ORIGINAL ARTICLE

CHILDHOOD LICHEN PLANUS: A STUDY OF 54 CASES FROM PAKISTAN

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Background: To determine the clinical profile of Childhood Lichen Planus (LP) in Pakistani patients presenting to Dermatology outdoors of a Tertiary Care Hospital. It was a cross-sectional study, conducted at the Dermatology Outpatient of a Tertiary Care Hospital in Pakistan from December 2021 to December 2023. **Methods**: All new patients with either gender up to the age of 15 years with clinical diagnosis of LP were included. Clinical data was recorded for each patient separately. Physical examination was performed to determine the type of disease, presence or absence of Koebner phenomenon and the presence of other associated diseases. The data collected was analyzed using Statistical Package for Social Sciences (SPSS) version 23. **Results**: The mean age of onset was 9.792±2.774 and mean duration was 11.63±6.83 months. Pruritus was found in 51 (94.4%) patients. Classic LP was found in 35 (64.9%) cases, hypertrophic LP was found in seven (13.0%) cases and linear LP was found in six (11.1%) patients. Lichen planopilaris, actinic lichen planus and atrophic lichen planus were seen in one (1.9%) patient each. Nail involvement was seen in 5 (9.3%) patients with only one (1.9%) having nail only lichen planus. Similarly, mucosal involvement was seen in 7 (13.0%) patients and only two (3.7%) patients had mucosal only lichen planus. **Conclusion**: Lichen planus is uncommon in children. Childhood LP largely resembles adult LP. There is no significant gender predominance. Nail Lichen planus and mucosal LP are rare and family history and associated systemic diseases are found very rarely.

Keywords: Childhood lichen planus; Dermatology; Outpatient; Paediatric dermatoses; Tertiary care hospital

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INTRODUCTION

Lichen planus (LP) is a chronic immune mediated inflammatory disease that affects skin, nails, hairs and mucous membranes.[1,2] It classically presents with flat-topped, shiny polygonal, violaceus and pruritic papules that often expand to 0.5–1.5 centimeter. [1–3] Thin white lines known as Wickham's striae can be seen on the surface of the lesions on a closer view.[1–3] The lesions often heal in few months with post inflammatory hyperpigmentation.[2] The disease may affect any body sites including mucosae but the volar aspect of the wrists, the lumbar region and the skin around the ankles are common sites of cutaneous lesions.[1–4] A number of clinical variants that display patterns different from classic LP, have been described, namely hypertrophic LP, actinic LP, annular LP, bullous LP, generalized eruptive LP, lichen planus pemphigoides, atrophic LP, linear lichen planus, lichen planus pigmentosus, lichen planopilaris, mucosal LP and LP of the nails.[1–4]

Lichen Planus (LP) is primarily a disease of adults with less than 5%of cases occurring in children.[5-8] The disease often assumes atypical clinical patterns in children and Non-Caucasian children are disproportionately more affected.[5,9,10] A number of studies have described clinical pattern of childhood LP.[5–11] Majority of studies with larger number of cases have described clinical pattern of childhood LP in Indian children.[5,8,11–15] So far no study has described clinical pattern of childhood lichen planus in Pakistani population. The aim of this study was to determine the clinical profile of childhood LP in Pakistani patients presenting to Dermatology outdoors of a Tertiary Care Hospital in South Punjab.

MATERIAL AND METHODS

The cross-sectional study was carried out at the Dermatology Outpatient of a Tertiary Care Hospital in South Punjab Pakistan from December 2021 to December 2023. The Ethical Committee of the Hospital approved the study (Ref No 16 dated 20 November 2021). Diagnosis of Lichen Planus was essentially clinical and biopsy was performed only for patients in whom the clinical diagnosis was uncertain.

Inclusion Criteria: All new patients with either gender up to the age of 15 years reporting to dermatology department during this two-year period with clinical diagnosis of Lichen Planus were included in the study after taking informed consent

Exclusion Criteria: Patients reporting for second or subsequent visit with Lichen planus were not included in the study. All cases in whom diagnosis was uncertain and histopathology of skin biopsy specimen did not support the diagnosis of Lichen Planus were excluded from the study.

Clinical findings of each patient were recorded separately. Diagnosis of Lichen Planus was essentially clinical with confirmation by biopsy if required. Data regarding the age, gender, age at onset, duration of disease at presentation, site where skin lesion appeared first, family history, presence or absence of Koebner phenomenon and the presence of associated diseases was collected for each patient. Physical examination was performed to determine the type of disease, presence or absence of Koebner phenomenon and the presence of other associated diseases.

Total number of new patients with Lichen Planus reporting to Dermatology outpatient during the study period regardless of age was also noted. Descriptive statistics (mean with standard deviation, percentages and frequency distribution) were used to evaluate the results. Frequencies and percentages were calculated for categorical variables while mean and standard deviations were calculated for numerical variables. Computer program SPSS-23 was used to manage and analyze the data.

RESULTS

A total of 642 new patients with Lichen Planus reported to Dermatology outpatient during the study period. Out of these 54 new patients with age up to 15 years were included in the study. The children comprised 8.4 percent of the total number of cases. 30 (55.6%) patients were male and 24 (44.4%) patients were female. Male to female ratio was 1.3:1. The mean age of patients was 10.76±2.815 years. The mean age of male patients was 11.20833±1.864524 years and mean age of female patients was 10.40±3.379 years. The mean age of onset of disease was 9.7919±2.77350. The mean age of male patients was 9.4500±3.33691years and mean age of female patients was 10.2192±1.82839 years. Patients were divided into three groups depending on age at onset. The age groups included, Group 1 with age up to five years, Group 2 with age more than 5 to 10 years and Group 3 with more than age 10 to 15 years. (Table-1). The mean age of onset of disease was 9.792±2.774. The mean age of onset of disease in male patients was 9.450±3.337years and mean age of onset of disease 10.219±1.828 years in female patients. In majority of patients (n=50, 92.6%) disease started after five years of age.

The duration of disease ranged from one month to two years and six months with a mean duration of 11.63±6.83 months. The duration of disease was less than three months in seven (13%) patients, less than six-month in 18 (33,3%) patients, less than nine months in 19 (35.2%) patients, less than one year in 34 (63 %) patients and more than one year in 20 (37%) patients. Pruritus was found in 51 (94.4%) patients. Three patients (5.6%) did not have pruritus. (Table-2). None of our patients had family history of lichen planus. Biopsy was performed to confirm the diagnosis in six cases. A typical histopathology with hyperkeratosis, wedge-shaped hypergranulosis, irregular epidermal hyperplasia, degeneration of basal layer of the epidermis and a band like lymphocytic infiltrate obscuring the dermoepidermal junction was seen. (Figure-1). Thirty-five (64.9%) patients presented with classic lichen planus out of which seven (13.0%) patients presented with generalized eruptive lichen planus. Figure-2 shows Classic LP in a 15 years old boy. Seven (13.0%) patients had hypertrophic lichen planus. Linear lichen planus was seen in six (11.1%) cases. Figure-3 shows Linear LP along Lines of Blaschko in an eight years old girl.

Lichen planopilaris, actinic lichen planus and atrophic lichen planus were seen in one (1.9%) patient each. Nail involvement was seen in 5 (9.3%) patients with only one (1.9%) having nail only lichen planus. Similarly, mucosal involvement was seen in 7 (13.0%) patients and only two (3.7%) patients had mucosal only lichen planus. (Table-3).

Koebner phenomenon was observed in four (7.4%) of our patients. Out of these two (6.7%) were males and two (8.3%) were female.

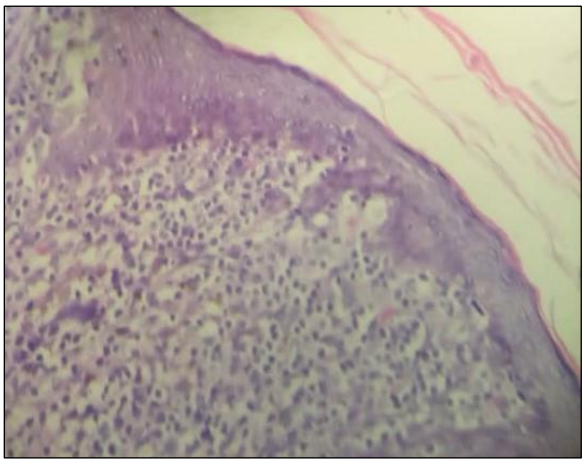

Figure-1: Histopathology in LP

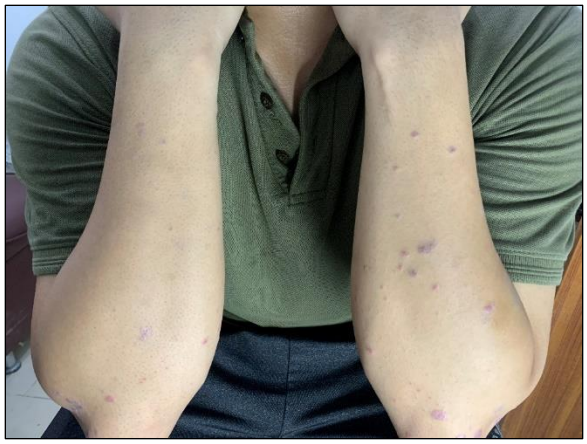

Figure-2: Classic LP in a 15 years old boy

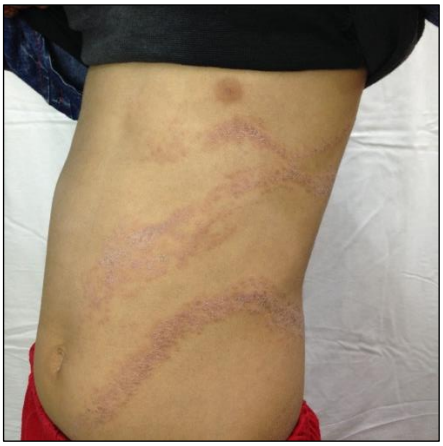

Figure-3: Linear LP along Lines of Blaschko in an eight years old girl

Table-1: Age of Onset * Gender Crosstabulation

Age Group		Gender- Number and % within Age group		Number and % of Total
		Male	Female	
Group 1	Less than 5 Years	4 (13.3%)	0	4 (7.4%)
Group 2	5 to 10 years	13 (43.3%)	11 (45.8%)	24 (44.4%)
Group 3	10 to 15 Years	13 (43.3%)	13 (54.2%)	26 (48.1%)
Total		30 (55.6%)	24 (44.4%)	54 (100.0%)

Table-2: Pruritus *Gender Crosstabulation

Pruritus	Gender		Total
	Male	Female	
Yes	28 (93.3%)	23 (95.8%)	51 (94.4%)
No	2 (6.7%)	1 (4.2%)	3 (5.6%)

Table-3: Clinical variants of lichen planus (LP)

Clinical variant of LP	Patients, n (%)		Total n (%)
	Male	Female	
Classic LP including acute generalized LP	15 (62.5%)	20 (66.6%)	35 (64.9%)
Acute generalized LP type Classic LP	3 (12.5%)	4 (13.3%	7 (13.0%)
Hypertrophic LP	5 (20.8%)	2 (6.7%	7 (13.0%)
Linear LP	3 (12.5%)	3 (10.0%)	6 (11.1%)
Lichen Planopilaris	0	1 (3.3%	1 (1.9%)
Atrophic LP	0	1 (3.3%	1 (1.9%)
Actinic LP	0	1 (3.3%	1 (1.9%)
LP involving nails	3 (12.5%)	2 (6.7%)	5 (9.3%)
Nail involvement with Cutaneous LP	3 (12.5%)	1 (3.3%)	4 (7.4%)
Nail only LP	0	1 (3.3%	1 (1.9%)
LP involving mucosae	4 (16.7%)	3 (10.0%)	7 (13.0%)
Mucosal involvement with Cutaneous LP	3 (12.5%)	2 (6.7%)	5 (9.3%)
Mucosal only LP	1 (4.2%)	1 (3.3%	2 (3.7%)
Total	24 (44.4%)	30 (55.6%)	54

DISCUSSION

Lichen planus is rare in childhood and often assumes atypical clinical patterns.[7–10,16,17] A number of case reports and case series of childhood lichen planus have been published.[6–10,18–20] Most of the studies with larger number of cases are from India which have shown a higher percentage of children.[6,12–14] Studies from the UK[8] and US[5] have also found the over-representation of non-Caucasian children including children of South Asians and African American decent[5,8,9,16,21].

The frequency of lichen planus reported previously in children ranged from 1–11.2% with no significant gender predominance.[6,10,12,15] Children comprised 8.4% of the total number of lichen planus cases reporting to our outdoors. This is in concordance with the studies from India and a study from Libya.[8,11–12,15,21] A lower prevalence of 3.9% and 2.1% was reported in white population from UK and Italy.[8,10–11,19] Our study further strengthens the hypothesis that

childhood lichen planus is common in children of South Asian ancestry.[5,7–9]

We found slight male preponderance with a male to female ratio of 1.3:1. This was similar to Handa S *et al*,[6] Balasubramaniam P. *et al*,[8] and Sharma R *et al*.[22] Majority of previous reports did not find any gender difference.[10,14,15] Others showed a slight female preponderance.[5,23] Higher males to female ratio in our patients may be due to reporting bias in our society.

The youngest patient in our study was four years of age and the mean age was 10.76±2.81 years. Similar mean age has been reported previously by Pandhi D *et al*.[14] in their Indian patients. Other larger studies by Handa S *et al*.[6] and Sharma R *et al*.[23] have reported a lower mean age of 7.1 years and 8.9 years respectively. The mean age of onset of disease in our patients was 9.79±2.77 years. This was in concordance with the mean age of onset reported previously.[14,15] In majority of our patients (n=50, 92.6%) disease started after five years of age. In a study by Sharma R *et al*.[23] the majority of children developed disease between 5 and 9 years with a mean age of onset of 8.4 years.
The duration of disease ranged from one month to two and half years with a mean duration of 11.63±6.83 months. Majority of patients reported the disease late, i.e., after six months with only 13 % of patients reporting the disease before three months. Similar findings have been reported previously.[23]

Pruritus was found in 51 (94.4%) of our patients. This was in concordance with previous studies which reported pruritus with a frequency of 96%[12], 100%[23], and 87%[24]. and therefore, it can be assumed that lichen planus is associated with pruritus in children.

None of our patients had a family history of lichen planus. Our findings concur with those of previous studies [6,11,15,18,23] Other have reported positive family history in 2–17% of their patients.[5,7,12,14,24,25]
Classic Lichen planus affected 64.9%of our patients and was the most common clinical type of lichen planus followed by hypertrophic and linear variants. Similar findings have been reported previously [5,6,14,19,22–25] Others found linear lichen planus to be the most common variant.[7,8,10]

Nail involvement was seen in 5 (9.3%) patients with only one (1.9%) patient having nail only lichen planus. Nail involvement is infrequent in children and disease of the nails without skin involvement is rare.[6,10] Our findings were similar to Merhy R *et al*,[7] who found exclusive nail involvement in 3% of their patients whereas 8% had simultaneous nail and cutaneous LP. None of the children in studies by Nanda *et al*[24] and Sharma R *et al*[23] had nail involvement. Other have reported frequency of nail involvement up to 19% [6,7,10,11,12,15]

Mucosal involvement was seen in 7 (13.0%) of patients and only two (3.7%) patients had mucosal only lichen planus. (Table-2). Luis-Montoya P *et al*[11] also found mucosal only lichen planus in one out of 24 children with lichen planus. Other also reported mucosal involvement to be rare.[10,15,18] On the other hand, Handa S *et al*,[6] and Sharma R *et al*[23] found frequent mucosal involvement of 13.7% and 18% respectively, in their Indian patients. Nanda A *et al*[24] found much higher mucosal involvement in 39% of their patients with childhood LP from Kuwait.

Koebner phenomenon was observed in four (7.4%) of our patients. Out of these two (6.7%) were males and two (8.3%) were female. Our findings were in concordance with Kanwar and De *et al*,[12] and Kanwar AJ *et al*.[22] Other studies have report frequency of Koebner phenomenon between 24% and 38.5%.[6,8,18,19,24] Kumar A *et al*,[25] observed Koebner phenomenon with a much higher frequency of 73.8%.

Associated diseases were found in six (11.11%) of our patients. three (5.55%) patients had atopic eczema, one (1.85 %) patient had associated generalized vitiligo and two (3.7%) patients had associated alopecia areata. Our findings were in concordance with those of Walton KE *et al*.[5] who found concomitant autoimmune diseases in four (11.11 %) of their patients. Walton *et al*[5] noted a greater incidence of autoimmune disease in their series of 36 American children with LP. was documented in four patients:[5]

One patient had myasthenia gravis, one had alopecia. areata, and one had both vitiligo and alopecia areata.[5] Pandhi D *et al*[14] found associated vitiligo and alopecia areata each in 2.2% of their patients. Similarly, Luis-Montoya P *et al*,[11] found concomitant atopic dermatitis and had vitiligo each in one (4.16%) patient.[11]. None of our patients had any associated systemic disease. Similar findings have been reported by Kumar V *et al*,[15] who did not find any associated systemic diseases in any of their patient. A number of associated diseases have been reported previously some of which may be coincidental. [5,12] Associated diseases reported previously included active hepatitis, vitiligo, autoimmune thyroiditis, myasthenia gravis, chronic hepatitis B infection, thymoma, autoimmune polyendocrinopathy and lichen nitidus.[5,12]

CONCLUSION

Lichen planus is uncommon in children. Childhood LP largely resembles adult LP. There is no significant gender predominance. Nail LP and mucosal LP are rare and family history and associated systemic diseases are found very rarely.

AUTHORS' CONTRIBUTION

AH, RBA, SS: Conceptualization of the study, literature search, data collection, data analysis, data interpretation, write-up, proof reading, revision of final copy of the manuscript.

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