



## EVALUATION OF ANXIETY LEVELS AND ITS ASSOCIATION WITH ORAL LICHEN PLANUS PATIENTS IN KANPUR CITY

**Dr. Rohan Sachdev** Junior Resident, Rama Dental College, Kanpur

**Dr. Kriti Garg\*** Reader, Dept of Oral Medicine & Radiology, Rama Dental College, Kanpur  
\*Corresponding Author

**Dr. Vishal Mehrotra** Prof & HOD, Dept of Oral Medicine & Radiology, Rama Dental College, Kanpur

**ABSTRACT** **Aim:** Lichen planus is a chronic inflammatory mucocutaneous disorder that affects the skin, mucous membrane, nails and hair affecting all races of age 30-60 years. The present study is conducted to evaluate anxiety levels in oral lichen planus patients.

**Material & Method:** A cross sectional questionnaire study was carried out to evaluate the anxiety levels and its association with lichen planus patients. To evaluate the correlation between anxiety level and oral lichen planus total of 220 patients were taken, among them 110 were considered as study group with oral lichen planus sign & symptoms and 110 patients were enrolled as control group. Evaluation of patients was performed by using Hamilton Anxiety Scale.

**Results:** In the present study females were found to be more affected as compare to males and patients above 30 years of age were found to be more affected with increased anxiety levels.

**Conclusion:** We have found that anxiety levels were high in oral lichen planus patients and dental practitioner may consider stress management therapy in counseling the patients.

**KEYWORDS :** Anxiety, oral, lichen planus, stress

### Introduction

Lichen planus is a chronic inflammatory mucocutaneous disorder that affects the skin, mucous membrane, nails and hair. Lichen planus occurs in all races in age group 30-60 years with female dominance. 1 Erasmus Wilson (1869) was 1st to describe the disease as lichen planus and the term is derived from a Greek word "Lichen" which means a tree moss or algae and a Latin word "Planus" means flat. 2 Lichen planus most commonly affects the buccal mucosa, tongue, gingiva, labial mucosa and vermilion border of lower lip. 3 Although the cause is not known still T-mediated autoimmune phenomenon is involved in pathogenesis along with other etiologic factors such as genetics, dental materials, habits, trauma, food allergies, drugs, infectious disease, diabetes and immunodeficiency have been implicated and psychosomatic stressors have been considered as important factors. 4 Patients with oral lichen planus often complain the onset and aggravation of oral symptoms get increased during increased level of stress and anxiety. Hence this study endeavors to determine the relation between anxiety and oral lichen planus in Kanpur city.

### Material & Methods

A cross sectional questionnaire study was carried out to evaluate the anxiety levels and its association with lichen planus patients. To evaluate the correlation between anxiety level and oral lichen planus total of 220 patients were taken with inclusion criteria of non smokers and patients with sign and symptoms of oral lichen planus. Patients who were histopathologically diagnosed with lesion other than oral lichen planus, taking long term corticosteroids and with history of systemic disease, smoking were excluded from the study. Evaluation of patients was performed by using Hamilton Anxiety Scale.

Out of 220 patients 110 were enrolled with sign and symptoms suggestive of oral lichen planus as study group and the control group comprised of 110 non smoker healthy patients who did not have any systemic disease and were on no long term steroids therapy.

The patients were comfortably seated in the dental chair and oral examination was carried out, after primary oral lichen planus diagnosis was established on the basis of clinical examination, patients were asked to fill the Hamilton Anxiety Rating Scale (HAS) questionnaire which enlists 14 items that is anxious mood, tension, fear, insomnia, difficulty in concentration, depressed mood, general somatic symptoms, genitor-urinary symptoms, other autonomic symptoms and behavior during the form filling. Each point is defined by a series of symptoms which is rated on a 5-point scale, ranging from 0 to 4 which were inferred as:

- 0-not present
- 1-mild

- 2-moderate
- 3-severe
- 4-disabling

The higher the points scored higher is the anxiety level. Afterwards an incisional biopsy was taken from the lesion area in patients with oral lichen planus. The oral lichen planus diagnosis was established through a composite of accepted clinical and histopathological characteristics for these 110 patients in study group. Further statistical analysis was done using SPSS (Statistical Package for Social Sciences) Version 15 Statistical Analysis Software. The values were represented in numbers, Mean and standard deviation. The level of significance (p-value) were used for analysis.

### Results

A total of 220 subjects were enrolled in the study. The study group comprised 110 subjects of oral lichen planus, 46 males and 64 females, age ranging from 20 years to 60 years, while the control group comprised of 110 healthy subjects, 50 males and 60 females from 20 years to 50 years.

Table-1 shows the distribution of subjects in the study. Out of 220 subjects enrolled for study, there were 110 subjects in the study group (50%) while the remaining 110 subjects in the control group (50%).

**Table -1 Distribution of subjects in the study**

S. No	Group	No of subjects	Percentage
1.	Study Group-Oral lichen planus patients	110	50
2.	Control Group- Normal healthy patients	110	50

Table-2 shows the gender distribution of the subjects in the study group and control group. In the study group there were 46 males (41.8%) and 64 females (58.2%) while in the control group there were 50 males (45.5%) and 60 females (54.5%). The number of females was higher than the males in both the study and the control group.

**Table -2 Gender distributions of subjects in both the groups**

S. No	Gender	Study (n=110)		Control (n=110)	
		No.	%	No.	%
1.	Males (n=96)	46	41.8	50	45.5
2.	Females (n=124)	64	58.2	60	54.5
	Total	110	100	110	100

p=0.701

Table -3 shows the distribution of age in the study group and the control group. Among the study group there were 46 subjects (41.8%) with age

≤30 years and 64 subjects (58.2%) with age ≥ 30 years. The mean age in study group was 40.58 ± 14.65years whereas the mean age was in control group was 33.07 ± 10.97years. The overall mean age was 36.83±13.42 years. The criteria for 30 years was taken as mean as it was the median age and in the present study there were more of subjects in the age of ≥ 30 years in the study group, difference between both groups was statistically significant.

**Table -3 Age distribution of subjects in both the groups**

S. No	Age Group	Study (n=110)		Control (n=110)	
		No.	%	No.	%
1.	≤ 30 Years	46	41.8	64	58.2
2.	≥30 Years	64	58.2	46	41.8
		110	100	110	100

P=0.086

Table-4 shows the comparison of mean anxiety levels in the study and the control group. The mean anxiety levels (HAS Score) in the study group is 14.91±3.21 units while in the control group the mean anxiety level is 6.27± 4.03 units. In the present study the mean anxiety level was greater in the study group which is statistically significant.

**Table-4 Comparison of Mean anxiety levels in both the groups**

S. No	Variable	Study (n=110)	Control (n=110)
1.	Mean	14.91	6.27
2.	SD	3.21	4.03
3.	Range	8.0-22.0	0-14
	p	<0.001	

Table -5 shows the association of anxiety scores with demographic variables. It was seen that there was no significant difference in mean anxiety scores between two age categories and two genders in either of the two groups (p>0.05). However, for each age or gender category the mean anxiety level in study group were seen to be significantly higher in study group as compared to control group (p<0.001).

**Table -5 Association of Anxiety scores with demographic variables**

S.No	Variable	Study		Control		"p"
		n	Mean ±SD	n	Mean ±SD	
1.	Age					
	≤30 Years	46	14.83±3.23	64	6.28±4.44	<0.001
	≥30 years	62	14.97±3.25	46	6.26±3.47	<0.001
	Comparison between ≤30 years and ≥30 years	p=0.120		p=0.985		
2.	Gender					
	Males	46	15.09±2.98	50	6.64±4.07	<0.001
	Females	64	14.78±2.45	60	5.80±4.00	<0.001
	Comparison between ≤ years and ≥30 years	p=0.731		p=0.345		

**Discussion**

Lichen planus is chronic autoimmune inflammatory dermatologic diseases involving the oral cavity, with prevalence rates ranging from 0.5% to 2% in the general population. It frequently appears in patients in the age range from 30 to 70 years and women are more frequently affected.<sup>1</sup> Several studies have pointed out that patients with lichen planus were found to be in condition of stress and anxiety. It has been proposed that psychosomatic factors may be related to the oral lichen planus in the sense that patients may exhibit higher anxiety and psychological alterations. Such disorders could represent etiologic cofactors for oral lichen planus; contrarily the disease and its disorders could be responsible for the psychological problems.<sup>5</sup>

Numerous investigations have been carried out trying to identify and quantify the stress, anxiety and depression levels of these alterations in patients by means of diverse questionnaires such as the Anxiety Hospital and Depression (HAD) scale, Catell 16 PF, Hamilton Anxiety Scale, Spielberger State-Trait Anxiety Inventory, profile of mood states, Cornell Medical Index, etc.<sup>3</sup> Few studies have been conducted to explore the possibility of psycho-somatization in oral lichen planus

by evaluating the psychological personality profiles. The aim of this study was to evaluate the level of anxiety and to determine its association with oral lichen planus patients. In the present study a total of 220 subjects were enrolled, out of which the study group comprised of 110 subjects with oral lichen planus and the control group comprised of 110 healthy subjects. However, Koray et al<sup>5</sup> in their study enrolled 80 patients comprising of 40 study group and 40 normal healthy subjects as control group.

In the present study, the study group consisted of 64 females (58.2%) and 46 males with oral lichen planus with a mean age of 40.58±14.65years. Similar study was conducted by Koray et al<sup>5</sup> in which the study group consisted of 24 females and 16 males with a mean age of 35.17±12.67 years. Thus suggesting females are affected more and the mean age is almost similar in both studies.

In the present study the mean HAS score among the oral lichen planus patients was 14.91±3.21 units and in the control group 6.27±4.03units. The mean anxiety levels in the group were found to be significantly higher than in the control group. Vallejo GP et al<sup>6</sup> found the mean HAS score of 11.8±5.70 units among the oral lichen planus patients. However, Collel G et al<sup>7</sup> using HAS and Hamilton depression scale confirmed that patients with oral lichen planus had high scores in both tests whereas Koray et al<sup>5</sup> using Spielberger's state and trait anxiety inventory found mean levels of state anxiety to be 48.54±9.7 with the study group and 39.45±7.5 units in the control group while the mean values of trait anxiety were 49.77±13.02 in study group. Thus higher levels of anxiety were present in oral lichen planus patients as compared to the control patients.

Rojo-Moreno JL et al<sup>8</sup> used several psychometric test to analyze the psychological factors in oral lichen planus patients. Using Spielberger's state and trait anxiety inventory, anxiety state and anxiety trait were 56.58 and 58.05 respectively in oral lichen planus patients while in the control group it was 42.42 and 42.06 respectively and higher anxiety level was seen in the oral lichen planus patients than the control subjects. However, Chaudhary S<sup>9</sup> used general health questionnaire and Hospital Anxiety and Depression Scale to assess the anxiety levels, which came as 5.53 units in oral lichen planus patients which were higher as compared to control group (2.8units). Mean anxiety and depression scores were also higher in oral lichen planus group which was 5.8 and 4.1 respectively showing higher stress, anxiety and depression whereas Macleod<sup>10</sup> used general health questionnaire for psychological assessment of oral lichen planus patients, the mean value was 4.1±3.9 in study subjects and in control subjects 2.7±3.5 but statistically no significant difference was seen and found no greater anxiety among the oral lichen planus patients than the healthy patients. The present study showed higher anxiety level in oral lichen planus than control subjects which is consistent with Koray M et al<sup>5</sup>, Vallejo GP et al<sup>6</sup>, Collel G et al<sup>7</sup>, Rojo-Moreno JL et al<sup>8</sup> and Chaudhary S<sup>9</sup>. In the present study association of demographic variables with anxiety levels showed no significant difference in mean anxiety scores between two age categories and two genders in either of the two groups. However, for each age or gender category the mean anxiety levels in study group were seen to be higher in study group as compared to control group.

In the present study higher anxiety scores were seen in the oral lichen planus as compared to the healthy controls. Also HAS score ≥10.5 has been found to be significantly associated with oral lichen planus. Although there is no substantial evidence that oral lichen planus has any correlation with psychiatric disorder. Thus, the evaluation of anxiety levels which reflects the response to stress seems a promising parameter in investigation of oral lichen planus, so that the patient needs supportive psychological treatment with the conventional treatment methods.

**Conclusion**

Oral lichen planus is a multifactorial disease. Various etiological factors such as stress, anxiety, poor immunity etc may affect the pathogenesis of oral lichen planus. From the present study we found that anxiety levels were significantly higher in oral lichen planus patients. Psychological test and psychiatric examination can be used as an additional tool in treatment of oral lichen planus and dental practitioner may consider the benefits of stress management counseling as well in managing the patients with lichen planus and to consider referring patient to the appropriate source.

**References**

1. Mazen S Daud, Mark R Pittelkow. Lichen Planus. In: Freedberg IM, Eisen AZ, Wolff K, editors. Fitzpatrick's dermatology in general medicine 6th ed. New York The McGraw-

- Hill; 2003:463-477.
2. Ongole R, Praveen BN, editors. Textbook of Oral Medicine, Oral Diagnosis and Oral Radiology. Elsevier Publication 2010.
  3. Kramer IRH, Lucas RB, Pindborg JJ, Sobin LH. Definition of leukoplakia and related lesions: an aid to studies on oral precancer. *Oral Surg Oral Med Oral Pathol* 1978; 46(4): 518-539.
  4. Scully C et al. Update on oral lichen planus: Etiopathogenesis and Management. *Crit Rev Oral Biol Med* 1998; 9(1): 86-122.
  5. Koray M et al. The evaluation of anxiety and salivary cortisol levels in patients with oral lichen planus. *Oral Diseases* 2003; 9:298-301.
  6. Vallego GP, Heurta MJ, Cerero R, Seoane JM. Anxiety and depression as risk factors for oral lichen planus. *Dermatology* 2001; 203:303-307.
  7. Collela G, Gritti P. Psychopathological findings of oral lichen. *Minerva Stomatologica* 1993; 42:265-270.
  8. Moreno-Rojo JL et al. Psychologic factors and oral lichen planus- A psychometric evaluation of 100 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1998; 86:678-691.
  9. Chaudhary S. Psychosocial stressors in oral lichen planus. *Australian Dental Journal* 2004; 49(4):192-195.
  10. Macleod RI. Psychological factors in oral lichen planus. *British Dental Journal* 1992; 173-188.