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Research Article

**TO DETERMINE ORAL LICHEN PLANUS FREQUENCY IN  
NON-INSULIN DEPENDENT DIABETIC PATIENTS**Dr Afifa Chaudhary<sup>1</sup>, Dr Fawad Ahmed<sup>2</sup>, Dr Aliya Latif<sup>3</sup><sup>1</sup> House Officer, Sir Ganga Ram Hospital, Lahore<sup>2</sup> Lahore General Hospital, Lahore<sup>3</sup> Sharif Medical City Hospital, Lahore**Article Received:** February 2020**Accepted:** March 2020**Published:** April 2020**Abstract:**

*The association between lichen planus (LP) and diabetes mellitus, especially oral lichen planus, has been the subject of many studies, but the result is controversial. In diabetes mellitus, 1.6% to 85% is the oral LP frequency reported frequency.*

***Objective:** To govern the oral lichen planus incidence compared to normal subjects with non-insulin dependent diabetes mellitus.*

***Study Design:** An Observational Study.*

***Place and Duration:** In the dermatology outpatient department of Lahore General Hospital for one year duration from March 2018 to March 2019.*

***Methods:** NIDDM cases with suspected oral lichen planus lesions between 40 and 70 years that met the selection criteria for both sexes were recorded. After obtaining informed consent, the recruited patients were examined after a detailed history and biopsy and histopathology were performed. Any relevant research was carried out as needed. Equal age and sex matched controls for oral LP were also examined.*

***Results:** Of the 49 (57%) females and 37 (43%) males from total of 86 patients, aged between forty to seventy years, with of 51.3 years mean age. There were 3 age groups, i.e. forty to fifty years, fifty to sixty years and above sixty year. Eight (6.9%) of these patients had histopathologically confirmed oral lichen planus ( $P < 0.05$ ). The disease was confirmed histopathologically in only one (1.2%) of the control group. There were 5 women (62.5%) and 3 men (37.5%). Oral mucosa was included in 7 patients (87.5%).*

***Conclusion:** In this analysis, it can be determined that oral Lichen Planus has noteworthy relationship with NIDDM as paralleled to the healthy subjects.*

***Keywords:** oral lichen planus, NIDDM, lichen planus.*

**Corresponding author:****Dr. Afifa Chaudhary,**

House Officer, Sir Ganga Ram Hospital, Lahore

QR code



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**INTRODUCTION:**

Diabetes mellitus is a chronic disease-causing cutaneous manifestation and affects multiple body systems that are very common<sup>1</sup>. Lichen planus (LP) is a mucocutaneous infection with intraoral findings as a regular feature<sup>2-3</sup>. Cutaneous lesions predominate with oral mucosal lesions. The prevalence of lichen planus is 1-2% as an oral disease. Oral lichen planus has been reported to be independent of the skin form and to be persistent and resistant to treatment<sup>4-5</sup>. The lateral margin, the dorsum of the tongue, the gum, the hard palate, and the vermilion margin are common areas of involvement and manifest as reticular intraoral lesions in plaque or papular form. However, the oral mucosa is the most common site of involvement. The relationship between diabetes mellitus and LP, especially oral LP, has been the subject of many studies<sup>6</sup>. The autoimmune history of both LP and DM have same pathogenesis. Oral LP has been reported in insulin-dependent diabetic patients and also in NIDDM, but at a higher frequency than normal subjects<sup>7</sup>. The relationship between oral LP and diabetes mellitus has been controversial, although it has been widely studied. In diabetes mellitus, the oral LP frequency has been reported to range from 1.6% to 85%. However, some studies confirm this relationship, while others do not. Skin findings of diabetes mellitus have also been investigated in our country<sup>8</sup>. Wahid et al. reported low oral LP incidence in diabetes mellitus patients. Similarly, Bajaj et al. reported a trivial relationship of the two conditions in the world. Therefore, it can be emphasized that it has a relationship with diabetes mellitus regardless of subtype of oral LP<sup>9</sup>. Therefore, worldwide studies have been carried out on this association. However, there is a relative minimum information on the oral lichen planus frequency in diabetic patients. This analysis was held to know the oral LP frequency in NIDDM individuals according to the control population.

**MATERIALS AND METHODS:**

The present clinical-pathological study was performed on patients who came to dermatology outpatient department of Lahore General Hospital for one year duration from March 2018 to March 2019. Patients admitted to the outpatient clinic with

suspected oral lichen planus lesions with NIDDM were included. By nonprobability consecutive sampling, the patients were selected. Patients of both sexes with 40-70 years of age and with NIDDM over 5 years were included. Only a recently recorded case of known NIDDM were selected for the study. The individuals receiving corticosteroids or immunosuppressive drugs were excluded from the study. Patients with a history of dependence or drug use predisposing to lichen eruptions were also excluded. Patients suffering from any other dermatological or systemic disease were also debarred.

After taking consent in written form, the patients who were selected inspected after a detailed history. In all of these diagnosed clinically patients, for microscopy scraps were taken with KOH to rule out oral candidiasis. All clinically suspected patients underwent biopsy and histopathology to confirm oral lichen planus. The findings were recorded in a pre-designed pro format. Equal age and sex controls were performed to compare the frequency with normal subjects. SPSS 18.0 version was used for data analysis. Variables comprised were the oral lichen planus absence presence, duration of diabetes, sex and age.

Effect modifiers were controlled by age stratification grouping in forty to fifty years, fifty to sixty years and above sixty year, sex (male and female) and diabetes duration (five to ten years, ten to fifteen years and above fifteen years) to observe the impact on the outcome.

**RESULTS:**

Of the 49 (57%) females and 37 (43%) males from total of 86 patients, aged between forty to seventy years, with of 51.3 years mean age. There were 3 age groups, i.e. forty to fifty years, fifty to sixty years and above sixty year (Table 1). Of these groups, 51 (59.3%) were between the ages of 40-50, 29 (33.7%) were between the ages of 51-60 and 6 (7%) were over 60 years. From the date of diagnosis, the diabetes duration was five to ten years in seventy two (83.7%) patients and ten to fifteen years in 14 (16.3% patients (Table 1).

Age in years	N (%)
<b>Forty to fifty years(40-50)</b>	Fifty one (59.3)%
<b>Fifty one to Sixty years(51-60)</b>	Twenty Nine(33.7)%
<b>Above Sixty Years(&gt;60)</b>	Six (7)%
Disease duration in years	
<b>Five to ten years(5 -10)</b>	Seventy two (88.7)%
<b>Eleven to Fifteen Years(11-15)</b>	Fourteen (16.3)%

Oral LP was confirmed histo-pathologically in 8 (6.9%) of these patients ( $P < 0.05$ ). The disease was confirmed histo-pathologically in only one (1.2%) of the control group. There were 5 (62.5%) women and 3 (37.5%) men. Oral mucosa was involved in 7 patients (87.5%) and gingival mucosa in 3 patients (37.5%). Among the patients who presented with oral lichen planus, 6 (75%) subjects were between forty to fifty years of age, 51-60 years old subjects were 2 (25%) and none of the patients older than 60 years had Oral lesions. Seven of these subjects (87.5%) had five to ten years duration of diabetes for and 1 (12.5%) had diabetes for ten to fifteen years.

### DISCUSSION:

There are around sixty million population globally and diabetes mellitus have effect all age groups and population. The WHO estimated its prevalence to reach 300 million by 2025. Oral LP is a chronic debilitating form of the disease with a long-term course<sup>10</sup>. The oral mucosa remains the most common site of involvement, but the lower lip, tongue, hard and soft palate, gingiva and the base of the mouth may also be affected. Oral LP has been reported in insulin-dependent diabetics and in patients with NIDDM and at a higher frequency than in normal subjects<sup>11</sup>. Much research has been done on the relationship between diabetes mellitus and oral LP. The autoimmune history of LP and the association of diabetes mellitus further support this. The relationship between oral LP and diabetes mellitus is controversial, although it has been studied extensively. In this study, among 86 patients studied, 8 (6.9%) patients and 1 (1.2%) patient in the control group had histo-pathologically confirmed oral LP ( $P < 0.05$ ). Souza et al. reported that the incidence of oral LP in NIDDM was 6.1% compared to controls. Therefore, the finding in our study can be compared with the study<sup>12</sup>. However, Van Dis et al. reported a comparable frequency of 4% and 3% in non-insulin dependent diabetics and controls, respectively. In another study, the frequency of oral LP in a similar patient group was 2.8% (1.8%) compared to the control group. Therefore, the finding in our study is statistically significant, contrary to the studies mentioned. In contrast, Romero et al. reported a frequency as high as 27.4% in a similar patient group<sup>13</sup>. Therefore, it can be emphasized that the general figures regarding the frequency of oral LP in NIDDM are variable. Studies in this context have demonstrated a wide variation, ranging from 1.6% to 85%, independent of the type of diabetes mellitus<sup>14</sup>. The relationship between diabetes mellitus and LP was also investigated. Ara et al. Observed that 10% of patients with oral LP develop into diabetes mellitus. Therefore, studies in any way show the history of autoimmune and association of diabetes mellitus as well as oral LP. In our study, more women were affected than men. Souza et al, the excess number of women in the original sample size may explain the superiority of women. There are other studies that do not mention the incidence of this gender-related association. In this study, the oral mucosa and gingival mucosa were the only sites of involvement and the oral mucosa was more frequent. Ara et al. Also reported that oral mucosa plays the highest

frequency, i.e. 96%. In addition, the study involved gingival mucosa in 12% of patients<sup>15</sup>. Therefore, our findings can be compared with this study. In general, oral mucosa is reported to be the most common site for oral LP. Eisen et al. reported similar sites of involvement for oral LP. All patients in our study had diabetes mellitus for above five years and relation with oral LP. This finding is consistent with the reports of Souza et al., Who reported that 75% of patients had diabetes mellitus for more than 5 years.

Therefore, non-insulin dependent diabetes mellitus and oral lichen planus has important relationship as paralleled to healthy individuals. Other reports also show a similar relationship between oral lichen planus and insulin-dependent diabetes mellitus. Although systemic conditions are known to be associated with oral mucosa changes, a similar association with DM is still lacking. However, the relationship between oral LP and diabetes mellitus remains a subject of research due to the common autoimmune background of both diseases.

### CONCLUSION:

In this analysis, it can be determined that oral Lichen Planus has noteworthy relationship with NIDDM as paralleled to the healthy subjects. Oral mucosa is the most common site of involvement. Most of these patients are between 40 and 50 years of age and have had a history of diabetes for more than 5 years. However, to confirm both non-insulin-dependent and insulin-dependent diabetes mellitus relation with oral Lichen Planus further studies are required.

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