

Oral Submucous Fibrosis- Duration and Frequency of Various Habit Factors Correlated with Clinical Grading

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ABSTRACT

Introduction: Over several decades, manier aspects of OSMF have been reported by researchers. Now it is globally accepted as an Indian disease having highest malignant potential than any other oral precancerous lesion. Study aimed to evaluate the effect of duration and frequency of various habit factor on the incidence and severity of OSMF.

Material and Methods: The study included 100 patients with OSMF attending to the L.N.Medical College Bhopal over a period of 9 month. A detailed questionnaire was filled with regarding patient's medical history along with the duration and frequency of gutkha, arecanut, tobacco, pan and smoking.

Result: A total of 100 patients were studied of which 70 (70%) were males and 30 (30%) were females. Grade I OSMF was seen in 53% (53), Grade II OSMF in 47% (47). Gutkha and other arecanut product were most frequently consumed and showed significant risk in the severity of OSMF.

Conclusion: The present study revealed widespread habit of chewing gutkha and other arecanut by product to have shown a major role in occurrence and severity of OSMF.

Keyword: OSMF, Duration and Frequency, Gutkha, Tobacco, Arecanut, Clinical Grading

INTRODUCTION

Oral submucous fibrosis (OSMF) is a chronic, premalignant condition of the oral mucosa which was first described by Schwartz 1952.¹ Pindborg and his associates defined the condition as "an insidious chronic disease affecting any part of the oral cavity and sometimes pharynx. Although occasionally preceded by and / or associated with juxtaepithelial inflammatory reaction followed by fibroelastic changes in the lamina propria, with epithelial atrophy leading to stiffness of the oral mucosa and causing trismus and inability to eat."² OSMF is well recognized potentially malignant condition in the oral cavity and the transformation rate is as high as 7.6% over a period of ten year have been reported from India.³ The large range of patients with OSMF is found to be between 20 and 40 years of age.⁴

In 1952, OSMF was classified as an idiopathic disorder.⁵ Later on various researchers put forward many hypothesis suggesting that OSMF is multifactorial origin with possible aetiological factors are areca nut, chilies, micronutrient deficiencies of iron, zinc and essential vitamins. Demonstration of various auto-antibodies and an association with specific HLA antigens has also been proposed.⁶ Areca nut is the main etiological factor in the causation of OSMF.⁷ The use and dependence on areca nut in the form of pan-masala / Gutkha is rapidly increasing especially among youth in India. Many research has to be done in evidence

based dentistry, the role of duration and frequency of habits to the clinical staging of OSMF.⁸ The main purpose of this study was to correlate these variables of the habit to the clinical grading of OSMF.

MATERIAL AND METHODS

This study included 100 patients with OSMF attending the L.N. Medical College Bhopal over a period of 9 month. A detailed questionnaire was filled with detailed regarding patients name, age, sex, medical history along with the duration and frequency of gutkha, arecanut, tobacco, pan and smoking.

Inclusion criteria

1. Subjects with definitive habit of gutkha, arecanut, tobacco in any form.
2. Subjects with history of at least one packets of chewable tobacco, gutkha, pan, per day at least 9 month.

Exclusion criteria

The subject who were suffering from any other disease or taking any treatment for OSMF or presented with any other oral mucosal lesion were excluded from the study.

The cases were divided into three stages according to the severity of the disease described by Nagesh and Bailoor (1993).⁹

Grade I (mild) subjects had mild blanching, burning sensation on taking spicy food or hot beverages, no restriction in mouth opening, no tongue protusion.

Grade II (moderate) subjects had moderate to severe blanching, mouth opening reduced, tongue protusion reduced, buring sensation also in absence of stimuli, palpable bands felt, lymphadenopathy.

STATISTICAL ANALYSIS

The collected data was sorted, tabulated and subjected to statistical analysis using descriptive statistics.

RESULTS

In the present study 100 OSMF subjects were screened, out

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How to cite this article: Gauravi Jain, Vivek Singhai. Oral submucous fibrosis - duration and frequency of various habit factors correlated with clinical grading. International Journal of Contemporary Medical Research 2018;5(7):G20-G22.

DOI: <http://dx.doi.org/10.21276/ijcmr.2018.5.7.27>

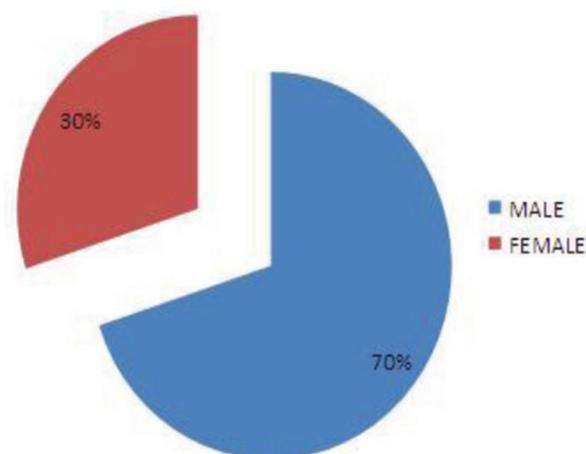


Figure-1:

Gender	Grade I OSMF	Grade II OSMF	Total (out of 100)
Male	40 (57.1%)	30 (42.8%)	70
Female	20 (66.6%)	10 (33.3%)	30
Age range			
15 to 24 years	14 (53.8%)	12 (46.15%)	26
25 to 34 years	6 (60%)	3 (30%)	10
35 to 44 years	33(52.3%)	30 (47.6%)	63

Table-1:

Etiology factor	Grade I OSMF	Grade II OSMF	Total (out of 100)
Gutkha	18 (47.3%)	20(52.6%)	38
Tobacco	9 (45%)	11 (55%)	20
Areacanut	10 (45.4%)	12 (54.4%)	22
Pan	8 (72.7%)	3 (27.2%)	11
Smoking	8 (88.8%)	1 (1.1%)	9

Table-2:

Duration group	Grade I OSMF	Grade II OSMF	Total (out of 100)
Upto 3 year	12 (54.5%)	10 (45.4%)	22
4 to 7 year	25(53.1%)	22(46.8%)	47
8 to 10 year	10 (58.8%)	7(41.1%)	17
>10 year	6 (42.8%)	8 (57.1%)	14
Frequency group			
Upto 2 per day	10 (66.6%)	5(33.3%)	15
3 to 6 per day	15 (34.8%)	12 (44.4%)	27
7 to 10 per day	23 (53.4%)	20 (46.5%)	43
>10 per day	5 (33.3%)	10 (66.66%)	15

Table-3:

of which 70% (70) were males and 30% (30) were females and out of which grade I OSMF was seen in 53% (53) and grade II OSMF in 47% (47) subjects.

The gender and the age of sample were found to be insignificant with no effect on the severity of OSMF (Table 1) whereas duration and frequency of the habit showed a significant variation of the clinical grading (Table 2). The etiological factors of pan and smoking showed non-significance for gradation of OSMF, whereas gutkha, arecanut and tobacco chewing showed significance (Table-2).

DISSCUSION

Oral submucous fibrosis (OSMF) is considered as chronic and potentially malignant condition of the oral cavity that often leads to oral cancer.¹⁰ In our study out of 100 OSMF study population we observed 70% (70) were males and 30% (30) were females, sex predilection conflicting earlier it was thought to be common in female.¹¹ But at present study shows male to female ratio being 2.36:1, which was according to Chaturvedy et al in India.¹² Our study showed that most of the OSMF patients were between 35- 44 years. Reporting an age between 20-39 years; while a study conducted among 1000 patients in Central India.¹³ Gutkha and other areca nut product users like tobacco when compared to pan and smoking users showed a significant occurrence of OSMF in terms of severity of the disease. The reason attributes to the fact that the gutkha and other arecanut product have more dry weight as compared to the other chewing product antioxidant capabilities of pan leaf which is known to be rich in beta-carotene its level decreases in all grades of OSMF. Diet rich in beta carotene is used in the management of OSMF to reduce disease severity. The effect of Smoking consumption alone have not been found in development of OSMF, but their addition to areca nut using can be a risk factor for OSMF.¹⁴

In our study it was found that the patients who were taking the gutkha and other products more than 10 years developed mostly grade II of OSMF. It also found that the frequency of gutkha and other product consuming more than 10 times per day increase the severity of OSMF. Subject who were taking the gutkha and other products less than 10 times per day had grade I OSMF (Table 3). The servity of the disease was found to be significantly high in persons who had history of long duration and fragment eating of Ghutka. Ghutka is manufactured with the combination of arecanut, tobacco, lime, katechu and flavoring compound. Arecanut has high alkaloid arecoline and tobacco ingredients likenitrosamine, which are absorbed more in the patients who keep it for longer durations.¹⁵

CONCLUSION

It is found that the relative risk of OSMF rises with increase duration and frequency of daily consumption of commercially available arecanut and tobacco by product especially in younger age group. Prevention involve taking step to ban all these carcinogenic product from our society. These measure can play a significant role in the elimination of oral premalignant disease like OSMF and hence reduce the disease of oral cancer.

ACKNOWLEDGEMENT

We sincerely thanks to my clinical staff Mr. Manoj Vishwakarma (Hygienist) Mr. Rakesh Kale (Hygienist).

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 26-06-2018; **Accepted:** 02-08-2018; **Published:** 13-08-2018