

Oral Cancer Screening among the Rural Indians: A Community Based Prospective Study

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Abstract

Introduction: India is the second country reported highest number of the oral cancer (OC) cases next to breast cancer. Paan consumption and tobacco, socioeconomical factors such as exposure to silica, smoke and other carcinogenic agents also cause cancer. With this, a community based study was conducted to diagnose OC among the smokers.

Methods: This was a community based ongoing research. Study was conducted in the department of Surgical Gastroenterology, GSL Medical College. Study protocol was approved by the Institutional Ethics committee. Adults > 18 years who have smoking habit were included in this research. With the support of primary health workers and also undergraduate students of this organization, door to door survey was conducted to create the awareness about OC. After getting consent, the oral cavity was examined and the findings were recorded. Biopsy specimen was collected from the lesions and the specimen was transported to the institutional laboratory, OC was confirmed as per the guidelines. The study participants were divided into 2 group; those have habit of smoking tobacco and consume alcohol in first group and non-smokers, non-alcoholics in 2nd group. Chi-square test was used to find the association; P>0.05 was considered to be statistically significant.

Results: In group 1, total 1024 members were screened; OC was diagnosed in 34 (100%) members. Gender wise, 643 (63%) were males. In the diagnosed OC individuals, 1.26 was male female ratio; statistically there was no significant difference. Statistically, there was significant difference between the socioeconomic status and education, respectively. Tongue was leading (16; 47%) site followed by buccal mucosa (9; 26.5%).

Conclusions: The prevalence of the OC is high among those habituated with smoking and alcohol. OC causes significant mortality and morbidity among those patients, when diagnosed late in the course. The treating specialist should pay attention not only teeth, but also oral mucosa which may help in the early diagnosis and treatment.

Keywords: Oral Cancer, Prevalence, Habit.

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Introduction

India is the second country reported highest number of the oral cancer (OC) cases, oral squamous cell carcinoma (OSCC) is the predominant. [1] Small, unusual as well as unexplained growth in oral cavity or mouthparts includes lips, tongue, palate with extension to oropharynx is called OC. The incidence of OC in India is around 77×10^3 new cases 52×10^3 deaths per annum; approximately one fourth of global cases. [2] In India breast cancer is the leading followed by OC. [3] Due to the delay in diagnosis, the incidence of OC is significantly high in India compared to western countries.

OSCC contributes 84 to 97% of the total OC cases in the globe. [1] Tobacco consumption as well as smokeless tobacco popularly known as reverse smoking were reported to be the leading cause of OC. Viral agents also reported to be the significant causative agents of OC; human papilloma virus (HPV) is the leading. [4] Factors such of limited or lack of knowledge, exposure to unusual environmental conditions are the main indicators for the difference in the global incidence of OC.

Periodontal area is very important and high risk factor for this oral malignancy; this is very high in Indian population due to the paan chewing habit. [5] In addition to paan consumption and tobacco, socioeconomical factors such as exposure to silica, smoke and other carcinogenic agents also cause cancer. With this, a community based study was conducted to diagnose OC among the smokers.

Methods

This was a community based ongoing research. Study was conducted in the department of Surgical Gastroenterology, GSL Medical College. Study protocol was approved by the Institutional Ethics committee. Research was carried from March 2021 to January 2023. Informed written consent was taken from all the participants.

Adults > 18 years who have smoking habit were included in this research. With the support of primary health workers and also undergraduate students of this organization, door to door survey was conducted to create the awareness about OC. After getting consent, the oral cavity was examined and the findings were recorded. Biopsy specimen was collected from the lesions and the specimen was transported to the institutional laboratory, OC was confirmed as per the guidelines. [6] The study participants were divided in to 2 group; those have habit of smoking tobacco and consume alcohol in first group and nonsmokers, non-alcoholics in 2nd group.

Statistical analysis: The data were analysed using SPSS version 21. Chi-square test was used to find the association; $P > 0.05$ was considered to be statistically significant.

Results

In group 1, total 1024 members were screened; OC was diagnosed in 34 (100%) members. Gender wise, 643 (63%) were males and the male female ratio was 1.68. Among the OC individuals, 19 were males and the male female ratio was 1.26; statistically there was no significant difference (Table 1).

Table 1: Gender wise incidence of OC among the study participants of group 1; n (%)

Gender	OC	Non OC	Total
Male	19 (1.85)	624 (61)	643 (63)
Female	15 (1.5)	366 (36)	381 (37)
Total	34 (3.3)	990 (97)	1024 (100)
Statistical analysis	Chi square: 0.71189; P = 0.39562; Statistically not significant		

In the confirmed OC patients, statistically there was significant difference between the socioeconomic status and education, respectively.

Tongue was leading (16; 47%) site followed by buccal mucosa (9; 26.5%), palate (5; 14.7%) and gingiva (4; 11.8%); statistically there was significant difference. All the participants were having lesions; Soft tissue thickening

(63%), lumps (54%), trouble in jaw movement (29%), chewing and swallowing (47%), soreness (26%), ear pain (42%), etc. are some of the common observations.

Total 733 members were recruited in group 2; OC was diagnosed in 16 (100%). Gender wise statistically there was no significant difference (Table 2).

Table 2: Gender wise incidence of OC among the study participants of group 2; n (%)

Gender	OC	Non OC	Total
Male	9 (1.2)	411 (56)	420 (57)
Female	5 (0.6)	306 (42)	311 (42)
Total	16 (2)	717 (98)	733 (100)
Statistical analysis	Chi square: 0.71189; P = 0.39562; Statistically not significant		

Discussion

Due to the prevalence of tobacco usage, there is increased concern on OC. Alcohol consumption and betel chewing are the factors which can increase OC incidence. [6] In this research also, the incidence of OC is more those habituated alcohol; the incidence was 3.3% (34) and 2% (16), respectively in the groups.

The mean age of the study patients with OC in this research was 53 years. As per the previous reports >60 years was reported age for OC. [8] But the recent reports declare that 51 years is the common age for OC. [9] Life style as well as taking alcohol along with tobacco are the contributory factors for the reduction in age. In this research also the mean age was 53 years and 60 years, respectively in group 1 and 2. Similar view point was reported in the literature and the risk was reported to be 3 – 9 times among those who consume alcohol and tobacco compared to those habituated neither of these. [10, 11]

Among the OC cases, gender ratio was 1.26 and 1.8, respectively in group 1 and 2. Some reports also published gender ratio of 2:1. [12] But the gender incidence

is almost coming very close. This is because the increase in the diagnosis of OC in female, increased usage of alcohol. Moreover, in the olden days there was very limited number of females were coming forward for the diagnosis as well as treatment.

In this research tongue cancer (47%; 16) was the leading followed by buccal mucosa (9; 26.5%), palate (5; 14.7%) and gingiva (4; 11.8%); statistically there was significant difference. The study patients are habituated to tobacco and alcohol. In this tongue is getting exposed directly. This could be the cause for more number of OC cases. As per the literature from Indian subcontinent, in OC, oral mucosa is commonly affected site followed by tongue. [13, 14] In this research, more number of cases were detected in low socioeconomic status and individuals with less education back ground. But statistically there was no significant difference. Literature already reported that OC incidence is more among those with low socio economic standards. [15]

Conclusions

The prevalence of the OC is high among those habituated with smoking and

alcohol. OC causes significant mortality and morbidity among those patients, when diagnosed late in the course. The treating specialist should pay attention not only teeth, but also oral mucosa which may help in the early diagnosis and treatment.

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