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# Prevalence and Clinical Spectrum of Lichen Planus in Kano, Nigeria

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**Abstract**

**Background:** Lichen planus (LP) is a papulosquamous disease that affects skin, mucous membranes, hair and nails. It is a condition that lasts for 1 to 2 years, but may take a chronic, relapsing course over many years.

**Objectives:** To study the prevalence and clinical spectrum of lichen planus in Kano, Nigeria.

**Material and Methods:** This is a cross sectional observational study of patients who presented at the medical outpatient clinic of Aminu Kano Teaching Hospital, Kano between August 2011 and October 2013.

**Results:** A total of 3,874 patients had various forms of skin diseases during the study period. Out of these, 158, had LP comprising of 68 (43%) males and 90 (57%) females. Lichen planus therefore, accounted for 4% of all dermatology cases that were seen on out- patients' visit. The patients' ages ranged from 3 to 68 years, with most of them in the age range of 20 to 49 years.

One hundred and two (64.5%) of them, presented with the classical variant of LP followed by the mixed variant with occurrence in 25 patients (15.4%). Actinic and Bullous variants had the least occurrences with 2, (1.2%) each.

Lichen planus confined to the skin was observed in 152 (96%) of the patients, while skin and mucous membrane involvement was seen in remaining 6 patients (4%) out of which 3 had lesions that involved the oral mucosa. None of the patients in this study presented with lesions restricted to the oral mucosa. The scalp was affected in 12 (7.6%), while genital lesions were seen in 2 patients (1.3%). Nail involvement was observed in 15 (9%) patients. Recurrence of the disease was documented in 29 (18 %) of the patients.

**Conclusion:** Lichen planus is not an uncommon condition in Kano, Nigeria as the observed prevalence is similar to the findings in other places. However, mucosal involvement is relatively rare.

## Introduction

Lichen planus (LP) is one of the common inflammatory disorders of skin, mucous membrane, nail and hair. It is characterized by violaceous, pruritic, polygonal, flat-topped papules and plaques [**1, 2**] that are usually distributed bilaterally and symmetrically over the trunk and extremities.

LP is reported in approximately 1% of all new patients seen at health care clinics with no

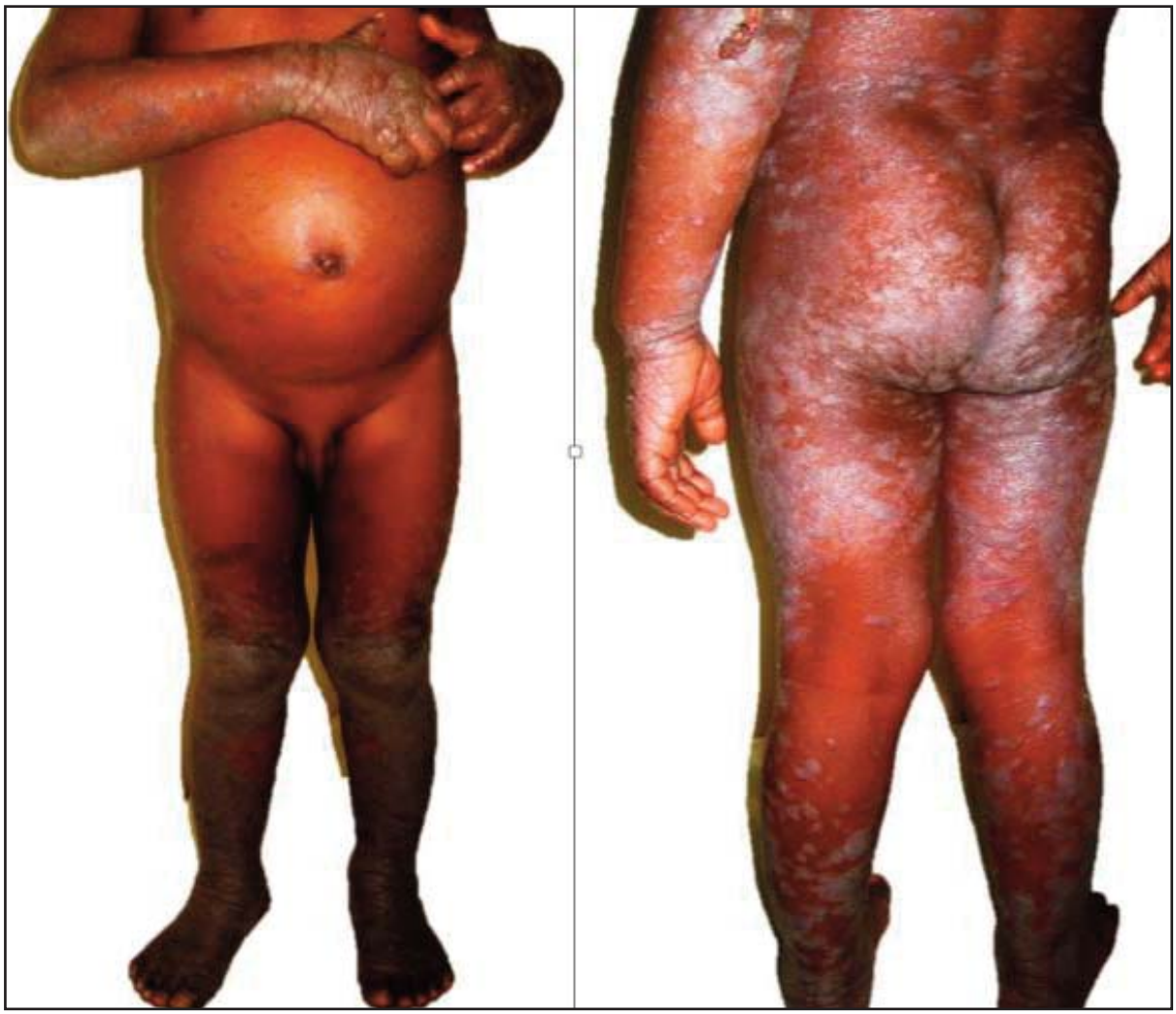

**Figure 1.** Extensive lichen planus in 3 year old boy

racial predispositions [3]. More than two thirds of patients with LP are aged between 30-60 years; however, LP can occur at any age [4]. Although the exact cause of LP remains unknown, immunopathological mechanisms are implicated in the pathogenesis of this disease [3]. LP is a self-limiting disease that usually resolves within 8-12 months [4]. The objective in this study is to establish the clinical pattern and spectrum of lichen planus in Kano, Nigeria.

## Material and Methods

The study was conducted in the medical out -patient clinic of Aminu Kano Teaching Hospital from August 2011 to October 2013. Approval for the study was sought and obtained from the health research ethics committee of the teaching hospital and informed consent was also obtained from each of the participating patients.

All new patients with a clinical diagnosis of lichen planus were included in the study. The diagnosis of lichen planus was made clinically and supported by histo-pathologic examination of biopsies taken from the patients where doubt existed. For each patient clinical examination of the skin, genitalia, mucous membranes, hair and nails was performed. Sites and distribution of the lesions were noted. A structured questionnaire was used to obtain socio-demographic data in all the patients that consented to take part in the study.

The data that was generated was collated and analyzed using computer based Statistical

**Table 1.** Demographic and Clinical Characteristics of Study Population

| VARIABLES | FREQUENCY (PROPORTIONS) |
|---|---|
| 0- 9 | 5 (3.1) |
| 10-19 | 24 (15.2) |
| 20-29 | 46 (29.2) |
| 30-39 | 41 (25.9) |
| 40- 49 | 22 (13.9) |
| 50- 59 | 11 (6.9) |
| 60- 60+ | 9 (5.7) |
| Site of affectation | |
| Skin alone | 155 (98.1) |
| Skin and Mucous membranes | 3 (1.9) |
| Mucous membranes only | 0 |
| Morphological types | |
| Classic form | 102 (65) |
| Mixed variant | 25 (15.4) |
| Hypertrophic | 17 (11) |
| Actinic | 2 (1.2) |
| Linear | 4 (2.4) |
| Bullous | 2 (1.2) |
| Atrophic | 3 (1.9) |
| Follicular | 3 (1.9) |
| Site of onset of lesion | |
| Lower limbs | 92 (58) |
| Upper limbs | 46 (30) |
| Trunk | 20 (12) |
| Distribution of lesions at presentation | |
| Upper Limbs | 16 (10.2) |
| Lower limbs | 32 (20.3) |
| Both limbs | 13 (8) |
| Trunk | 24 (15.3) |
| Trunk and upper limbs | 21 (13) |
| Trunk and upper limbs | 16 (10.2) |
| Generalised including the face | 36 (23) |

Package for the Social Sciences (SPSS) version 16.0. Quantitative variables were described using mean and standard deviation. Qualitative variables were presented as percentages, bar chart and pie chart.

## Results

A total of 3874 patients with skin diseases were seen in the medical out-patient clinic within the 23 months study period, out of which 158 had LP, making the prevalence to be 4%. Their ages ranged from 3 to 68 years (mean ± SD; 44.63 ± 15.12) (**Figure 1**). There were 68 males (43 %) and 90 females (57 %), giving a male to female ratio of 1:1.3, this reflects no statistically significant difference in the sex distribution (p>0.05). Majority of the patients 92 (58 %) were in the age group from 20-49 years, (**Table 1**). Classical form, characterized by papules and plaques was the commonest observed variant (**Figure 2**). It constituted 65% (102/158) of the cases. This was followed by the mixed (classic and hypertrophic) variant with 16.4% (25/158); hypertrophic variant (**Figure 3**), 11% (17/158); actinic variant, 1.2% (2/158) and linear variant, 2.4% (4/158). Bullous, atrophic, and follicular variants had 1.2% (2/158), 1.9% (3/158) and 1.9% (3/158) occurrences respectively (**Table 1**).

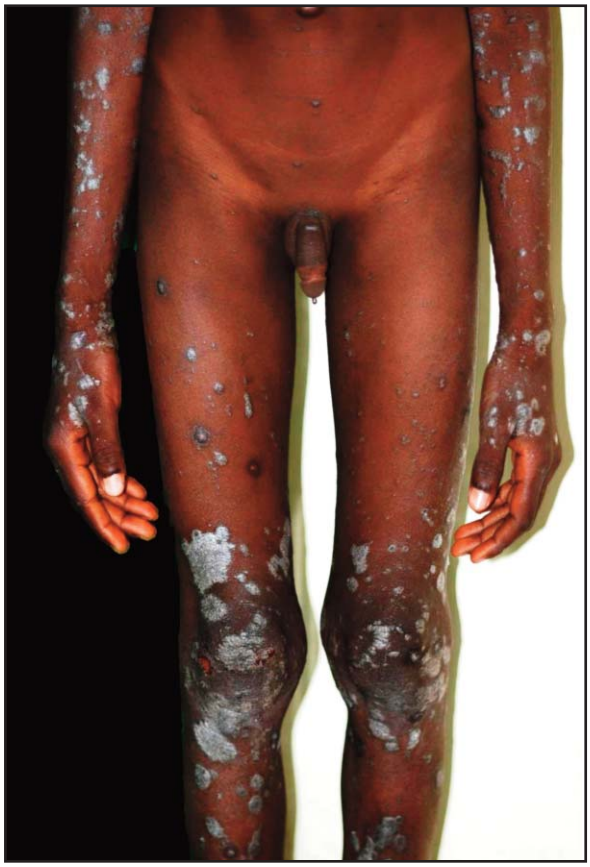

**Figure 2.** Flat-topped polygonal papules and plaques of classic lichen planus

While 88% of the 158 patients had their lesions commencing in the limbs, 58% having it in the lower limb and 30% having it in the upper limbs, only 12% had the lesions commencing in the trunk.

Twenty (15%) of the patients had their lesions restricted to the trunk, 10.2% and 20.3% had theirs restricted to the upper limbs and lower limbs res-

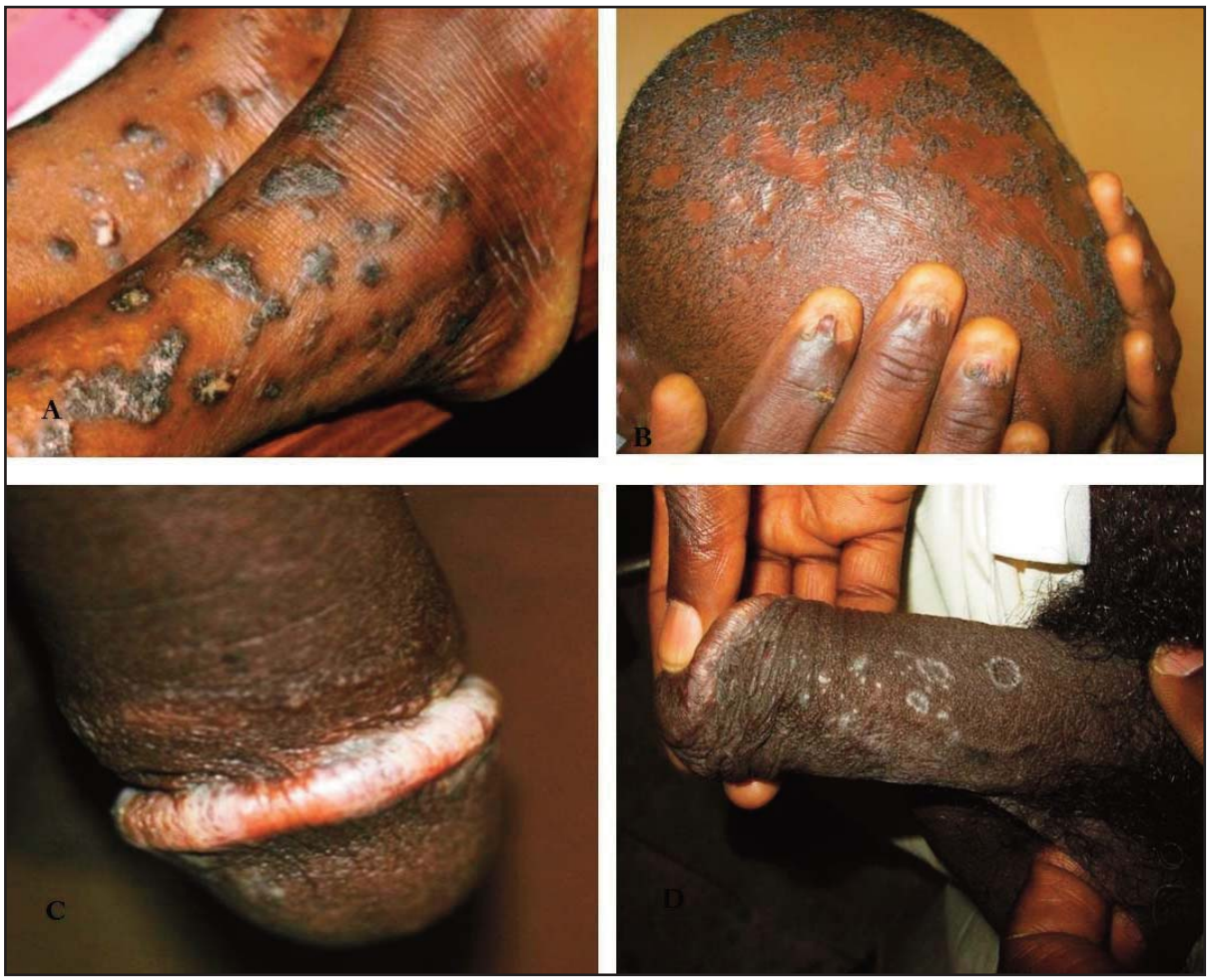


**Figure 3 (a,b,c and d).** a) Hypertrophic LP with the raised hyperpigmented verrucous plaques around the extensor surface of the lower extremities. b) Scalp LP (Follicular type) with pterygium of the nails. c) Grayish plaques of lichen planus on the glans. d) Annular papules on the penile shaft

pectively. Lesions on both upper and lower limbs only were seen in 8% while 10.2% had lesions on trunk and lower limbs. Trunk and upper limb involvement was observed in 13% while 23% had generallised lesions (**Table 1**).

The lesions were confined to the skin in 155 (98.1%) of the patients. Skin and mucous membrane involvement was seen in only 3 (1.9%) patients (**Table 1**).

Genital lesions were observed in 9 (5.7%) patients, all males. The lesions appeared as annular papules on the penile shaft (**Figure 3**) and as shiny flat toped grayish plaques around the corona (**Figure 3**). None of our patients had exclusive oral mucosal affectation.

Scalp involvement in the form of patchy cicatricial-alopecia was detected in 12/158 (0.8 %) of the patients (**Figure 3**).

Nail changes were present in 26 (16.5 %) patients. Longitudinal ridging was the commonest change (16/26, 62%) followed, in order of frequency, by distal notching ( 6/26, 23%), loss of nail plate and pterygium (4/26,15%) (**Figure 3**).

The duration of disease varied from 1 month to 6 years. Mean duration of disease was 8.2 months. Sixty two percent of cases had duration of disease between 3 weeks to 4 months. Varying degrees of pruritus was the chief complaint of most of the patients (156 /158, 98.7%).

## Discussion

The prevalence of LP is unknown; however, it is thought to be less than 1 percent of the population [**1**]. The present study found the prevalence of lichen planus to be 4.0% among patients with skin diseases. A similar prevalence was reported by *Nnoruka* et al and *Alabi*

et al in southeastern and southwestern Nigeria respectively [**5, 6**] However in a study in India it was 0.38% [**7**] Nevertheless, the estimated prevalence of LP is in the range of 0.22% to 5% globally [**8**].

In this study, the youngest patient was 3 years old and oldest patient was 68 year old. The largest number of patients (69%) was seen in the age group of 20-49 years. The mean age in this study group was 34.26 (+11.3) years which compares favorably with 37.13 (+12.8) years in a study by *Daramola* et al [**9**] from the southwest Nigeria. It is also similar to findings of *Salah* et al [**10**], *Tag-El-Din* et al [**11**], *Kacchawa* et al [**12**], *Dostrovsky* et al [**13**] and Singh et al [**14**]. This finding supports the suggestion that younger patients tend to be affected in tropical countries [**13**]. On the contrary, a UK study found the condition to occur mainly in persons aged over 49 years [**15**]. This difference is not surprising in view of the fact that life expectancy in Nigeria is 47 years, which, by implication, means we have fewer numbers of middle aged and the elderly in our population. In contrast to our European counterparts where the life expectancy is 80 years, majority of cases of LP have been reported to occur in patients between 30 to 60 years of age [**1, 4, 16**].

From this study, LP was found to be commoner among females compared to males (M:F = 1:1.3), though the difference is not statistically significant. This is in correlation with reports by *Salah* et al [**10**], *Garg* et al [**16**] & *Nangia* et al [**17**] who found M: F to be 1:1.1, 1:1.3 & 1:1.7 respectively. In Nigeria, similar ratios were also noted [**5, 9**] However, *Singh* et al [**14**] *Tag-El-Din* et al [**12**] & *Kacchawa* et al [**11**]. found it to be more common among males [**4**]. Thus, there is no consistency in the literature regarding the preponderance of sex in lichen planus, but most of the studies have shown that females are more commonly affected than males [**18**].

A lot of factors may explain the higher preponderance in females. LP is associated with other diseases of altered immunity e.g vitiligo, dermatomyositis, and myasthenia gravis which are commoner in females than males [**10, 11**] Similarly, females been more concerned with esthetics, are more likely to report to hospitals than males .

In glabrous skin, eruption of LP is characterized by small, flat topped, shiny, papules that may coalesce into plaques. These findings are well published in the literature [**18, 19**]. Our study also supports these results as lesions of majority of our patients (64.5%) were shiny papules and plaques. All the patients with LP had cutaneous involvement in this study.

Hair involvement was observed in 0.8% our patients , these were all diagnosed as having follicular LP (lichen planopilaris), presenting with patches of cicatricial alopecia of the scalp. This value, (0.8%), corroborates with findings in other studies [**20, 21**].

Some studies have shown that specific nail involvement occurs in about 10 percent of patients with LP [**22, 23**]. In this study nail lesions were seen in 9 % of our patients. This finding is consistent with previous studies done in Nigeria [**9**] and the USA, where reports of involvement of nails range from 1 to 10%. Pterygium was detected only in 2 of the 15 patients with nail involvement from this study. Apart from pterygium formation, other changes observed are neither specific nor pathognomonic because most of these patients practice manual work.

Mucous membrane lesions are common, occurring in 30–70% of cases, and may be present without evidence of skin lesions in 15-35% of LP [**24, 25**] In our study, however, we recorded a very low oral mucosal involvement (1.9%). A similar observation was made by *Alabi* et al [**5**]. None of our patients had isolated oral LP. It is most likely that patients with isolated oral lichen planus would present to oral and maxillofacial surgeon than to a dermatologist. The buccal mucosa lesions seen were all reticular type.

This study found that in most of the patients ( 61.5%) the lesions of LP were spread all over the body, followed by lesions localized to the lower limbs. A similar observation has been reported in Nigeria by Alabi GO [**5**] and in the USA by Boyd AS [**1**]. The Limbs were the most prevalent site of onset of LP, the prevalence was 88% from this study, this is in tandem with the findings of Altman and Perry who reported a frequency of 89 percent [**26**]

Classical LP was the most common variant of LP observed, constituting 65% of total cases

followed by mixed type 15.5% and hypertrophic type 11%. A similar dominance of classical LP over other variants has been reported in the literature by various authors [**1, 9, 16, 17**]

Itching is the chief complaint in most of the cases of lichen planus although in few cases that is absent. In this study, varying degrees of itching was associated with the skin lesions in almost all (98.7% ) the cases.

In our study, the duration of disease varied from 1 month to 6 years. Mean duration of disease was 8.2 months. 62 % of cases had duration of disease between 3 weeks to 4 months. This finding compares with what *Garg* et al [**16**] found. Lesion of LP in all our patients was associated with postinflammatory hyperpigmentation. Postinflammatory hyperpigmentation was also reported to be commoner in the African American population [**27**].

## Conclusions

The observed prevalence of Lichen planus in Kano, Nigeria is similar to that of several other places. However, mucosal involvement is rare in this environment.

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