

ASSOCIATION OF GRADE-I AND GRADE-II OSMF WITH VARIOUS FORMS OF TOBACCO HABIT. A STUDY AT TERTIARY HEALTH CARE CENTRE

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ABSTRACT

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Aim & objective: The aim & objective of this study was to evaluate the association and risk factors of Grade-I and Grade-II OSMF with various types of commercially available tobacco, in dental OPD at a tertiary health care centre. **Materials & Method:** our study was observational type. The detail analysis was done. Entire study was conducted within the duration of one-year. The relevant clinical and demographic details were recorded. **Result:** Among all the 60 subjects, OSMF was significantly associated with various forms of tobacco chewing habit. Chewing of combination of areca nut with pan masala was most common habit among the study group which was probably

associated with OSMF Grade I and II. The percentage of tobacco use was higher in males as compared to females. **Conclusion;** The habit of various forms tobacco chewing showed a statistically significant association to the development of Grade I and II OSMF.

KEYWORDS: OSMF Grade I and II, tobacco, areca nut, pan masala.

INTRODUCTION

Tobacco was first introduced in Europe by Spanish and Portuguese explorers of America in the early 16th century.^[1] The different ways in which tobacco is used lead to considerable

variation in appearance, site and frequency of the lesions associated with the tobacco habit. In Western countries, cigarettes, cigars and pipes are the major ways in which tobacco is used, but chewing tobacco and snuff dipping (smokeless tobacco) have become more popular in recent years. The use of various forms of commercially available tobacco products has been associated with different types of potentially malignant lesions of oral mucosa. The most common types of Tobacco-associated lesions include homogenous and non-homogenous leukoplakia, smoker's palate, oral submucous fibrosis, tobacco pouch keratosis and these lesions may lead to epithelial dysplasia and squamous-cell carcinoma.^[2]

Oral submucous fibrosis is a condition reported mainly from India and is seen in 33% to 40% of patients with oral cancer. Oral submucous fibrosis (OSMF), a chronic disease characterized by fibrosis of oral mucosa is a premalignant condition carrying a high-risk of malignant transformation. Exact etiology and pathogenesis is still unknown but chewing betel quid is considered an important risk factor.^[3]

Oral Submucous Fibrosis (OSMF) are the most commonly occurring PMDs and most likely to transform into malignancy.^[4] According to various studies, the prevalence of oral submucous fibrosis (OSMF) in India varies between 0.03% and 3.2%. It has been estimated that around 43% of cancer deaths are due to predisposing factors such as smoking, smokeless tobacco, betel nut in quid form (pan), alcohol, The most important consideration is the relation between the use of tobacco and related products and the development of lesions. Here we conducted an analytical study on association of Grade-I And Grade-II OSMF with the various forms of tobacco habit at our tertiary health care centre.

MATERIALS AND METHOD

This was observational type of study of one year duration, starting in the year 2018 October. The patients visiting the dental OPD of Indira Gandhi Institute of Medical Sciences, Our research was conducted in full accordance with the declaration of Helsinki. The study protocol was reviewed and approved by the Institutional Ethical Committee. Written informed consent was obtained from all the study participants after explaining the nature and purpose of research. All subjects were examined and those patients in whom Grade I and II Oral Submucous Fibrosis were present clinically were included in the study. Detailed clinical history was taken and intraoral and extraoral examination was done. Personal habits of tobacco chewing, smoking, Khaini, bidi, areca nut, pan masala and various other form of commercially available tobacco were recorded.

Inclusion criteria

1. Patients with positive history of chewing of various commercial preparations of tobacco.
2. Burning sensation on eating spicy food.
3. Restricted mouth opening between 20mm-35mm consisting of Grade I and II (according to Lai. D.R classification).

Exclusion Criteria

1. Patients consisting of Grade III & IV (according to Lai. D.R classification).
2. Patients undergoing any surgery or any drug therapy.
3. Patients with restricted mouth opening due to any other Coexisting diseases.
4. Patients previously treated for the OSMF.
6. Patients with other chronic illness like diabetes, hypertension, and any kind of allergy.
7. Pregnant women.

Statistical analysis

Statistical analysis was done. The results were statistically evaluated by simple frequency table format by EpiInfo software. Descriptive statistics was calculated; mean scores and standard deviation was obtained.

RESULTS

The study population included 60 clinically diagnosed cases of as OSMF Grade I and II. The data was collected, from patients who visited OPD of our department. All subjects were associated with presence of tobacco habit with OSMF were included. Gender wise distribution of all subjects were evaluated Out of 60 participants, 54 of the subjects were male and 6 subjects were female. (Table 1).

Table 1: Genderwise distribution.

OMF_Grade - I & II	Frequency	Percentage %
Male	54	90%
Female	6	10%
Total	60	100*

Out of 60 participants, 90% of the subjects were Male and 10% were female (table 1).

Table 2: Association of Grade I & II with Areca Nut chewing habit.

OMF_Grade		Frequency	Percent	Valid Percent	Cumulative Percent
Grade-I	Valid	No	20	76.9	76.9
		Yes	6	23.1	100.0
		Total	26	100.0	100.0
Grade-II	Valid	No	22	64.7	64.7
		Yes	12	35.3	100.0
		Total	34	100.0	100.0

Among Grade I subjects 23.1% were associated with Areca nut chewing habit were as 35.3% Grade II subjects were associated with Areca nut chewing habit.

Table 3: Association of Grade I & II with Gutkha chewing habit.

OMF_Grade		Frequency	Percent	Valid Percent	Cumulative Percent
Grade-I	Valid	No	24	92.3	92.3
		Yes	2	7.7	100.0
		Total	26	100.0	100.0
Grade-II	Valid	No	27	79.4	79.4
		Yes	7	20.6	100.0
		Total	34	100.0	100.0

Among all subjects 7.7% in Grade I and 20.6% in Grade II showed associated of OSMF with Gutkha chewing.

Table 4; Association of Grade I & II with Khaini chewing habit.

OMF_Grade		Frequency	Percent	Valid Percent	Cumulative Percent
Grade-I	Valid	No	23	88.5	88.5
		Yes	3	11.5	100.0
		Total	26	100.0	100.0
Grade-II	Valid	No	30	88.2	88.2
		Yes	4	11.8	100.0
		Total	34	100.0	100.0

Out of all 11.5% and 11.85% in Grade I and Grade II had the habit of Khaini chewing respectively.

Table 5; Association of Grade I & II with Areca_nut and Pan_masala chewing habit.

OMF_Grade		Frequency	Percent	Valid Percent	Cumulative Percent
Grade-I	Valid	No	12	46.2	46.2
		Yes	14	53.8	100.0
		Total	26	100.0	100.0
Grade-II	Valid	No	21	61.8	61.8
		Yes	13	38.2	100.0
		Total	34	100.0	100.0

It was observed that in Grade I 53.8% of the participants had the habit of chewing both Areca nut and Pan masala. However in Grade II 38.2% were associated with habit of chewing combination of Areca nut and Pan masala. It was found that maximum OSMF subjects were associated with combination of Areca nut and commercially available Pan masala which was statistically significant.

DISCUSSION

Oral Submucous Fibrosis is a condition reported mainly from India and is seen in 33% to 40% of patients with oral cancer. An important risk factor for Oral submucous fibrosis is chewing betel quid. Other considered risk factors are like gutkha, tobacco, pan masalas, areca nut.^[5] The exact etiology and pathogenesis of OSMF is still obscure. As many studies suggest that cessation of tobacco use can result in resolution of tobacco-associated lesions, but untreated such lesions may lead to malignant transformation.^[6] OSMF, a precancerous conditions are mostly seen in healthy individual and hence can be identified by screening. Screening of apparently healthy individuals discloses cancer in early and precancerous stages and treatment are most effective.^[7]

The present study evaluated the risk factors that were responsible for presence of OSMF Grade I and Grade II. The study samples included only clinically diagnosed cases of OSMF. In this study we observed that consumption tobacco and its commercially available brands was found to be a risk factor for OSMF patients. We found that various forms of tobacco was strongly associated with both OSMF. Our study was concurrence with Seema Nayak et al in 2012.^[8]

As stated by Shetty, et al 2019 that the percentage of tobacco use is higher in males compared to females. Our study showed the similar findings on genderwise distribution. 90% belonged to male category and only 10% females had habit. The reason probably could be that males belonging in rural areas who are working outside (laboures, drivers etc) they develop the habit of consuming more tobacco in various forms. Whereas females mostly stay indoor, and tobacco are inaccessible to them.

In our present study 23.1% and 35.3% subjects were associated with Areca nut chewing habit among Grade I Grade II. It was observed that OSMF was strongly associated with habit of chewing areca nut. Our study was similar to Deepa Das et al who stated that OSMF is associated with chewing Areca nut.^[4]

According to the Global Adult Tobacco Survey (GATS) 2010, nearly 34.6% of Indian population consume tobacco of which 29.1% consume tobacco daily. The various forms tobacco consumed in India are Cigarette, bidi, cigar, and hookah, areca nut, Gutka, mawa, and khaini. pan masal.^[9] Many people consume tobacco in any form. However in our study out of the 60 subjects when taken habit history Grade I 53.8% and Grade II 38.2% were associated with habit of chewing combination of Areca nut and Pan masala. It was found that maximum OSMF subjects were associated with combination of Areca nut and commercially available Pan masala which was statistically significant. Other studies states that a round 55% of Indian population consume only smokeless tobacco in the form of gutka, khaini, and zarda. Saraswathi TR et al, stated that the participants were more likely to chew pan masala (commercially available processed areca nut product without tobacco) or gutkha (commercially available processed areca nut product with tobacco). The reason for such habits for consuming tobacco and its various forms could be stress, sleep deprivation, and compulsion to work and earn more for their well being of their family.^[10]

India alone accounts for 1/3rd of the world's oral cancer and has a high rate of premalignant lesions. Most common predisposing factors are smoking, smokeless tobacco, betel nut in quid form (pan), alcohol.^[11] The possible precancerous nature of OSMF was first described by Paymaster, who observed the occurrence of squamous cell carcinoma in one third of his patients with OSMF. The frequency of malignant transformation of OSMF has been reported from 3% to 6%.^[12]

The habit of various forms tobacco chewing showed a statistically significant association to the development of OSMF. Chewing of combination of areca nut with pan masala was most common habit among the study participants which was probably associated with OSMF Grade I and II. The reasons for association of OSMF by combination habit could be probably because even pan masala contains mixture of catechu, betel nuts, areca nuts, lime with flavored mint and cardamom. These are the major components which are genotoxic and carcinogenic. The Areca nuts and betel quid are the main cause of OSMF affecting more in younger groups. Other research conducted by Suresh et al who observed that plain or blended Pan masala causes OSMF and Oral cancer.^[13] The habit of chewing areca nut and pan masala is most prevalent in Indian Sub- Continent These habits are gaining social acceptance with increase in sale and its production.

CONCLUSION

There is an urgent need for awareness and screening programs. The general mass belonging to high and low socio-economic groups should be made aware of the risk of transformation of OSMF into oral malignancy. They should know the facts of carcinogenic tendency of taking tobacco, gutkha, Areca_nut, betel quid and Pan_masala, Khaini. Counseling of such people should be done to have an effective tobacco control habit.

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