

Assessment of Various Oral Lesions in Known Smokers Population

Annette M Bhambal^{1*} Anu Narang² Asmaa Bahar³ Sana Khan⁴ Kshama Khare⁵ Prince Jain⁶

¹Professor, Department of Oral Medicine and Radiology, People's College of Dental Sciences and Research Centre, Bhopal, MP, India.

²Professor, Department of Conservative Dentistry and Endodontics, People's College of Dental Sciences and Research Centre, Bhopal, MP, India.

³Senior Lecturer, Department of Periodontology, People's Dental Academy, Bhopal, MP, India.

⁴Senior Lecturer, Department of Conservative Dentistry, People's Dental Academy, Bhopal, MP, India.

⁵Senior Lecturer, Department of Periodontology, People's Dental Academy, Bhopal, MP, India.

⁶Senior Lecturer, Department of Periodontology, Mansarovar Dental College, Bhopal, MP, India.

ABSTRACT

Background: The oral mucosa acts as a protective barrier against trauma, pathogens and carcinogenic agents. It can be affected by different kinds of lesions and conditions. The present study was designed to analyze various oral mucosal lesions in a known smokers population.

Material and methods: A total of 440 participants, with an age range of 20-50 years participated in this study. The participants used to be smokers who attended the Outpatient Department for routine dental examinations. The participants were examined by a single examiner. The diagnosis was made, and lesions were recorded. Data were assessed by using SPSS-21 statistical software.

Results: In the present study, total participants were 440 smokers in which maximum oral lesions were found in males (65.90%). The maximum oral lesions were found in the age group 31-40yrs(40.90%). Tobacco induced oral pigmentation was present in maximum smokers (18.18%).

Conclusion: This study provides baseline data of oral lesions in smokers of a known region. This study concluded that there is a strong correlation of oral lesions with smoking. Dental services need to implement care and health education for smokers to promote health.

Keywords: Oral lesions, Tobacco induced oral pigmentation.

INTRODUCTION

Tobacco use is a major public health challenge in India, with 275 million adults consuming different tobacco products.¹ India is the second-largest consumer of Tobacco in the world, China being in the first position. The prevalence of tobacco use among adults where 15 years and above is 35%.² Tobacco smoking and cigarettes cause DNA damage and increase the risk for oral cancer. Smoking is an important risk factor for oral diseases such as oral cancer, periodontal disease, cleft lip, cleft palate, alveolar bone loss, and black hairy tongue.³⁻⁵

⁵ Tobacco contains a large number of carcinogens,

with the most significant being polycyclic aromatic hydrocarbons, aromatic amines, and nitrosamine, which cause cellular damage.⁶ The smoking forms of Tobacco contain more than 4000 different chemicals, and at least 50 are known carcinogens, whereas smokeless Tobacco contains 28 carcinogens.⁷ Both smoking and smokeless Tobacco produce a number of oromucosal lesions (OMLs), ranging from melanin pigmentation to potentially malignant disorders (PMDs).⁶ Hence, the present study was designed to analyze various oral mucosal lesions in a known smokers population.

Received: May. 21, 2020; Accepted: July. 16, 2020

*Correspondence Dr. Annette M Bhambal.

Department of Oral Medicine and Radiology, People's College of Dental Sciences and Research Centre, Bhopal, MP, India.

Email: Not Disclosed

MATERIAL AND METHODS

A total of 440 participants, with an age range of 20-50 years participated in this study over a period of 6 months. The participants used to be smokers who attended the Outpatient Department for routine dental examinations. Before the commencement of the study, ethical approval was taken from the ethical committee of the institute, and informed consent was obtained from the participants. Participants who had the systemic disease (cardiovascular, endocrine, gastrointestinal, oral, or respiratory disease), who consumed alcohol, or who were under drug treatment were excluded from the study. The participants were examined by a single examiner. The diagnosis was made on the basis of medical history, clinical features. Lesions were recorded, if they were observed at the time of examination. Data were assessed by the use of chi-square tests and logistic regression models at the 0.05 significance level by use of SPSS-21 statistical software.

RESULTS

In the present study, total participants were 440 smokers in which maximum oral lesions were found in males (65.90%). The maximum oral lesions were found in the age group 31-40yrs(40.90%). Tobacco induced oral pigmentation was present in maximum smokers (18.18%).

Table 1: oral mucosal lesions according to gender.

Gender	N(%)
Male	290(65.90%)
Female	150(34.09%)
Total	440(100%)

Table 2: oral mucosal lesions according to age.

Age group (yrs)	N(%)
20-30	130(29.54%)
31-40	180(40.90%)
41-50	130(29.54%)
Total	440(100%)

Table 3: Prevalence of oral mucosal lesions.

Oral mucosal lesions	N(%)
Leukoedema	54(12.27%)

Tobacco induced oral pigmentation	80(18.18%)
Coated tongue	56(12.72%)
Tobacco pouch keratosis	54(12.27%)
Oral Squamous cell carcinoma	34(7.72%)
Smoker's melanosis/nicotina stomatitis	34(7.72%)
Tobacco induced keratosis	58(13.18%)
Lichenoid reactions	15(3.4%)
Leukoplakia	45(10.22%)
Erthroplakia	10(2.2%)
Total	440(100%)

DISCUSSION

Tobacco has become a global epidemic, and its consumption is a global health problem.¹ It is most commonly smoked in the form of cigarettes or bidis (a crude form of smoked Tobacco).⁸ In the present study, total participants were 440 smokers in which maximum oral lesions were found in males (65.90%). The maximum oral lesions were found in age group 31-40yrs (40.90%). Tobacco induced oral pigmentation was present in maximum smokers (18.18%).

In the current study, the distribution of oral mucosal lesions was more common in male patients versus female patients and this probably because the tobacco smoking was more predominant among males than females. This finding corresponds to previous studies have been done in India to assesses the prevalence of oral lesions among tobacco users that showed a greater number of males when compared with females.^{9,10} However, these results were opposite to Chilean study, where females represented the majority of the sample.¹¹

Krishna et al. study that represented oral submucous fibrosis as one of the most common finding in his study population (14.55).¹² However, this result was opposite to a study in the Sicilian population where the most common oral lesion was coated tongue.¹³

A study was conducted by Thada and Pai revealed that indulgence in habit was seen more among males between age group 26–55 years, and most of them had education above high school level. Smoking (51.9%) was the most common oral habit. The prevalence of oral mucosal lesions was 46.1%. Reactive lesions (55.41%) were the most common followed by premalignant lesions/conditions (27.67%), malignant lesions (12.40%), and other lesions (4.49%).¹⁴

CONCLUSION

This study provides baseline data of oral lesions in smokers of a known region. This study concluded that there is a strong correlation between oral lesions with smoking. Dental services need to implement care and health education for smokers to promote health.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. Kaur J, Jain DC. Tobacco control policies in India: Implementation and challenges. *Indian J Public Health*. 2011;55:220–7.
2. Government of India. Ministry of Health & Family Welfare, Global Adult Tobacco Survey, India. 2010. [Last accessed on 2017 Jan 06]. Available from: <http://www.aftcindia.org>.
3. Khalili J. Oral cancer: risk factors, prevention and diagnostic. *Exp Oncol*. 2008;30:259–264.
4. Bánóczy J, Gintner Z, Dombi C. Tobacco use and oral leukoplakia. *J Dent Educ*. 2001;65:322–327.
5. Khor GH, Siar CH, Jusoff K. Chromosome 17 aberration of oral squamous cell carcinoma in Malaysia. *Glob J Health Sci*. 2009;1:150–156.
6. Ahmadi-Motamayel F, Falsafi P, Hayati Z, Rezaei F, Poorolajal J. Prevalence of oral mucosal lesions in male smokers and nonsmokers. *Chonnam Med J* 2013;49:65-8.
7. Chandra P, Govindraju P. Prevalence of oral mucosal lesions among tobacco users. *Oral Health Prev Dent* 2012;10:149-53.
8. Aruna DS, Prasad KV, Shavi GR, Ariga J, Rajesh G, Krishna M. Retrospective study on risk habits among oral cancer patients in Karnataka Cancer Therapy and Research Institute, Hubli, India. *Asian Pac J Cancer Prev* 2011;12:1561-6.
9. Saraswathi TR, Ranganathan K, Shanmugam S, Sowmya R, Narasimhan PD, et al. Prevalence of oral lesions in relation to habits: Cross-sectional study in South India. *Indian J Dent Res*. 2006;17:121-125.
10. Nagpal R, Saha S. Prevalence of oral mucosal lesions in Tobacco and alcohol using population of Lucknow city. *J Indian Assoc Public Health Dent*. 2008;6:45-51.
11. Rivera C, Jones-Herrera C, Vargas P, Venegas B, Droguett D. Oral diseases: A 14-year experience of a Chilean institution with a systematic review from eight countries. *Med Oral Patol Oral Cir Buccal*. 2017;22:e297-306.
12. Priya MK, Srinivas P, Devaki T. Evaluation of the prevalence of oral mucosal lesions in a population of eastern coast of South India. *J Int Soc Prev Community Dent*. 2018;8:396-401.
13. Tortorici S, Corrao S, Natoli G, Difalco P. Prevalence and distribution of oral mucosal non-malignant lesions in the Western Sicilian population. *Minerva Stomatol*. 2016;65:191-206.
14. Thada SR, Pai KM. Prevalence of habit associated oral mucosal lesions among the outpatients - A prospective cross sectional study. *Int J Res Health Sci* 2014;2:263-273.