Content available at: https://www.ipinnovative.com/open-access-journals

Journal of Oral Medicine, Oral Surgery, Oral Pathology and Oral Radiology

Journal homepage: www.joooo.org

Original Research Article

Prevalence of oral mucosal lesions in tobacco users: An institutional study in south India

Megha B[1]*, Ibthisam[1], Ireen Babu[1], Henna K[1], Hridhya Ramesh[1], Hiba Mohammed[1]

[1]*Dept. of Oral Medicine and Radiology, Mahe Institute of Dental Sciences and Hospital, Mahe, Puducherry, India*

ARTICLE INFO

Article history:
Received 28-10-2024
Accepted 04-12-2024
Available online 18-12-2024

Keywords:
Tobacco
Leukoplakia
OSMF
Tobacco pouch keratosis
Chewers mucosa
Oral cancer
Potentially malignant lesions

ABSTRACT

Background: Use of tobacco in smoking and smokeless form is very prevalent in India. Various oral mucosal lesions are associated with use of tobacco products.
Aim: To assess prevalence of various oral mucosal lesions associated with tobacco use.
Materials and Methods: This cross-sectional study was conducted in department of oral medicine and radiology in a dental college in South India. Study included 342 tobacco users. Status of tobacco usage was elicited from each participant. Each participant was examined for oral mucosal lesions.
Result: 256(74%) participants had habit of smoking and 58(17%) had habit of chewing betel quid and 28(8%) had habit of both. Oral mucosal lesions were detected 144 participants.
Conclusion: Various oral mucosal lesions were found to be associated with tobacco usage. Participants were educated regarding harmful effects of tobacco usage.

1. Introduction

Use of tobacco in smoking and smokeless forms is found to be associated with various potentially malignant disorders and oral cancer.[1] According to WHO approximately 6 million death occur due to tobacco use per year and this might increase to 8 million by 2030.[2] Deadly carcinogens are found in both smoking and smokeless forms of tobacco.[3] Use of tobacco leads to thickening of epithelium and increased keratinization. These might later lead to dysplastic changes and development of potentially malignant disorders and oral cancer.[2]

Various oral mucosal lesions associated with tobacco use include leukoplakia, smokers palate, tobacco pouch keratosis and oral cancer.[4] Oral cancer is one of the most common cancer in India. This could be due to high prevalence of usage of betel quid, pan masala and other tobacco products.[5] In India smokeless form of tobacco is most commonly used, which include betel quid, khaini, gutka etc.[6] This study aims at promoting early diagnosis of lesions associated with smoking and prevent the malignant transformation of such lesions. Study also aims at educating patients about ill effects of tobacco.

2. Materials and Methods

The present study was a cross-sectional prevalence study conducted in a dental college in South India.

Participants for the study were selected from the outpatients of department oral medicine and radiology who were willing to participate in the study. Patients who had habit of tobacco usage for more than a year was included in the study. Patients who had quit the habit for more than a month time were excluded from the study. Ethical clearance for the study (MINDS/SSIX/15042024/UG-004) was obtained from the institutional ethical committee before the start of the study.

* *Corresponding author*.
E-mail address: meghab.2012@gmail.com (Megha B).

https://doi.org/10.18231/j.jooo.2024.055

The study was carried out for a duration of six months from March 2024 to September 2024. Patients with habit of tobacco usage was enrolled in the study. A written informed consent was taken from the participant for the study. The aims and objectives of the study were explained to the patients. A detailed case history including habit history was taken for each participant. Each participant was asked about the type, duration and frequency of tobacco use. Clinical examination was done using mouth mirror and sufficient lighting. Oral mucosa was examined by specialist in oral medicine and radiology for any tobacco associated oral mucosal lesions. The site and extend of lesion were noted. Diagnosis of each lesion were noted down.

3. Results

A total of 342 tobacco users participated in the study. 256(74%) participants had habit of smoking and 58(17%) had habit of chewing betel quid and 28(8%) had habit of both. Oral mucosal lesions were detected 144 participants. Various lesions found to be associated with tobacco were oral submucous fibrosis, leukoplakia, smokers melanosis, tobacco pouch keratosis, chewers mucosa and oral cancer. Table 1 shows prevalence of each lesion. Multiple lesions were noted in some participants. Site of each lesion is given in Table 2.

Table 1: Types of oral mucosal lesions

S. No.	Lesion	n
1	Smokers palate	113
2	Tobacco pouch keratosis	9
3	Chewers mucosa	8
4	Homogeneous Leukoplakia	23
5	Speckled Leukoplakia	7
6	Verrucous Leukoplakia	3
7	OSMF	7
8	Oral cancer	5

Table 2: Site involved

S.No.	Sites involved	n
1	Buccal mucosa	42
2	Labial mucosa	5
3	Vestibule	12
4	Palate	113
5	Tongue	6
7	Alveolus	3
8	Floor of the mouth	2

4. Discussion

According to data given by WHO India is the third largest producer and second largest consumer of tobacco in the world. Now a days there are many commercially available tobacco products available in India and arecanut and tobacco constitute majority of these products.[7] Most common tobacco product used in India is beedi. Most common smokeless tobacco product used in India is gutka.[8] Use of tobacco is associated with various harmful consequences. Spreading awareness regarding the same is of utmost importance.

342 participants with habit of tobacco usage were examined in this study. Out of these 319(93%) were males and 23(7%) were females. Smoking form of tobacco was used by majority of the participants which is in accordance with the study conducted by Gambhir et al. were 72% were smokers.[9] In contrast to this, in a study conducted by Patil et al. 57% tobacco users were betel quid and gutka chewers.[10]

In this study oral mucosal lesions were found in 42% percent of tobacco users. In a study conducted by Koothati et al.,[5] in Telangana oral mucosal lesions were found in 30% tobacco users. In contrast to this a study by Patel P et al., conducted in Gujarat only 16% subjects were identified with oral mucosal lesions.[11] Oral mucosal lesions were most commonly seen participants above 40 years of age. This could be due to reduced cell repair due to aging.[12]

Smokers palate or nicotina stomatitis is due to basilar melanosis causes by nicotine. It is characterised by whitish or greyish lesion with pinpoint erythematous areas.[13] Smokers palate was the most common oral mucosal lesion found followed by leukoplakia. This is in accordance with the study done by Saraswathi et al.,[14] and Sujatha et al.,[15] In study conducted by Krishna et al. OSMF was most common lesion found.[16] In present study since there was more number of smokers compared to tobacco chewers the prevalence of OSMF is lesser compared to other lesions.

Oral leukoplakia is seen as white patch or plaque which is associated with smoking habit.[17] In this study leukoplakia was seen in 6.7% participants which is similar to study conducted by Patil R et al., were prevalence of leukoplakia was noted to be 8.2%.[10]

Chewers mucosa was identified in 2.3% participants. This is very similar to a study conducted by Patil et al. where chewers mucosa was observed in 2.2.% participants.[10]

Tobacco pouch keratosis is caused by continuous placement of smokeless tobacco products in the mucobuccal fold. Tobacco pouch keratosis was found in 2.6% patients. This is very less compared to study done by Divyadarshini et al., where prevalence of tobacco pouch keratosis was 25.8%.[18]

Oral cancer was diagnosed in 5(1.4%) patients. This is similar to study conducted by Patil, et al. where 1.6% participants were diagnosed with oral cancer.[10]

In present study oral mucosal lesions were more prevalent in smokeless tobacco users compared to smokers. Studies conducted by Koothati et al.,[5] and Vellappally S, et al.,[19] also showed similar results. Most common lesion found in smokers were smokers palate and in smokeless

tobacco users it was tobacco pouch keratosis. Buccal mucosa and palate were the most common sites found to be involved which is similar to other studies conducted in India.[16]

5. Conclusion

Tobacco usage is associated with various oral mucosal lesions. Most of the oral mucosal lesions may be asymptomatic and patients may be unaware of these lesions. Hence oral screening is important in tobacco users. Also, education of patients regarding consequences of tobacco usage is pivotal. In present study all the participants were made aware of repercussions associated with tobacco use.

6. Ethical Approval

Ref no.: MINDS/SS-IX/15042024/UG-004.

7. Conflict of Interest

None.

8. Source of Funding

None.

References

1. Shivu ME, Shakeel S. Presence of oral mucosal lesions associated with tobacco use â€“ among the patients visiting OPD: A prevalence study, at the oxford dental college Bangalore. *Int J Appl Dent Sci*. 2022;8(2):370–6.
2. Ramasamy J, Sivapathasundharam B. A study on oral mucosal changes among tobacco users. *J Oral Maxillofac Pathol*. 2021;25:470–7.
3. Aishwarya KM, Reddy MP, Kulkarni S, Doshi D, Reddy BS, Satyanarayana D. Effect of Frequency and Duration of Tobacco Use on Oral Mucosal Lesions – A Cross-Sectional Study among Tobacco Users in Hyderabad, India. *Asian Pac J Cancer Prev*. 2017;18(8):2233–8.
4. Kuper H, Adami HO, Boffetta P. Tobacco use, cancer causation and public health impact. *J Intern Med*. 2002;251(6):455–66.
5. Koothati RK, Raju DR, Prasad CLK, Sujanamulk B, Srivastava A, Maloth KN. Prevalence of tobacco associated oral mucosal lesions in the population of Mahabubnagar District of Telangana State: A cross-sectional study. *J Indian Acad Oral Med Radiol*. 2020;32(2):149–53.
6. Preeti S, Raut DK. Prevalence and Pattern of Tobacco Consumption in India. *Int Res J Soc Sci*. 2012;1(4):36–43.
7. Maheswari TNU, Venugopal A, Sureshbabu NM, Ramani P. Salivary micro RNA as a potential biomarker in oral potentially malignant disorders: A systematic review. *Tzu Chi Med J*. 2018;30(2):55–60.
8. Muthukrishnan A, Warnakulasuriya S. Oral health consequences of smokeless tobacco use. *Indian J Med Res*. 2018;148:35–40.
9. Gambhir RS, Veeresha KL, Sohi R, Kakkar H, Aggarwal A, Gupta D. The prevalence of oral mucosal lesions in the patients visiting a dental school in Northern India in relation to sex, site and distribution: A retrospective study. *J Clin Exp Dent*. 2011;3(1):10–7.
10. Patil PB, Bathi R, Chaudhari S. Prevalence of oral mucosal lesions in dental patients with tobacco smoking, chewing, and mixed habits: A cross-sectional study in South India. *J Family Community Med*. 2013;20(2):130–5.
11. Patel P, Patel V. Oral mucosal lesions among residence of a town in North Gujarat. *Natl J Med Res*. 2011;1:3–6.
12. Toum SE, Cassia A, Bouchi N, Kassab I. Prevalence and Distribution of Oral Mucosal Lesions by Sex and Age Categories: A Retrospective Study of Patients Attending Lebanese School of Dentistry. *Int J Dent*. 2018;2018:4030134.
13. Reddy SS, Prashanth R, Devi BKY, Chugh N, Kaur A, Thomas N. Prevalence of oral mucosal lesions among chewing tobacco users: A cross-sectional study. *Indian J Dent Res*. 2015;26(5):537–41.
14. Saraswati TR, Ranganathan K, Shanmugam S, Sowmya R, Narasimhan PD, Gunaseelan R. Prevalence of oral lesions in relation to habits: Cross-sectional study in South India. *Indian J Dent Res*. 2006;17(3):121–5.
15. Sujatha D, Hebbar PB, Pai A. Prevalence and correlation of oral lesions among tobacco smokers, tobacco chewers, areca nut and alcohol users. *Asian Pac J Cancer Prev*. 2012;13(4):1633–7.
16. 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(5):396–401.
17. Erugula SR, Farooq MU, Jahagirdar D, Srija CD, Meruva S, Pratap G. Oral leukoplakia etiology, risk factors, molecular pathogenesis, prevention and treatment: a review. *Int J Contemp Med Res*. 2020;7(11):1–5.
18. Divyadarshini V, Maheswari TNU. Prevalence Of Tobacco Associated Oral Mucosal Lesions In A Private Hospital -A. Retrospective Study. *J Popul Ther Clin Pharmacol*. 2023;30(6):19–27.
19. Vellappally S, Jacob V, Smejkalov AJ, Shriharsha P, Kumar V, Fiala Z. Tobacco habits and oral health status in selected Indian population. *Cent Eur J Public Health*. 2008;16(2):77–84.

Author's biography

Megha B, Senior Lecturer

Ibthisam, Studen

Ireen Babu, Student

Henna K, Student

Hridhya Ramesh, Student

Hiba Mohammed, Student

Cite this article: Megha B, Ibthisam, Babu I, Henna K, Ramesh H, Mohammed H. Prevalence of oral mucosal lesions in tobacco users: An institutional study in south India. *J Oral Med, Oral Surg, Oral Pathol, Oral Radiol* 2024;10(4):285-287.