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Research Article

Epidemiological study of Lichen Planus

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Abstract

Lichen planus constitutes about 1% of the patients in dermatology OPD. Lichen planus is prevalent all over world with varying incidence. It affects all races and is concentrated in the age group between 30-70 years. Childhood lichen planus is relatively rare with 2-3% of all lichen planus cases occurring below the age of 20 years. The incidence as well as clinical type of lichen planus changes according to geographical areas. The objectives of this study are; To calculate incidence of lichen planus among patients attending skin OPD. To study age and sex distribution of lichen planus. To study distribution of lichen planus on different parts of body. The study was conducted in the out patient department of Dermatology and Venereology at Image hospitals, Ameerpet, Hyderabad on patients with lichen planus. The duration of the study period was from March 2007 to February 2008. A prospective study was conducted over a period of 1 year with all the new patients with a clinical diagnosis of lichen planus being included in the study.

1. Incidence of lichen planus in our study was 1.13% among the new patients attending skin OPD.
2. Lichen planus is mainly a disease of middle age with most of the cases in 20 to 39 years age group, paediatric cases are seen rarely. Lichen planus appears to be slightly more common among females.
3. Lichen planus is pruritic in most of the cases but in few cases there may be no symptoms.

Key words: Skin, Disease, Lichen.

Introduction

Lichen planus is a common, idiopathic, inflammatory condition involving the skin, mucous membranes, hair and nail. Lichen planus is characterized by violaceous, scaly, flat-topped, polygonal papules that favour the extremities particularly flexor aspects of the wrists & legs. Lichen planus can also involve oral and genital mucous membranes.

Lichen planus constitutes about 1% of the patients in dermatology OPD. Lichen planus is prevalent all over world with varying incidence. It affects all races and is concentrated in the age group between 30-70 years. Childhood lichen planus is relatively rare with 2-3% of all lichen planus cases occurring below the age of 20 years. The incidence as well as clinical type of lichen planus changes according to geographical areas. There have been varying reports about the sexual predilection of lichen planus with some studies suggesting that it is slightly more common in females. In India various studies have found incidence to be around 0.8% of the dermatology patients. Most of these studies have been done in northern India with lack of data regarding epidemiology of lichen planus from southern India. This justifies the need for this study to describe the pattern of lichen planus in Southern India. We also attempt to study histological features in few cases of various clinical types of lichen planus.

Etiopathogenesis of lichen planus is poorly understood. Lichen planus is thought to be an immunologically mediated disorder. Lichen planus has been associated with a variety of conditions like viral infections, autoimmune diseases, medications, vaccinations etc. It has been suggested as an abnormal T-cell response against an unknown antigen on epidermal cell.

There have been studies associating lichen planus with several systemic diseases like diabetes, hepatitis C infection, liver diseases, myasthenia gravis, ulcerative colitis, serum immunoglobulin abnormalities etc. But none of the associations have been proved conclusively. Lichen planus has been

shown to be associated with several cutaneous disorders like alopecia areata, vitiligo etc but again the association has not been conclusively proved.

Aims & Objective

1. To calculate incidence of lichen planus among patients attending skin OPD.
2. To study age and sex distribution of lichen planus.
3. To study distribution of lichen planus on different parts of body.

Material and Methods

The study was conducted in the out patient department of Dermatology and Venereology at Image hospitals, Ameerpet, Hyderabad on patients with lichen planus. The duration of the study period was from March 2007 to February 2008. A prospective study was conducted over a period of 1 year with all the new patients with a clinical diagnosis of lichen planus being included in the study. Following inclusion and exclusion criteria were used

Inclusion criteria

1. New patients of all age groups and both sex with a clinical diagnosis of lichen planus
2. Patients with all clinical types of lichen planus

Exclusion criteria

1. Old patients of lichen planus on follow-up

Observations

The present study was carried out in the department of Dermatology and Venereology, Image Hospitals, Ameerpet, Hyderabad, from March 2007 to Feb 2008. During course of 1 year prospective study there were 92 new patients with a diagnosis of lichen planus among 8168 new patients who attended the skin OPD. So, the incidence of lichen planus was 1.13% among the patients attending skin OPD. Most of the cases were registered from the month of March to October.

Age Distribution

Out of the 92 patients, the youngest patient was 6 years old and the oldest was 71 years.

Out of 92 patients, 12 (13.04%) cases were in 0 to 19 years age group with 7 of them being females & 5 being males. 42 (45.65%) cases were in 20 to 39

years age group with 26 being females & 16 being males. 31 (33.69%) cases were in 40 to 59 years age group with 17 of them being females & 14 being males. 7 (7.61%) cases were above 60 years of age with 4 being female & 3 being males. 5 (5.43%) patients were in the paediatric age group i.e under 12 years of age.

TABLE 1: AGE DISTRIBUTION

Age Group	Female	Male	Total	Percent
0 to 19	7	5	12	13.04
20 to 39	26	16	42	45.65
40 to 59	17	14	31	33.69
> 60	4	3	7	7.61
	54	38	92	100

In our study lichen planus was more common in 20-39 year age group. The mean age & standard deviation in our study was 37.33 ± 15.19 years.

Sex Incidence

Among the 92 patients, there were 54 (58.7%) female patients and 38 (41.3%) male patients. The

male: female ratio was 1:1.42. Mean age for female patients was 36.63 ± 14.19 years. The mean age for male patients was 38.32 ± 16.64 years.

TABLE 2: SEX DISTRIBUTION

SEX	No of Patients	Percentage	Mean Age	Std.Dev.
Female	54	58.7	36.63	14.19
Male	38	41.3	38.32	16.64
Total	92	100	37.33	15.19

In our study lichen planus was seen slightly more commonly among females.

Nature of Symptoms

In our study, 76 (82.61%) cases had itching, while 2 (2.17%) had burning sensation & 14 (15.22%) cases had no symptoms. Out of 92 patients, 18

patients complained of disturbance of sleep because of itching.

Most of the cases in our study were symptomatic & they had itching as the commonest symptom.

TABLE 3: NATURE OF SYMPTOMS

Nature of Complaints	Female	Male	Total	Percent
Itching	46	30	76	82.61
Burning sensation	1	1	2	2.17
No Symptoms	7	7	14	15.22
Total	54	38	92	100

Duration of Disease

In our study, duration of disease varied from 1 month to a maximum of 24 months. 50 (54.35%) patients had duration of disease between 0 to 3 months, with 32 being females and 18 being males. 25 (27.17%) patients had duration of disease between 4 to 6 months, with 14 being females and

11 being males. 5 (5.43%) patients had duration of disease between 7 to 9 months, with 2 being female and 3 being male. 10 (10.87%) patients had duration of disease between 10 to 12 months, with 5 being females & 5 being males. 2 (2.17%) patients had duration of disease > than 12 months, with 1 being female & 1 being male.

TABLE 4: DURATION OF DISEASE

Duration of Disease	Female	Male	Total	Percent
0 to 3	32	18	50	54.35
4 to 6	14	11	25	27.17
7 to 9	2	3	5	5.43
10 to 12	5	5	10	10.87
> 12	1	1	2	2.17
	54	38	92	100

In our study the majority of patients had duration of disease between 0 to 3 months. The mean duration of disease was 4.69 months.

Past history of similar disease was seen 16 (17.39%) patients out of which 12 were females and 4 were males. 76 patients didn't give history of similar disease in the past.

Past History of Similar Disease

TABLE 5: PAST HISTORY OF SIMILAR DISEASE

PAST HISTORY OF SIMILAR DISEASE	Female	Male	Total	Percent
No	42	34	76	82.61
Yes	12	4	16	17.39
	54	38	92	100

Family History of Lichen Planus

Family history of lichen planus was seen in 1 female patient, she gave history of similar disease in her mother and her younger brother.

Site of Onset

Site of onset was analysed in all the 92 patients. 64 (69.56%) patients had onset on lower limb with 35 being females and 29 being males. 17 (18.48%)

patients had onset on upper limb with 13 being females and 4 being males. 5 (5.43%) patients had onset on trunk with 4 being females and 1 being male. 3 (3.26%) patients had onset on face with 1 being female and 2 being male. 1 (1.09%) male patients each had onset on scalp, glans penis and oral mucosa. 1 female patient had onset on sole

TABLE 6: SITE OF ONSET

Site of Onset	Female	Male	Total	Percent
Lower limb	35	29	64	69.56
Upper limb	13	4	17	18.48
Trunk	4	1	5	5.43
Face	1	2	3	3.26
Scalp	0	1	1	1.09
Oral	0	1	1	1.09
Sole	1	0	1	1.09
Glans Penis	0	1	1	1.09
	54	38	92	100

Most common site of onset in our study was lower limb seen in 64 patients. The next common site of onset was on upper limb seen in 17 patients.

Morphology of Lesion

Morphology of lesion was studied in all the patients. In our study, out of 92 patients, 44 patients had violaceous papules (VP) with 30 of them being females & 14 being males. 16 patients had a combination of violaceous papules & plaques (VP & P) with 9 of them being females & 7 being males. 13 patients had a combination of verrucous violaceous papules & plaques (VeVP & P) with 6 of them being female & 7 being males. 11 patients had a combination of violaceous papules &

macules/patches (VP & VM) with 6 being female & 5 being males. 3 patients had violaceous macules/patches (VM) with 1 being female & 2 being males. 2 (2.17%) patients had violaceous papules with hyperkeratosis and fissuring on palms/soles. 1 patient each had violaceous follicular papules (VFP), violaceous papules with bullous lesions (VP & B).

In our study, majority of the cases presented with violaceous papules. The next common morphology of the lesion was violaceous papules and plaques.

TABLE 7: MORPHOLOGY OF LESIONS

Morphology of the lesions	Female	Male	Total	Percent
Violaceous papules (VP)	30	14	44	47.83
Violaceous papules & Plaques (VP & P)	9	7	16	17.39
Verrucous violaceous papules & plaques (VeVP & P)	6	7	13	14.13
Violaceous papules & macules/Patches (VP&VM)	6	5	11	11.97
Violaceous macules/Patches (VM)	1	2	3	3.26
Violaceous papules with hyperkeratosis & fissuring on palms/soles	1	1	2	2.17
Violaceous papules with bullous (VP & B)	1	0	1	1.09
Violaceous follicular papules (VFP)	0	1	1	1.09

Distribution of Lesions

Distribution of lesions was analysed in all the cases. In our study, most of the cases had generalized lesions with involvement of more than one body sites. 61 (66.3%) patients had lesions on lower limbs, 55 (59.78%) patients had lesions on upper

limbs, 42 (45.65%) patients had lesions on trunk, 9 (9.78%) patients had lesions on face, 3 (3.26%) patients had lesions on V-neck, 3 (3.26%) patients had lesions on scalp and 3 (3.26%) patients had lesions on palms & soles. 1 (1.09%) male patient had lichen planus on glans penis.

TABLE 8: DISTRIBUTION OF LESIONS

Distribution of Lesions	Female	Male	No. of Patients	Percent
Lower limbs	37	24	61	66.30
Upper Limbs	35	20	55	59.78
Trunk	28	14	42	45.65
Face	3	6	9	9.78
V-Neck	2	1	3	3.26
Scalp	0	3	3	3.26
Palms & sole	2	1	3	3.26
Glans penis	0	1	1	1.09

In our study the lesions were generalized in distribution in most of the cases with lesions being seen most commonly seen on lower limbs, followed by upper limbs. In case of upper limbs the lesions were predominantly seen on the flexor side of the forearms.

Discussion

Lichen planus is an idiopathic inflammatory skin condition affecting skin, mucous membrane, hair & nails. Clinically it presents as multiple, flat-topped violaceous papules that then tend to favour the extremities. Lichen planus is considered a T-cell mediated immune response against an epidermal antigen. There are not many studies on clinicoepidemiological aspect of lichen planus from southern India, particularly Andhra Pradesh, justifying the need for this study.

This study was conducted at department of dermatology & venereology, Image hospitals, Ameerpet, Hyderabad from March 2007 to February 2008. It was a prospective study in which we included all the new cases of lichen planus attending skin OPD over the study period. We evaluated the various clinico-epidemiological aspects of lichen planus.

There were 92 cases of clinically diagnosed lichen planus over a period of 1 year study period. Biopsy was done in 25 cases of various clinical types to study the histopathological features in different clinical types of lichen planus.

Incidence

In our study there were 92 cases of clinically diagnosed lichen planus among 8168 cases that attended the skin OPD over 1 year study period. So, the incidence was 1.13% among the patients attending skin OPD.

The incidence found in our study was slightly higher compared to findings of Kacchawa Dilip et al¹ & O P Singh et al² who found it to be 0.8% and 0.76% respectively. A study by VN Sehgal et al³ found it to be 1.4%.

This slightly high incidence of lichen planus in our study may be because our hospital is a specialist centre.

In our study most of the cases were registered between March and October. This finding correlates with Kacchawa Dilip et al¹ who found lichen planus to be common between February to September.

Sex Distribution

In our study, 58.7% cases were female & 41.3% were males. Male:Female ratio was 1:1.42. We found that the incidence of lichen planus was

slightly more common among females, this is in correlation with Salah A Abdallat et al⁴, Garg Vijay kumar et al⁵ & Nangia Anita et al⁶ who found M: F to be 1:1.1, 1:1.3 & 1:1.77 respectively. While O P Singh et al², Tag-El-Din Anbar⁷ & Kacchawa Dilip et al¹ found it to be more common among males. Bhattacharya et al⁹ found equal incidence among males & females.

There is no consistency in the literature regarding the preponderance of sex in lichen planus.

Age Distribution

In our study, the youngest patient was 6 years old & oldest patient was 71 year old. Mean age was 37.33 ± 15.19 years. This in correlation with Salah A Abdallat et al⁴ who found the mean age to be 39.7 years. Tag-El-Din-Anbar et al⁷ found mean age to be 41.36 years.

Common age group affected was 20-39 years in which 45.65% cases were seen. This is in correlation with Kacchawa Dilip et al¹ & O P Singh et al² who found 46.93% & 53.74% cases in 20-39 years age group.

In our study we found 5.43% cases to be below 12 years of age. Lichen planus is rare in childhood with Sanjeev Handa et al⁹ reporting its seen in 0.6% of new total dermatology patients.

So lichen planus is mainly a disease of middle age with rare occurrence of paediatric cases.

Nature of Symptoms

In our study, most of the patients were symptomatic with itching being the predominant symptom seen in 82.6% cases. 15.22% cases had no symptoms.

Salah A Abdallat et al⁴, Bhattacharya et al¹⁰ & Kacchawa Dilip et al¹ found pruritus as a predominant symptom in 83.6%, 79.3% & 83.6% cases respectively. O P Singh et al² found pruritus as the most common symptom in there study.

Burning sensation was seen in 2.17% cases among them one case had actinic lichen planus & another

had classical lichen planus. O P Singh et al² found burning sensation in patients of actinic lichen planus.

Lichen planus is most often symptomatic with itching being the predominant symptom in most of the cases. In some of our cases itching was so severe that sleep was disturbed.

Duration of Disease

In our study, the duration of disease varied from 1 month to 2 years. Mean duration of disease was 4.69 months. 54.35% of cases had duration of disease between 0 to 3 months. Our findings correlate with Garg Vijay kumar et al⁵ who found most patients had 1-2 month as duration of disease.

Past History of Lichen Planus

In Our study, past history of lichen planus was obtained in 17.39% of cases. In a study by Bhattacharya et al¹⁰ past history of similar disease was found in 10.3% cases.

Lichen planus is a disease that has a prolonged course and there are likely to be recurrences.

Family History

In our study, 1.09% of patient gave family history of similar disease. Kacchawa Dilip et al¹ found familial lichen planus in 2.13% cases. No family history was found in studies by Garg Vijay Kumar⁵, Salah A Abdallat⁴ & Tag-Al Din Anbar et al.²

There is no consistency in literature with regard to the familial incidence of lichen planus.

Site of Onset

In our study, lower limb was the most common site of onset with 69.56% of cases having onset from lower limbs. Our findings were in correlation with Salah A Abdallat et al⁴ who found common site of onset to be lower limb. Bhattacharya et al¹⁰ & Tag-El-Din Anbar et al⁷ found most common site of onset to be limbs in 55.6% & 56% cases. So, lichen planus commonly has onset on lower limbs.

Morphology of Lesions

In our study, 47.83% cases had violaceous papules & 17.39% cases had violaceous papules with plaques. Nagia Anita et al¹¹ found violaceous papules in 60% cases & violaceous papules with plaques in 20% cases. Garg Vijay Kumar et al⁵ found 72% papular & 16% papules with plaques in there study. So our findings correlate with these studies.

Lichen planus presents predominantly as papular lesions that have a predilection to occur on extremities, more so the lower limbs.

Distribution of Lesions

In our study, 52.17% cases had generalized lesions with involvement of multiple body sites. Garg Vijay Kumar et al⁵ found multiple site of involvement in 32% cases.

In our study, lesions were predominantly seen on lower limbs with 66.3% cases having it followed by 60.86% cases who had lesions on upper limbs. Our findings correlate with Kacchawa Dilip et al¹, Salah A Abdallat et al⁴ & Garg Vijay Kumar et al⁵ found lower limb involvement in 61.9%, 45.5% & 38% cases respectively. O P Singh et al⁷ also found lower limb as a common site of involvement.

Lesions of lichen planus are distributed mainly on extremities more so on lower limbs. In the upper limbs lesions tend to predominantly involve the flexor aspect of forearms.

Summary

Incidence of lichen planus in our study was 1.13% among the new patients attending skin OPD. Lichen planus is mainly a disease of middle age with most of the cases in 20 to 39 years age group, paediatric cases are seen rarely. Lichen planus appears to be slightly more common among females. Lichen planus is pruritic in most of the cases but in few cases there may be no symptoms. Lichen planus has onset most commonly on the lower limbs. Lesions are distributed mainly on extremities, with lower

limbs affected more commonly. In upper limbs, lesions favour flexor aspect of forearm. Classical lichen planus is the most common clinical variant of lichen planus, followed by hypertrophic lichen planus and linear lichen planus. Hypertrophic lichen planus was associated with longer duration of disease and severe pruritus.

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