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PREVALENCE OF THE TYPES OF ORAL LICHEN PLANUS IN PATIENTS OF A PRIVATE DENTAL INSTITUTE

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Abstract

Introduction: The mouth is a mirror of health or disease, a sentinel or early warning system. The mouth might rather be thought of as a window to the body because oral manifestations accompany many systemic diseases. In many cases, oral involvement leads to the appearance of other symptoms or lesions at other locations. Most of the oral mucosa is derived embryologically from an invagination of the ectoderm and as expected like other similar orifices, may become involved in disorders that are primarily associated with the skin.

Materials and methods: This is a retrospective study conducted in a private dental institution from January 2024 to December 2024. The patient case records were reviewed for the necessary information by a trained examiner. The advantage of conducting the study in an institutional set up provides a population with similar ethnicity. Among patients who have visited the dental clinic of the institution, the case records of 218 patients were reviewed. The institutional ethical committee provided approval for the study.

Results: The total sample size of the study is 218. Among the 218 individuals, 138 had oral lichen planus. The prevalence of oral lichen planus was found to be 63.3 %. This value appears to be significant which can be attributed to the sample size taken and larger samples would have yielded a different value.

Conclusion: The current study elucidated that the reticular type of oral lichen planus was the most prevalent type. The same was also found to be more prevalent in females and in the 41 - 60 age groups. This study had a smaller sample size which might be the reason for the current results. It is paramount to understand the pathogenesis of oral lichen planus in order to formulate an effective treatment strategy. It would also be useful to perform studies to find out the link between occurrence of these types of lichen planus in a particular sex and age group of patients.

Key Words: lichen planus, skin, treatment strategy, occurrence.

INTRODUCTION

The mouth is a mirror of health or disease, a sentinel or early warning system. The mouth might rather be thought of as a window to the body because oral manifestations accompany many systemic diseases. In many cases, oral involvement leads to the appearance of other symptoms or lesions at other locations. Most of the oral mucosa is derived embryologically from an invagination of the ectoderm and as expected like other similar orifices, may become involved in disorders that are primarily associated with the skin.[1]

Lichen planus (LP) is a chronic mucocutaneous disorder of the stratified squamous epithelium that affects oral and genital mucous membranes, skin. Oral lichen planus (OLP) is the mucosal counterpart of cutaneous LP. The Lichen planus word was derived from the Greek word "leichen" which means tree moss and the Latin word "planus" means flat.[2]

The designation and description of the pathology were first presented by the English physician Erasmus Wilson in 1866.8 He considered this to be the identical disease as "lichen ruber," previously represented by Hebra and indicated the disease as "an eruption of pimples remarkable for their colour, their figure, their structure, their habits of isolated and aggregated development. Kaposi described the first clinical variant of the disease in 1892 as lichen ruber pemphigoid. In 1895, Wickham noted the characteristic reticulate white lines on the surface of LP papules, today recognized as Wickham striae. Darier is assigned with the first formal description of the histopathological changes associated with LP.[3]

The exact aetiology of OLP is not fully confirmed, although recent research suggests a key role of immunological mechanisms that may be involved. LP is an autoimmune disease, transmitted by T CD 8+ cells, macrophages, and Langerhans cells. Immune mechanisms trigger apoptosis resulting in cell breakdown and lead to change in the appearance of characteristic histological changes.[4]

The cause of lichen planus is not completely understood, but genetics and immunity may be a factor which causes a change in the body. Findings suggest that the body is reacting to an antigen within the surface of the skin or mucosa. Many authors think that lichen planus is an autoimmune disorder in which the skin cells lining the mouth are attacked by the white blood cells, but it is not confirmed yet more study is needed. Some authors classify lichen planus as a cell-mediated immune response and believe that since it does not have any specific antigen that has not been identified and does not classify as an autoimmune disorder.[5]

MATERIALS AND METHODS Study Design

This is a retrospective study conducted in a private dental institution from January 2024 to

December 2024. The patient case records were reviewed for the necessary information by a trained examiner. The advantage of conducting the study in an institutional set up provides a population with similar ethnicity. Among patients who have visited the dental clinic of the institution, the case records of 218 patients were reviewed. The institutional ethical committee provided approval for the study.

Inclusion criteria

1. Patients who have been diagnosed with oral lichen planus
2. Patients with all types of oral lichen planus

Exclusion criteria

1. Incomplete patient data
2. Duplicate patient data
3. Patients having oral lichen planus coexisting with other mucosal lesions
4. Patients less than 18 years of age

Sampling

A total of 218 case records of patients with oral lichen planus were reviewed to find out the prevalence of the different types of oral lichen planus. Convenient sampling method was used to select the patients for the study. The data obtained from the case records were cross verified with photographs. **Data collection**

All the data after thorough checking for duplicates, incomplete entries and cross verification with photographs were entered in Microsoft excel spread sheet in order to organise the data. The variables obtained from the data included age, gender, different types of oral lichen planus and the presence of oral lichen planus.

Statistics

The statistical analysis of the obtained data was performed by the SPSS software version 23.0. The data from the excel spread sheet was transferred to SPSS software for analysis. Chi square tests were employed in order to find the association between different variables. The final results are presented in the form of graphs for further interpretation and discussion. The p value < 5 % was considered to be statistically significant.

RESULTS

The total sample size of the study is 218. Among the 218 individuals, 138 had oral lichen planus. The prevalence of oral lichen planus was found to be 63.3 %. This value appears to be significant which can be attributed to the sample size taken and larger samples would have yielded a different value.

Pakfetrat et al.found the prevalence of oral lichen planus to be 18.2%. This marked difference in the values can be explained due to a higher sample size taken by Pakfetrat et al. In their study, 2025 patients were included and about 420 patients were diagnosed with oral lichen planus.

The occurrence of oral lichen planus was studied among the different genders (Figure 1). In the present study it was found that there was a female predilection for oral lichen planus with 37.16 %

of females affected by oral lichen planus and 26.15 % males were affected by the disease. The association between the gender and oral lichen planus was found to be statistically significant ($p < 0.05$). Munde et al.30 in their study found a male predilection (61.7 %) for oral lichen planus and females were found to be 38.2 % in their study. This difference in the values could be due to the sample selection criteria adopted by the author.

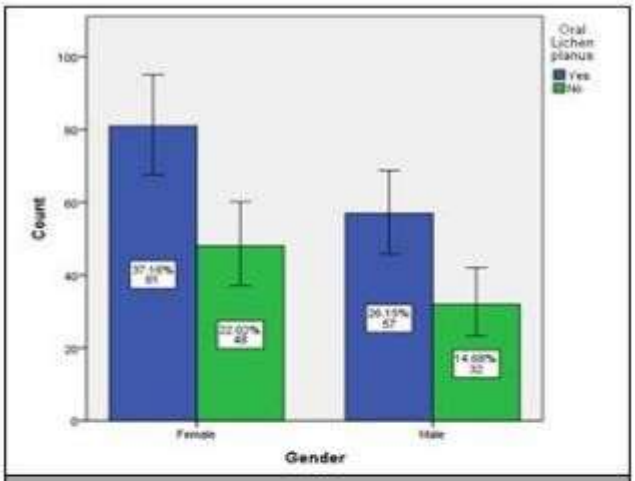

Figure 1. Bar chart shows the gender distribution of the study population where gender is represented on the x-axis and the percentage of the study population is represented on the y-axis. About 40.83 % of the study population was males and 59.17 % were females suggesting female predominance. The association between the gender and oral lichen planus was found to be statistically significant ($p = 0.036$; $p < 0.05$).

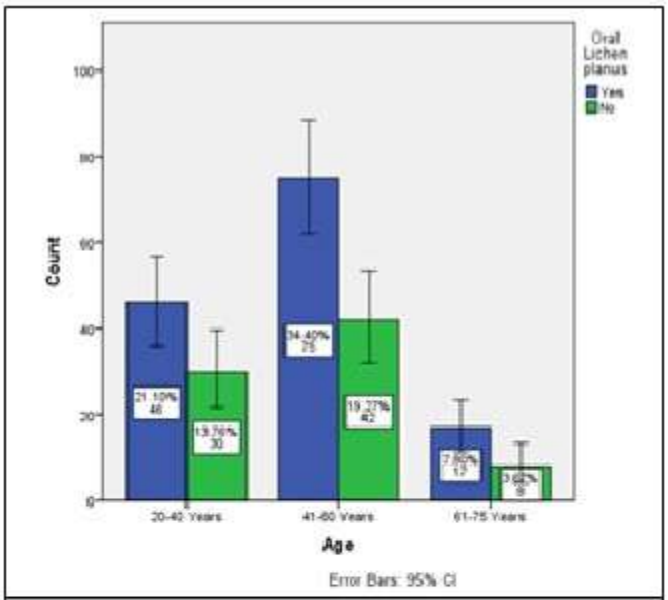

Figure 2: Bar chart shows the age range of the study population where the age range is represented on the x-axis and the percentage of the study population is represented on the y-axis. About 34.86% of the study population were 20-40 years, 53.67% were 41-60 years and 11.47% were 61-75 years suggesting an age range of 41-60 years predominance. The association between the age and oral lichen planes was found to be statistically not significant (p = 0.522; p > 0.05).

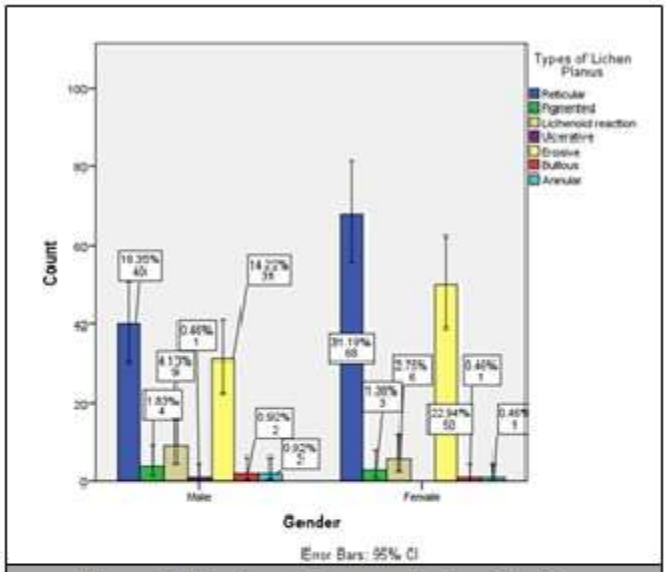

Figure 3. Clustered bar graph showing the association of gender with types of OLP. The X-axis represents the gender and Y-axis represents the types of OLP, where blue represents reticular, green colour denotes pigmented, grey colour denotes lichened reaction, purple colour denotes ulcerative, yellow colour denotes erosive, red colour denotes bullous, green colour denotes annular. There was no significant association between gender and types of OLP of the study population. (p = 0.3; p>0.05).

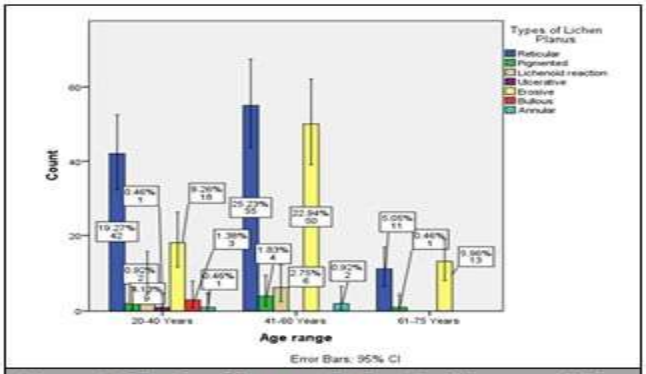

Figure 4. Clustered bar graph showing the association of Age range with types of OLP. The X-axis represents the Age range and Y-axis represents the types of OLP, where blue represents reticular, green colour denotes pigmented, grey colour denotes lichened reaction, purple colour denotes ulcerative, yellow colour denotes erosive, red colour denotes bullous, green colour denotes annular. There was no significant association between the age range and types of OLP of the study population. (p = 0.3; p>0.05).

Among the different age groups, the reticular type (25.23 %) of oral lichen planus was more prevalent in the 41-60 and the 20-40 years age groups. In the 61-75 age groups, erosive oral lichen planus was found to be more prevalent (Figure 4). This could be due to certain systemic diseases

such as diabetes mellitus occurring commonly in older age groups and also due to the weakened immune system. Oral lichen planus occurring more commonly in diabetic patients is a popular observation made by several researchers. The association between the age and different types of oral lichen planus were found to be statistically not significant ($p > 0.05$).

DISCUSSION

The different types of oral lichen planus were studied among males and females (Figure 3). It was found that reticular oral lichen planus was the most prevalent type irrespective of the gender. Females had 31.19 % and males had 18.35 % of reticular oral lichen planus.[6] This was followed by the erosive oral lichen planus (22.94 % in males and 14.22 % in females). Other types of oral lichen planus such as pigmented, ulcerative, annular and bullous were present in lesser numbers in both the sexes.[7]

A few cases of lichenoid reaction were also found in both the sexes. The association between the gender and different types of oral lichen planus were found to be statistically not significant ($p >0.05$).[8] In the study done by Oberoi et al. it was found that reticular oral lichen planus (2.6 %) was the most common type and this is in accordance with the findings of the current study. The same observation was also seen in the study by Munde et al. These findings prove that the reticular type is the most common type.[9]

Among the different age groups, the reticular type (25.23 %) of oral lichen planus was more prevalent in the 41-60 and the 20-40 years age groups. In the 61-75 age groups, erosive oral lichen planus was found to be more prevalent (Figure 4). This could be due to certain systemic diseases such as diabetes mellitus occurring commonly in older age groups and also due to the weakened immune system. Oral lichen planus occurring more commonly in diabetic patients is a popular observation made by several researchers. The association between the age and different types of oral lichen planus were found to be statistically not significant ($p > 0.05$).[10]

CONCLUSION

The current study elucidated that the reticular type of oral lichen planus was the most prevalent type. The same was also found to be more prevalent in females and in the 41 - 60 age groups. This study had a smaller sample size which might be the reason for the current results. It is paramount to understand the pathogenesis of oral lichen planus in order to formulate an effective treatment strategy. It would also be useful to perform studies to find out the link between occurrence of these types of lichen planus in a particular sex and age group of patients.

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