Original Article

Assessment of Prevalence Of Oral Leukoplakia Among Known Population: A Clinical Study

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ABSTRACT

Background: Oral leukoplakia (OL) is a potentially malignant disorder affecting the oral mucosa. Hence; we planned the present study to assess the prevalence of OL among known population. **Materials & Methods:** The present study included evaluation of prevalence of OL among known population. A total of 50 patients were included in the present study. Intraoral examination of all the subjects was carried out using probe and a mouth mirror. All the results were recorded on excel sheet and were analysed by SPSS software. **Results:** OL was present in 1 male and 1 female. The overall prevalence of OL among the present study population was 4 percent. **Conclusion:** OL is present in significant population. Therefore adequate screening measures should be taken for its early detection.
Key Words: Leukoplakia, Prevalence

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INTRODUCTION

Oral leukoplakia (OL) is a potentially malignant disorder affecting the oral mucosa. It is defined as "essentially an oral mucosal white lesion that cannot be considered as any other definable lesion."[1-3] Oral leukoplakia is a white patch or plaque that develops in the oral cavity and is strongly associated with smoking. Risk factors include all forms of tobacco use forms including cigar, cigarette, beedi, and pipe.[4,5] Other synergistic risk factors include alcohol consumption, chronic irritation, fungal infections such as candidiasis, oral galvanism due to restorations, bacterial infections, sexually transmitted lesions like syphilis, combined micronutrient deficiency, viral infections, hormonal disturbances, and ultraviolet exposure.[6,7] Hence; we planned the present study to assess the prevalence of OL among known population.

MATERIAL & METHODS

The present study was planned in the department of oral medicine and it included evaluation of prevalence of OL among known population. A total of 50 patients were included in the present study. All the patients came for routine dental check-up. Exclusion criteria for the present study included:
Patients with history of any other systemic illness,
Patients with any known drug allergy,
Patients with presence of any identifiable white lesion,
After meeting the exclusion criteria, a total of 50 patients were included. Intraoral examination of all the subjects was carried out

using probe and a mouth mirror. Skilled and experiences dentists carried out the oral examination. Presence of any white lesion in the oral cavity without any confirmed ethology was recorded. All the results were recorded on excel sheet and were analysed by SPSS software. Univariate regression curve were used for assessment of level of significance.

RESULTS

A total of 50 subjects who came for routine examination were included in the present study. Among these 50 subjects, 30 were males while the remaining 20 were females. Mean age of the subjects of the present study was 45.1 years. OL was present in 1 male and 1 female. The overall prevalence of OL among the present study population was 4 percent.

DISCUSSION

In the present study, OL was present in 1 male and 1 female. The overall prevalence of OL among the present study population was 4 percent. Scheifele C et al assessed the prevalence of OL in a representative sample of the US population. data from the oral mucosal tissue assessment and some other covariates of 16128 participants in the US National Health and Nutrition Examination Survey (NHANES III) were included. The clinical definition of OL was applied according to the WHO criteria. The weighted prevalence estimates of OL were 0.66+/-0.14% in males, 0.21+/-0.05% in females and 0.42+/-0.08% in total. The age peaks were at

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40-49 years in males and at >or=70 years in females. The prevalence estimates were 0.37% for homogeneous OL and 0.06% for non-homogeneous OL. Gingiva (38.8%) and buccal mucosa (30.9%) were the most frequent locations. Compared to previous studies in the USA, a substantial decline of the prevalence of OL was shown.[8]

Graph 1: Prevalence of OL
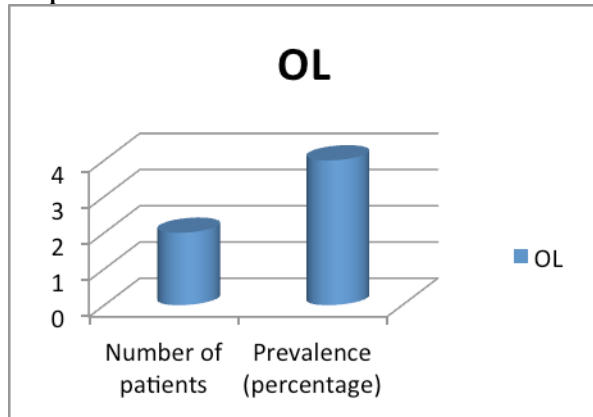
Gopinath D et al estimated the prevalence and risk factors for epithelial dysplasia as well as carcinoma within OL lesions at the time of initial clinical presentation in an Indian population with high prevalence of tobacco use. Clinical and pathologic data (age, sex, lesion location and histopathologic grading) of 546 cases of leukoplakia were analyzed. The prevalence rate of dysplasia and carcinoma in 546 oral leukoplakia cases was calculated. Univariate analysis was performed to examine risk factors associated with the presence of carcinoma and dysplasia within the lesions. The male to female ratio in this study was 2:1. Majority of the patients irrespective of sex had a history of tobacco use. Of the total 85% of non-homogeneous lesions and 70% for the homogeneous lesions were illustrating, features of epithelial dysplasia. The prevalence rate of carcinoma was 11.9%. In univariate analysis it was found that lesion site, clinical appearance, tobacco use were strongly correlated with the presence of carcinoma within OL. Their results demonstrate that majority of leukoplakia irrespective of its clinical appearance contain a dysplastic component and significant proportion contains carcinomatous foci. Lesions with certain features are more prone to have carcinomatous foci. However there is always a chance of finding foci of carcinoma in OL anywhere in the oral cavity. Therefore, excision biopsy is always mandatory before long term follow-up and treatment is planned.[9] Bokor-Bratić M et al reviewed epidemiologic studies on prevalence of oral leukoplakia. Special emphasis is placed on population selection, diagnostic criteria, type and training of examiners and risk factor assessment. Prevalence of leukoplakia in these studies has ranged from 0.6% to 4.6%. Variations in prevalence among the studies could depend on methodology, especially studied populations and diagnostic criteria. Most investigations have investigated the entire available adult population in a geographic region or a random sample. Others have comprised selected populations, such as hospital or clinic patients. Their study has shown that prevalence of oral leukoplakia was 2.2% in a relatively small and highly selected population. The onset of leukoplakia usually takes place after the age of 30 years. Their study showed that oral leukoplakia occurred in men over 40 years of age and in women over 50 years of age. These results are supported most previous findings. Gender distribution varies in most studies, ranging from a strong male predominance (4:1), to almost 1:1 in the Netherlands. Tobacco smoking is the most important known etiological factor in development of oral leukoplakia. Smokers have a six-fold increase in the risk of developing leukoplakia of the oral mucosa in regard to non-smokers. Six European studies, including our study, found a prevalence of smoking between 56 and 97 percent in leukoplakia patients. Their study also showed that the majority of smokers with leukoplakia (74.0%) smoked more than 20 cigarettes per day compared to 34.5% of those without leukoplakia. Smoking and alcohol consumption are often coexistent factors making it difficult to assess the effects of these factors individually.[10]

CONCLUSION

Under the light of above mentioned data, the authors conclude that OL is present in significant population. Therefore adequate screening measures should be taken for its early detection.

REFERENCES

1. Ferreira LL, Biasoli ÉR, Bernabé DG, Nunes CM, Miyahara GI. Plasma HPV DNA is detectable in oral leukoplakia patients. Pathol. Res. Pract. 2017 Jul;213(7):759-765.
2. Liu Y, Li Y, Fu Y, Liu T, Liu X, Zhang X, Fu J, Guan X, Chen T, Chen X, Sun Z. Quantitative prediction of oral cancer risk in patients with oral leukoplakia. Oncotarget. 2017 Jul 11;8(28):46057-46064.
3. Greenslade R. Interventions for treating oral leukoplakia to prevent oral cancer. Nurs Stand. 2017 May 24;31(39):42-43.
4. Sankaranarayanan R, Mathew B, Jacob BJ, Thomas G, Somanathan T, Pisani P, et al. Early findings from a community-based cluster-randomized controlled oral cancer screening trial I Kerala, India. Cancer. 2000;88:664–73.
5. Barnes L, Eveson JW, Reichart PA, Sidransky D. World Health Organization Classification of Tumours. Pathology & Genetics. Head and Neck Tumours. Lyon: World Health Organization International Agency for Research on Cancer, IACR Press; 2005.
6. Mehrotra D, Goel M, Kumar S, Pandey R, Hari Ram. Oral verrucous lesions: controversies in diagnosis and management. Journal of Oral Biology and Craniofacial Research. 2012;2(3):163–69.
7. Lee JJ, Hung HC, Cheng SJ, et al. Carcinoma and dysplasia in oral leukoplakias in Taiwan: prevalence and risk factors. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2006;101(4):472–80
8. Scheifele C1, Reichart PA, Dietrich T. Low prevalence of oral leukoplakia in a representative sample of the US population. Oral Oncol. 2003 Sep;39(6):619-25.
9. Gopinath D, Thannikunnath BV, Neermunda SF. Prevalence of Carcinomatous Foci in Oral Leukoplakia: A Clinicopathologic Study of 546 Indian Samples. Journal of Clinical and Diagnostic Research : JCDR. 2016;10(8):ZC78-ZC83. doi:10.7860/JCDR/2016/16815.8305.
10. Bokor-Bratić M1. Prevalence of oral leukoplakia. Med Pregl. 2003 Nov-Dec;56(11-12):552-5.