 (13% and 1.17%) patients respectively.

Key words
Lichen planus, morphological variants.

Introduction

Lichen planus (LP) is a chronic, immune mediated inflammatory disease that affects the skin, nails, hairs and mucous membranes with characteristic clinical and histopathological features. The diagnosis of LP in its classical form i.e. the appearance of pruritic, purplish and polygonal papules at sites of predilection frequently in association with characteristic mucous membrane lesions is usually not difficult, rather allows for a reliable clinical diagnosis. Lichen planus affects primarily middle-aged adults, but can occur at any age, preferentially between 30 and 60 years of age.[1] LP is uncommon in pupilage, as only 5-10% of patients are children.[2] The gender distribution of LP is almost equal. In occasional studies, a slight female predominance has been observed.[3]

Lichen planus is assumed to result from an abnormal T-cell-mediated immune response in which CD8+ T lymphocytes[4] attack basal keratinocytes by recognizing them as foreign because of changes in the antigenicity of their cell surface and leading to apoptosis of the cells. Various causative factors, including viral or bacterial antigens, metal ions, drugs or physical factors, can initiate the autoimmune process e.g. associations between hepatitis C infection and LP have been reported.[2,5]

The prevalence of LP in the total population is

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unresolved. Its frequency is estimated at between 0.5 and 1.0%[4] but it is believed that actual frequency is lower than the estimated frequency.

The morphological variants are more diverse. It has different variants based on the morphology of the lesions and the site of involvement. LP can involve the skin or mucous membranes including the oral, Vulvo-vaginal, esophageal,[6] laryngeal, and conjunctival mucosae. The burden of the disease is higher in some variants like hypertrophic LP and erosive oral LP, which may have a more chronic pattern. The nail beds may also be affected,[7] with resultant ridging, thinning, subungual hyperkeratosis and ptyrigium. Scalp involvement, if untreated, can lead to scarring and permanent hair loss.[8] Drugs or contact allergens can cause lichenoid reactions as the main differential diagnosis of LP. LP can significantly affect the quality of life of patients as well. It is considered a self-limited skin disorder with the mean duration of 1-2 years. Longer and chronically recurrent courses are possible, so that the prognosis in the individual case is unpredictable.[9] The rationale of our study was to observe the recent diverse clinical variants of LP.

Materials and Methods

This prospective cross-sectional study was carried out in the Dermatology Outpatient Department, Shaikh Zayed Hospital, Lahore, Pakistan, during the period from January 2019 to December 2019. Two hundred and fifty five cases were enrolled with clinical diagnosis of lichen planus. Digital photographs were taken for each patient in good illumination. Formal consent was taken from each patient after full explanation about the nature and the goal of the present study. Ethical approval was obtained from the Ethical Committee of Federal Post Graduate Medical Institute, Sheikh Zayed Hospital, Lahore.

Results

Out of 255 patients, 134 (53%) were females and 121 (47%) were males with a female to male ratio of 1.4:1. The mean age of the patients in our study was 51±23.35 years. Majority of the patients (169) were between 28-42 years of age group (66%), followed by 31 patients of 18-27 years of age group (12%), while 24 patients were between 43-55 years (9%), and twenty patients with 3-17 years of age group were noted (7.8%), and more than 55 years of age group constituted 4% (11) of our study.

Duration of lichen planus ranged from 2 months to 18 years. In 92 (35.65%) patients, 2-5 years duration was recorded, 6 months to 2 year duration in 78 (30.23%) patients, 48 (18.6%) patients had lichen planus of 2-6 months duration, and more than 5 years duration was noted in 37 (14%) patients.

In case of cutaneous Lichen planus, out of 201 patients, pruritus was the major symptom among 179 (70.1%) participants, and burning sensation was witnessed among 26 (48%) patients out of 54 in case of mucosal Lichen planus.

Among 255 patients of lichen planus studied, the commonest type encountered in cutaneous LP was the classical type of lichen planus in 103 (40.3%) patients, followed by hypertrophic variety of lichen planus in 23 (9%) patients, lichen planus pigmentosus and lichen nitidis in 19 and 17 (7.4% and 6.6%) patients respectively, eruptive or guttate lichen planus in 14 (5.5%) patients while lichenoid drug eruption in 9 (3.5%) patients. The follicular, actinic, annular, bullous and atrophic lesions of lichen planus were observed in 1.5%, 1.17%, 1.17%, 0.78%, and 0.4% of the patients respectively. Koebner's phenomenon/ linear lichen planus

was seen in 27 (10.5%) patients mostly with classical (n=11, 4%), nitidis (n=10, 3.9%), and eruptive (n=6, 2%) type of lichen planus.

We observed oral lesion of lichen planus in 54 patient (21.7%). We noticed 3 clinical variant of oral LP i.e. Reticular, the most common type (n=21, 8%), pigmented as the second most common type (n=17, 7%) and erosive variant (n=16, 6%, both mixed and isolated). During study we came across mixed type of lesions mostly cutaneous variety of LP with oral lesions of lichen planus.

Out of 54 patients with oral lesion, 43 of them (16.9%) were having oral lesion in combination with cutaneous lesions most commonly with classic LP (n=28, 10.10%), hypertrophic (n=12, 4.7%), LP pigmentosus (n=1, 0.4%), follicular LP (n=1, 0.4%), and nail pterygium (n=1, 0.4%). Reticular variety was most frequent with classic variant of LP (n=13, 5%) and hypertrophic type (n=7, 2.7%), while pigmented variant accompanied 11 (4%) patients with classical LP, 5 patients with hypertrophic (1.9%), and 1 patient of each LPP, follicular and nail pterygium type (0.4%). Erosive type of LP was only observed in combination with classic lesions of LP in 5 patients (2%).

Oral lesion were absent with other variant of LP like atrophic, annular and generalized eruptive. The isolated oral lesions were only of erosive type in 11 (4%) patients. Genital lesions of erosive type were observed in only 3 patients (1.17%) involving external genitalia in 2 males and 1 female.

Nail involvement was observed in 34 (13%) patients. Most prominent nail change was nail pterygium in 13 (5%) patients. Other patients depicted discoloured nails (n=7, 2.9%), thinned and roughened nail plates with longitudinal ridging (n=14, 5.5%).

Table 1 Distribution of patients according to age.

Age in years	*No. of patients*	*Percentage*
3-17	20	7.8%
18-27	31	12%
28- 42	169	66%
43-55	24	9%
<55	11	4%
Mean±SD	51±23.35	
Range	3- 78	

Table 2 Distribution of patients according to gender.

Gender	*No. of patients*	*Percentage*
Female	134	53%
Male	121	47%
Total	255	100%

Table 3 Frequency of different Morphological variants of LP.

Morphological variants of cutaneous LP	*No. of patients*	*Percentage (%)*
Classic	103	40.3%
Hypertrophic	23	9%
LP Pigmentosus	19	7.4%
Lichen Nitidis	17	6.6%
Eruptive LP	14	5.5%
Lichenoid Drug Eruption	9	3.5%
Follicular	4	1.5%
Actinic	3	1.17%
Annular	3	1.17%
Bullous	2	0.78%
Atrophic	1	0.4%
Total	198	77.32%

Table 4 Morphological variants of oral LP.

Morphological variants of Oral LP	*N (number)*	*Percentage (%)*
Reticular	21	8%
Pigmented	17	7%
Erosive	16	6%
Total	54	21.7%

Table 5 Mixed variants of LP.

Mixed Morphological variants of LP	*N (number)*	*Percentage (%)*
Classic + Oral	28	10.10%
Hypertrophic+Oral	12	4.7%
Lichen Planus Pigmentusus+Oral	1	0.4%
Follicular LP+Oral	1	0.4%
Nail ptyrigium+Oral	1	0.4%
Total	43	16.86%

Table 6 LP in special situations.

Morphological variants of LP	*N*	*Percentage (%)*
linear LP/ Koebner's phenomenon/ Isomorphic	27	10.6%
Genital LP	3	1.17%
Lichen Planus of Nail	34	13%

Discussion

This prospective cross-sectional study was done in Dermatology OPD, Shaikh Zayed Hospital, Lahore from January 2019-December 2019 and we enrolled 255 patients with clinical diagnosis of lichen planus. There are several studies which have described frequency of different morphological patterns of lichen planus.

In our study we observed that the most common variant of cutaneous LP was the classical type (40.3%). Same observations was also reported by the N. N. Edith[10] in Africans children in 2007 who described the classic lesions as the comment type of LP in his study. But our observation in quite different from a study by Hakkou F *et al.*[11] who found classic lesion in 6% patient. In this study we diagnosed 9% patients with hypertrophic LP as the second most common variant of LP while J Rabia *et al*.[12] along with Ukono *et al.*[13] and Akhtar and colleagues[14] found hypertrophic LP to be the most common variety in their studies showing 25%, 28.6% and 31% patients with it respectively. Patient with LP pigmentosus constituted about 7.4% in our study which is comparable to Hakkou F *et al.*[11] who reported 6% patients with pigmented lesions.

We also noticed lesions of Lichen nitidis in 6.6% patients while 5.5% patients depicted eruptive/ generalized lesions of lichen planus. Generalized eruptive lesion of lichen planus were also observed by N.N. Edith[10] who reported it in 15.4% patient in his study which is quite higher than our observation. We also came across with lichenoid drug eruption in 3.5% patient. The follicular, actinic, annular, bullous and atrophic lesions of lichen planus were observed in our study in 1.5%, 1.17%, 1.17%, 0.78% and 0.4% of the patients respectively while J Rabia *et al*.[12] noticed follicular lesions in 4.5%, annular lesion in 5.5% and atrophic lesion in 4% of the patients. This finding is quite different from our study but comparable to the studies done by Ukono[13] and Hakkou.[11] However Akhter and colleagues[14] reported 12% patients with atrophic lesions.

We observed oral lichen planus in 54 patients (21.7%) and recorded all its varieties as Shen *et al*.[15] also reported buccal mucosa involvement in 14.9% of the patients. The most frequent occurrence in our study was of reticular type (n=21, 8%), pigmented as the second most common type (n=17, 7%) and erosive variant was noticed in 16 (6%) patients. On the contrary Boyd AS[16] and Tandon YK[9] reported reticular and erosive forms as most common variant while J Rabia *et al.*[12] observed only erosive variety in 17.5% of their patients. Hakkou[11] and Akhter and colleagues[14] also reported erosive lesion in 28% and 20% patients respectively.

During the study we came across mixed type of lesion mostly cutaneous variety of LP with oral lesions of lichen planus. Out of 54 patients with oral lesion, 43 of them had oral lesion in combination with cutaneous lesions most commonly with classic LP (n=28, 10.10%), hypertrophic (n=12, 4.7%) and lichen planus pigmentusus (n=1, 0.4%). We also found 1paient of each follicular LP (n=1, 0.4%) and nail ptyrigium (n=1, 0.4%) had oral lesion. Reticular variety was most frequent with classic variant of LP (n=13, 5%) and hypertrophic type (n=7, 2.7%), while pigmented variant accompanied 11 patients (4%) with classical LP, 5 patients (1.9%) with hypertrophic, and 1 patient of each LPP, follicular, and nail

pterygium type (0.4%). Erosive type of LP was only observed in combination with classic lesions of LP in 5 patients (2%). J Rabia *et al.*[12] showed quite high percentage of oral lesions with hypertrophic LP while we mostly observed oral lesion with classical variant. Oral lesion were absent with other variant of LP like atrophic, annular and generalized eruptive variety, as also reported by J Rabia *et al.*[12] The isolated oral lesions were only of erosive type in 11 (4%) patients in our study.

We observed linear LP/ Koebner's phenomenon in 27 patient (10.6%) and it was mostly observed with classical (n=11, 4.3%), nitidis (n=10, 3.9%), and eruptive (n=6, 2.3%) variants. This same isomorphic response was noticed by Bhattacharya M[17] and Boyd AS[18] in about 50% of LP patients.

Nail involvement was observed in 34 (13%) patients. Most prominent nail change was nail pterygium in 13 (5%) patient. Other patients depicted discoloured nails (n=7, 2.9%), thinned and roughened nail plates with longitudinal ridging (n=14, 5.5%). Some other authors[19-22] have described same changes.

We also observed 3 patients (1.17%) with genital lesions of erosive LP involving external genitalia in 2 Males and 1 female whereas Micheletti L *et al.*[23] found erosive lesions in 33.6% in a group of 125 women. In case of cutaneous lichen planus, out of 201 patients, pruritus was the major symptom among 179 (70.1%) participants, and burning sensation was witnessed among 26 (48%) patients out of 54 in case of mucosal Lichen planus. Bhattacharya M[17] and Boyd AS[16] also reported agonizing pruritus in 80% of the patients with cutaneous LP.

In our study, duration of lichen planus ranged from 2 months to 18 years. Mostly 92 (35.65%) patients had 2-5 years duration, 6 months to 2 years duration in 78 (30.23%) patients, 2-6 months duration in 48 (18.6%) patients, and more than 5 years duration was noted in 37 (14%) patients. A study by Wolf R[24] reported mean duration of LP to be 1-2 years.

In our study, we found slight predominance of female gender as the female to male ratio was 1.4:1. The results presented by Persić *et al.*[25] and Bajaj *et al.*[26] also indicated a significant female predominance (67.5% versus 32.5% and 57.9% versus 42.1% respectively), while Gonzaga *et al.*[27] found men (62.2%) dominated over women (37.8%) in their study.

The mean age of the patients in our study was 51±23.35. Majority of the patients (169) were between 28-42 years of age group (66%), followed by 31 patients of 18-27 years of age group (12%), while 24 patients were between 43-55 years (9%), and twenty patients with 3-17 years of age group were noted (7.8%) and more than 55 years of age group constituted 4% (11) of our study.

Rabia J *et al.*[12] showed majority of their patients in the age range of 21-50 years i.e. 76.5% while Persić *et al*.,[25] Bajaj *et al.*[26] and Omal *et al*.[28] presented increased prevalence of lichen planus in middle-aged patients (40-60 years). As we noticed LP in very younger age group i.e. 3-17 years of age (7.8%), same observations were also recorded by Balasubramaniam *et al.*[29] in 2008.

Significance of our study is that we have observed increased incidence of LP in general and also increased incidence in younger age group.

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