

## Oral lichen planus-a clinicopathological survey

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**Abstract:** Oral lichen planus is chronic inflammatory disease with different clinical presentations that can be classified as reticular, erosive or atrophic. . Although a number of epidemiological studies have been carried out in the western countries, very little is known about its nature in the Kerala population. Hence a survey was undertaken to assess the epidemiological status of oral lichen planus among 25461 patients attending the Department of OMR ,G..D.C, Trivandrum, by conducting a descriptive study over a period of one year .Statistical analysis was performed with SPSS statistical package. Out of the 25461 patients screened, 180 patients were diagnosed as having oral lichen planus The incidence was found to be 0.71%. The mean age was found to be 44.82. Only 3.9% were under the age group of 20 years. Female predominance was noted with a male to female ratio of 0.42:1. Most common clinical presentation was the reticular type (78.3%), followed by erosive and atrophic (2.2% and 0.6% respectively). 18.9% of patients presented with combination of different types. Buccal mucosa was most commonly affected (85.6%), followed by tongue(43.9%) ,labial mucosa and gingiva. Majority of the patients (67.8%) had noticed burning sensation always. Dysplasia was noted in 3 patients

**Key words:** ,clinical characteristics, dysplasia, incidence ,Oral lichen planus, , Predisposing factors.

Date of Submission: 21-01-2018

Date of acceptance: 07-02-2018

### I. Introduction

Oral lichen planus is a chronic inflammatory disease of immune origin whose etiopathogenesis has not been completely disclosed. Factors such as stress, genetic background, certain dental materials, several drugs, infectious agents or an association with immune disorders have been involved <sup>12</sup>The age of onset is usually between 3<sup>rd</sup> and 6<sup>th</sup> decade of life and it is commonly seen in Asian population<sup>3,4</sup>. Although the true prevalence is unknown, various studies suggest an incidence of 0.5 to 2 % in, the general population..<sup>1,2</sup> Oral lesions of lichen planus either accompany, precede or follow the cutaneous lesions or it may also appear isolated on the mucous membrane .The factors that aggravate the disease include stress, smoking and spicy foods.<sup>8</sup>

OLP is classified clinically into three reticular or hyperkeratotic, atrophic or erythematous and erosive (ulcerations and bullae) forms<sup>6</sup>. The reticular form characterized by Wickham's Stria is the most common form. Buccal mucosa, tongue, and gingiva are commonly involved with bilateral and symmetrical presentation .Many cases of O LP are asymptomatic and discovered only upon routine oral examination. Roughly two thirds of patients report oral discomfort upon presentation of their disease<sup>8</sup>. O LP occupies an important place in dental practice since recall system of OLP has been suggested to facilitate the early diagnosis of oral cancer with the aim of reducing morbidity and mortality from oral cancer arising in these patients <sup>5,7,8, 9</sup>

The purpose of this study was to assess the percentage of occurrence of different type of Oral Lichen Planus lesion ,to determine its distribution according to the age , gender, locations.and symptoms and to find out degree of dysplasia in O L P in a selected population.

## II. Methodology

The patients attending to the outpatient clinic of Oral Medicine Department, Govt. Dental College, Trivandrum during the period were taken as the sample population. They were screened for non-scrapable white striated lesion in the oral mucosa. After getting informed consent, the patients selected for study were examined under excellent illumination. A thorough history including patient characteristics (age, gender, socio-economic status), duration of lesions, oral symptoms, severity and duration of the symptoms, aggravating factors, sites involved, extra oral involvement, previous medical history, medication, dental history and other relevant factors were obtained with the help of a questionnaire.

The diagnostic criteria proposed by van der Meij *et al.* in 2003 based on the WHO definition of OLP were used to identify the cases of OLP. These included clinical as well as histopathological features. The following clinical criteria for clinical diagnosis of oral lichen planus were used; white pin head sized papules or distinct gray-white striae, forming linear, reticular or annular patterns or alternatively white plaque like lesions with papules or striae at the margins. Atrophies, ulcerations and bulla isolated or in combination were diagnosed as lichen planus only if these signs were concomitant with Wickham's striae. Atrophy of the tongue papillae is also included if it diffusely delineated with the presence of lichen planus lesions elsewhere in the oral mucosa. In this survey lesions are clinically divided into 3 types reticular, atrophic (erythematous) and erosive (ulceration and bullae)<sup>5</sup>. After routine blood examination, incisional biopsies were done under local anaesthesia to confirm the diagnosis. The biopsies were obtained from hyperkeratotic or erythematous lesions and from the edge of the lesions in case of erosions or ulcerations. The specimen were sent for histopathologic examination to the department of oral pathology after getting prior permission. The histopathologic criteria include overlying keratinisation, a dense band like layer of lymphocytic infiltrate sub epithelially, saw tooth appearance of rete pegs and liquefaction degeneration of basal cell layer, The findings including presence of dysplasia and any atypical feature were also noted. A thorough systemic examination was conducted by the physician to confirm the presence of concomitant systemic disease.

All data were entered into a pre-structured, close-ended proforma. The data were analyzed using SPSS software version 10 to calculate the mean age, frequencies of clinical types, sites affected and aggravating factors.

## III. Result

Out of the 25461 patients screened 180 patients were clinically and histopathologically diagnosed to be as having oral lichen planus. (53 males and 127 females) The incidence was found to be 0.71%. The mean age of the patients in this study was found to be 44.82 with a standard deviation of 14.02 (Male: 50.96 ±13.43, Female: 42.57 ±13.53). Majority of the patients (73.3%) were middle aged (30 to 58 years "Fig1.". A definite female predominance was observed (Male to female ratio -- 0.42:1.) "Fig2." Only 3 pediatric patients were there (3 years, 9 years and 11 years.) .

The patients had various symptoms like roughness of mucosa to burning sensation while having spicy food or of continuous type, severe pain, altered taste, discolouration of mucosa and sometimes dryness of mucosa also "Fig3.". Majority of the patients (67.8%) had noticed burning sensation present always. Among these 92 patients had burning sensation while having hot or spicy food.

According to the clinical appearance the lesions were divided into Reticular, Erosive and Atrophic. The most predominant lesions were Reticular (78.3%). The characteristic findings noticed were interlacing white lines forming a lattice work or an annular arrangement. Sometimes the Reticular elements were elevated from the mucosa. A combination of striae and white papules with violaceous hue were seen in most of the patients. Plaque type lesions were seen on the tongue and buccal mucosa. "Fig4."

2.2% of the patients had Erosive lesion which were irregular in shape and covered with fibrous plaque or pseudo membrane. The periphery of the lesion were surrounded by finely radiating striae. This lesion were associated with severe pain.

The most predominant lesions were reticular type (78.3%) followed by erosive (2.2%) and atrophic variety (0.6%). Buccal mucosa was the most frequent site of involvement (85.6%) where bilateral distribution were seen in 110 patients (75.6%). Tongue was the second most frequent site (43.9%) followed by labial mucosa (65 patients), gingival (10%), palate (4.4%) and retromolar area (2.8%), commissure and floor of the mouth (0.6%). Pigmentation was seen in 75.6% of patients. Oral lichen planus had no association with either deleterious habits (smoking, tobacco chewing or alcoholism) or systemic diseases (diabetes and hypertension). 53.9% of patients had emotional stress. Local irritants were present in only 0.5% and 94.4% of patients had no lesions in contact with restorations, resins/alloys.

Dysplasia were present only in 3 patients which was in erosive lesions of tongue and palate. Figure 5 Even though it was statistically non-significant its importance lies in the premalignant risk of oral lichen planus. Frequent examination and regular follow-up every 2 to 3 months for the oral lichen planus patients with dysplasia had been suggested.

#### IV. Discussion

The present study attempted to elucidate the epidemiological and clinical characteristics of OLP patients. The data presented in this study are consistent with data from previous OLP studies in regard to lesion location, its clinical type, disease, symptoms.

Although true prevalence is unknown, varying prevalence rate of oral lichen planus have been reported in different parts of the world which ranges from 0.1 to 2.4%. , the prevalence of oral lichen planus may show a significant variation between different studies, because a significant proportion of the patients are asymptomatic and do not seek medical help. Various studies suggest an incidence of 1 to 2% in general population. In the present study the incidence rate was 0.17%. Compared to other studies, the value is low and that may be due to the small size of selected sample size and the short duration of the study.<sup>10,11,12</sup>

In this study OLP is seen in middle-aged patients. The mean age of the patients in this study was found to be 44.82 with a standard deviation of 14.02. A definite female predominance was observed (Male to female ratio was 0.42:1.). The female predominance noted in this study is in agreement with various other reports.<sup>3,4,16,17</sup> There was only 3 patients below the age of 15 years in the present study, a boy and two girls. A number of workers have also noted a lower incidence in the younger age group.<sup>2,15</sup> Although childhood OLP is very rare, early recognition is very important to make appropriate treatment and relieve symptoms of little children.

Majority of the patients (67.8%) had burning sensation which was either present always (16.7%) or while having hot or spicy food (51.1%). This shows that irritation with the spicy food caused an increase of symptoms. These findings match very well with the study by Eisen, in which most of the patients complained of these symptoms.<sup>5</sup>

In the present study the most predominant lesions were Reticular type (78.3%) Patients with reticular lesions were symptomatic. This does not agree with the studies of some previous studies<sup>20</sup>. Erosive lesion was observed in (2.2%) associated with severe pain. Atrophic variety was the least (0.6%) and 18.9% of patients presented with combination different types of oral lichen planus. A number of studies show a higher percentage of occurrence of Erosive forms. This may be due to the referral bias of considering only symptomatic cases.

Buccal mucosa was the most frequent site of involvement, 154 patients had lesion on buccal mucosa(85.6%) . followed by Tongue labial mucosa gingiva, palate, commissure retromolar area and floor of the mouth. The higher involvement of buccal mucosa in oral lichen planus in this study is similar to that reported in previous studies. In Eisen and others buccal mucosa was the most common site followed by tongue, gingiva and lower lip. The discrepancy may be due to racial and geographical differences and limited sample of this study. Multiple oral sites involvement (56,1%) was also common. Buccal mucosa concomitant gingivae were the most common multiple oral sites. Isolated lesions located on gingiva, palate, and mouth floor were rare, whereas these sites usually concomitant buccal mucosa or tongue were affected in multiple oral sites. In buccal mucosa the bilateral distribution were seen in 110 patients(75.6%) and most of the lesions were reticular type(86.4%). This is consistent with many previous studies.<sup>5,6,19</sup>

In Majority of the patients(164) pigmentation of oral mucosa was seen as diffuse or in patches, ranged from brown to black in color and seen especially on the buccal mucosa. Other less affected sites were adjacent gingivae, lateral and dorsal aspect of tongue and hard palate. The higher frequency of pigmentation in this study could be related to racial factors, skin type and habit of chewing gutakha, tobacco, and betelnut and leaves by the local population. The similar findings were observed in some Indian studies.<sup>22</sup>

55.5% of the patients involved in the study didn't have any systemic disease. A small number of patients had associated diabetes(2.4%), and hypertension(13.3%). Only 12.3% of the patients were found to be with other diseases. The incidence of these systemic diseases was lower than the previous reports.<sup>3,17</sup> This indicates systemic diseases may not have a role in the pathogenesis of OLP. Although the correlation of OLP with diabetes mellitus has been suggested, [our present study did not support this observation. The reason may be a small sample size and younger patients in this study<sup>3,16,17,22</sup>

It was found that there was no agreement on the influence of tobacco habit on OLP. 94.4% of patients in this study did not have any form of habits. These findings are an agreement with the general observations.

The different factors reportedly aggravated disease in studied patients. These included stress, spicy foods and poor oral hygiene. In the studied population; 53.9% of patients had a history of emotional stress or had exacerbation of symptoms during emotional disturbances or psychological stress associated with situations like family problems, death of relative or loss job etc. An observation reported by others also. Indeed patients with OLP exhibit greater degree of anxiety, depression and other psychological disturbances. The pain or discomfort caused by lesions is not the only factor for their anxiety. More concerning is the fear for development of malignancy and contagious nature of the lesions.<sup>1,5,18</sup>

Most of the patients in this study had typical histopathological lesions consistent with oral lichen planus. Of these patients dysplasia were present in 1.7%. It was seen in Erosive lesions of tongue and palate.

Malignant transformation was not observed, in our study. These findings are consistent with many previous studies. However, long-term follow-up of disease is needed for proper evaluation for malignant potential.<sup>8,9,19.</sup>

### V. Conclusion

In conclusion, the present study elucidated the epidemiological and clinical characteristics of patients with OLP in a hospital based population in India. Most of the characteristics are consistent with previous studies while few are not in agreement with those studies. It is difficult to attain any definite conclusion with the result obtained from the study because of this small sample size, short period of study and absence of review but the results can be taken as the reference study for further prospective studies since recall system of all patients with oral lichen planus have been recommended.

### VI. Figures And Tables

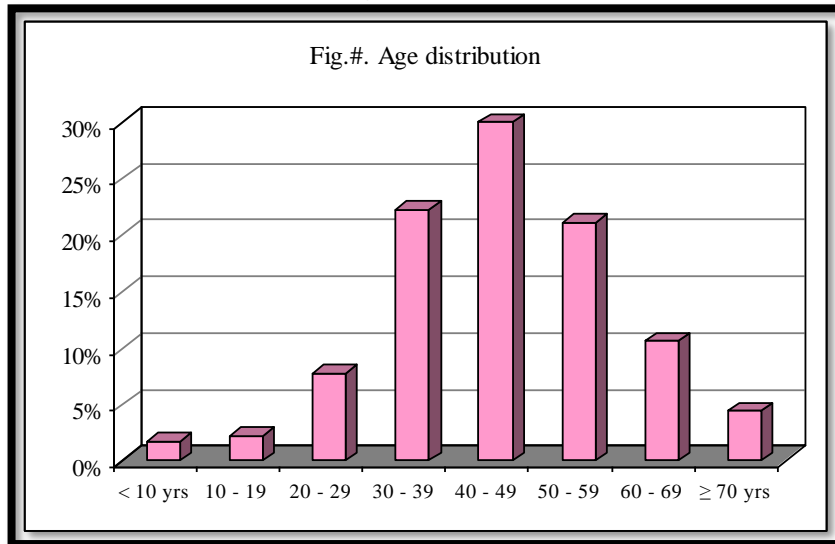


Figure 1 Age Distribution

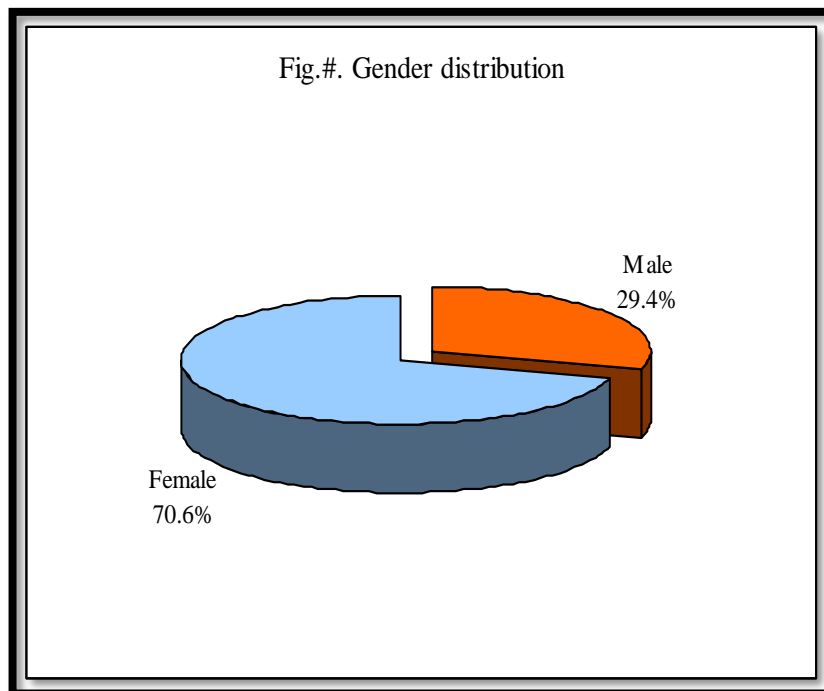
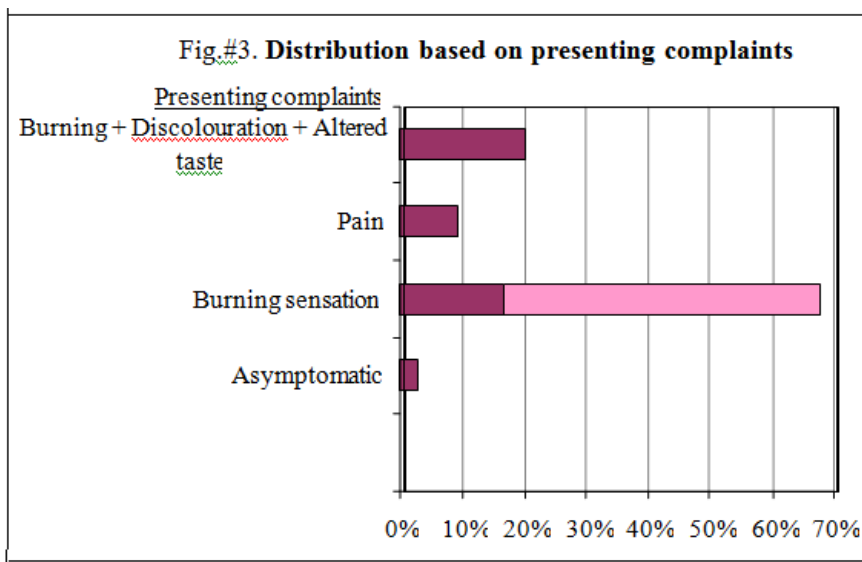
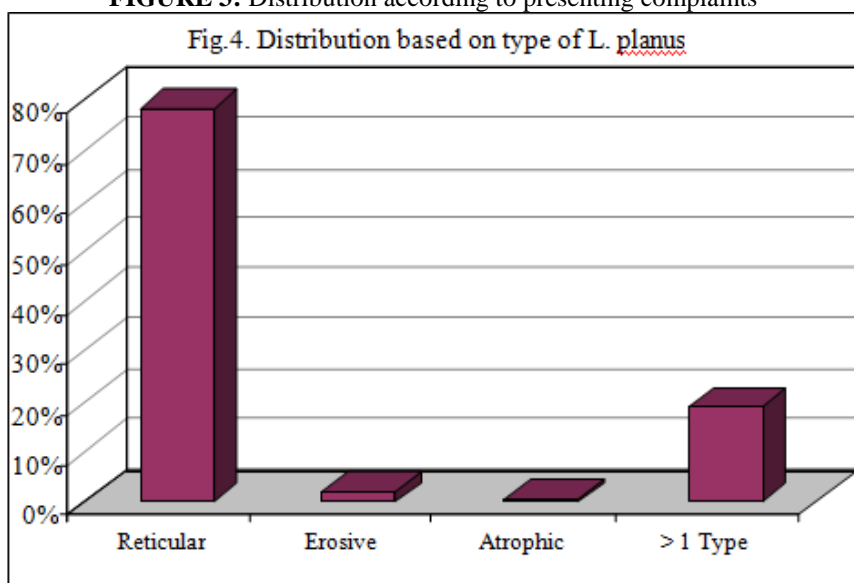


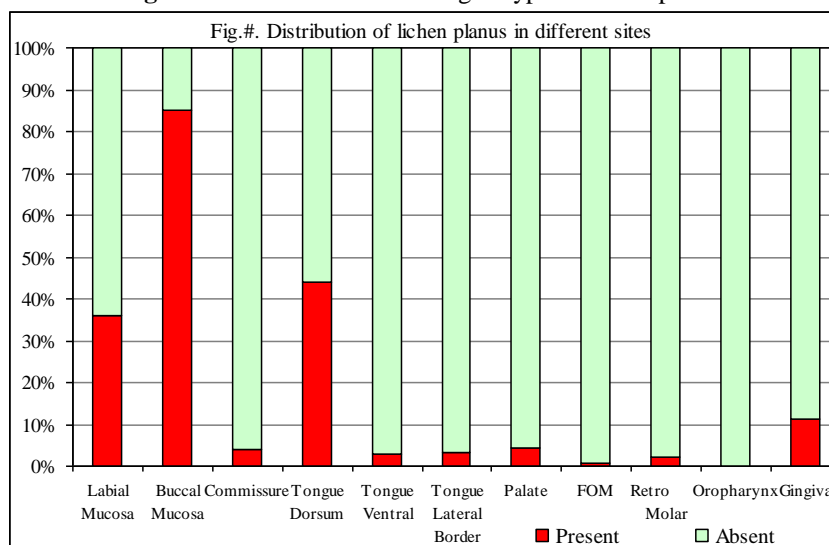
Figure 2- Gender Distribution



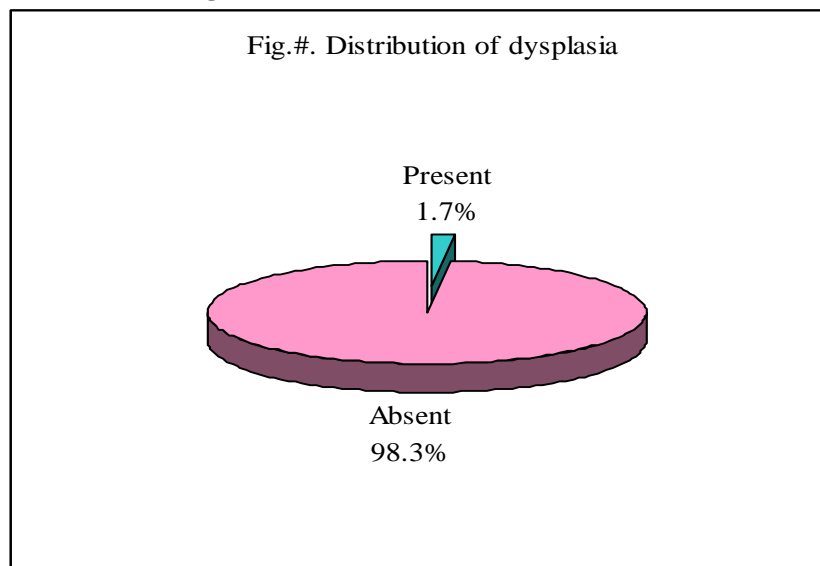
**FIGURE 3:** Distribution according to presenting complaints



**Figure 4:** Distribution according to type of lichen planus



**FIGURE 4: Distribution according to site**



**FIGURE 4 Distribution of Dysplasia**

### Acknowledgements

I am thankful to staff of department of Oral Pathology for their kind support

**Source of Support:** Nil

**Conflict of Interest:** None declared

**Ethical approval:** The study was approved by the Institutional Ethics Committee

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Dr .Arya S Nalin "Oral lichen planus-a clinicopathological survey". IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 2, 2018, pp. 25-31.