

**Original article:**

## Prevalence of oral cancer at tertiary care hospital in Western Maharashtra

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### Abstract:

**Introduction:** Oral cancer is a major problem in Indian subcontinent and it comes among the top three types of cancers in India. Oral cancer is increasing in Indian subcontinent mainly due to lack of hygiene, tobacco use, smoking and alcohol consumption.

**Material and methods:** The study was carried out in the Department of Pathology of B. J. Government Medical College and Sassoon General Hospital, Pune, India during January 2012 to December 2013 retrospectively. Total 294 histologically confirmed cases of squamous cell carcinoma of oral cavity were studied for gender distribution, age distribution and primary site wise distribution.

**Observations & results:** Out of 1683 malignant lesions, 294 (17.64%) were oral cancers (Squamous cell carcinoma). The male to female ratio was 1.88:1. The largest number of patients were seen in age group 41-50 year. Oral cancer in young patients under forty year forms about 19.04% of all cases. The most common site for oral cancer in our study was buccal mucosa followed by mandibular alveolus, tongue, lips, floor of mouth and palate.

**Conclusion:** Squamous cell carcinomas of oral cavity are more common in males than female. The most common age group involved was fifth decade followed by sixth and seventh decade. The most common sites of primary involvement were buccal mucosa followed by mandibular alveolus, tongue, lips, floor of mouth and palate.

**Keywords:** Oral cancer, squamous cell carcinoma, tobacco use

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### Introduction:

Oral cancer is the major problem in Indian subcontinent and it comes among the top three types of cancers in India<sup>1</sup>. Because of cultural, geographic factors and popularity of addictive habits, the frequency of oral cancer is very high in India. It ranks number one in terms of incidence among men and third among women. Oral cancer is second most common cause of mortality and morbidity after cardiovascular problems. Oral cancer is eleventh most common cancer in the world and two third

deaths due to oral cancer occur in developing world, out of which one third occur in Indian subcontinent.

Oral cancer is increasing in Indian subcontinent mainly due to lack of hygiene, tobacco use, chewing of tobacco leaves and alcohol consumption. In the west, cancer of tongue and floor of mouth is common whereas in Indian subcontinent the cancers of gingival and buccal mucosa are common due to placement of tobacco quid in the oral cavity. This cancer of gingivobuccal complex is termed as Indian oral cancer (Oral cancer Prevention and Research

Foundation, India). Human papilloma virus (HPV) especially types 16 and 18 are known risk factors for oral cancer<sup>2</sup>. In western world, more studies are available about association of HPV and oral carcinomas. In India association of HPV and oral cancer is not so common due to probably less studies has been done.

**Material & methods:**

The present study was carried out in the Department of Pathology of B. J. Government Medical College & Sassoon General Hospital, Pune, which is tertiary care hospital in western Maharashtra. This retrospective study was carried out for the period of two years from January 2012 to December 2013. During this period total 8941 surgical specimens were received in the Pathology Department out of which 1683 (18.82%) were malignant. Out of these 1683 malignant cases, 294 (17.46%) were oral cancers.

The squamous cell carcinomas confirmed histopathologically from buccal mucosa, mandibular alveolus, floor of mouth, tongue, lips, and palate were included as oral cancer in this study. Premalignant lesions and cancers other than squamous cell carcinomas were excluded in this study. Age, gender distribution and clinical site wise distribution was studied.

**Observations and results:**

**Table No. 1: Sex distribution of oral cancer patients**

Sex	No. of patients	Percentage
Male	192	65.30%
Female	102	34.69%
<b>Total</b>	294	100%

The present study was carried out over a period of two years from January 2012 to December 2013 retrospectively. Total 8941 surgical specimens were received for histopathological examination during this period. Out of which 1683 (18.82%) were malignant lesions. Out of these 1683 malignant lesions, 294 (17.64%) were histologically confirmed oral cancers (squamous cell carcinomas) comprising the commonest malignancy. Other most common malignant lesions were carcinoma of cervix (10.99%) followed by carcinoma of breast (10.16%). Out of this 294 cases of oral cancer, 192 (65.30%) were males and 102 (34.69%) were females as shown in table No. 1. The male to female ratio was 1.88:1.

The largest number of patients were seen in age group 41-50 years (25.85%) followed by sixth (23.80%) and seventh (23.46%) decade as shown in table No. 2. Forty seven patients (15.98%) were from fourth decade. Surprisingly nine (3.06%) patients were from third decade. The youngest of all patients affected was 23 year old and the oldest was of 82 years. The buccal mucosa was the most commonly involved site accounting for 131 (44.55%) cases followed by mandibular alveolus in 90 (30.61%) cases as shown in table No. 3. Tongue was involved in 47 (15.98%) cases and lips in 14 cases (4.76%). The floor of mouth (2.72%) and palate (1.36%) were less commonly involved.

**Table No. 2: Age distribution of oral cancer patients**

Age group	No. of patients	Percentage
20-30	09	03.06%
31-40	47	15.98%
41-50	76	25.85%
51-60	70	23.80%
61-70	69	23.46%
>70	23	07.82%
<b>Total</b>	294	100%

**Table No. 3: Site wise distribution of oral cancer patients**

Site	No. of cases	Percentage
Buccal mucosa	131	44.55%
Mandibular alveolus	90	30.61%
Tongue	47	15.98%
Lips	14	4.76%
Floor of mouth	08	2.72%
Palate	04	1.36%
<b>Total</b>	294	100%

**Discussion:**

Cancer is the most common cause of morbidity and mortality in the world today after cardiovascular problems. About six million people die due to cancer every year. It is estimated that by 2020 there will be 15 million new cases every year. Oral cancer is a major problem in an Indian subcontinent where it ranks among the top three types of cancer in the country. Oral cancer is one of the commonest cancer in males in India and accounts for 50-70% of total cancer mortality<sup>3</sup>. In our study, out of 294 cases of oral cancers, 192 (65.30%) were males and 102 (34.69%) were females showing male preponderance which is similar to the study done by Sheno R et al<sup>4</sup>. High proportion of cases among males may be due to high prevalence of tobacco consumption in all forms

among the males. Comparatively females in Indian society are less indulged in tobacco smoking and alcohol consumption; however a rising trend is seen in recent times.

In our study, most affected age group was 41-50 years, accounting for 25.85% followed by 51-60 years (23.80%) and 61-70 years (23.46%) which is similar to the study of Agrawal KH et al<sup>5</sup>. Oral cancer in young patients under 40 years accounts for 19.04% of all cases of oral cancer in our study similar to the study of Agrawal KH et al<sup>5</sup>. Sankaranarayan et al<sup>6</sup> found that the peak-age frequency of occurrence (fifth decade) of oral cancer in India is at least a decade earlier than that described in the western literature. Gupta et al<sup>7</sup> also observed an increase in the incidence of oral cancer in the younger age group.

The high prevalence of addiction to tobacco chewing among young adult men and women may explain the stable trend in oral cancer incidence in this group. The most common site for oral cancer in our study was buccal mucosa (44.55%) followed by mandibular alveolus (30.61%) both contributing 75% of oral cancers. This is similar to the study of Sharma P et al<sup>8</sup> which also showed buccal mucosa as commonest site in western UP. The buccal mucosa and mandibular alveolus were most frequent sites because most of the patients tend to keep tobacco in the form of quid in the buccal sulcus close proximity to alveolus.

In our study tongue was involved in 15.98% cases of oral cancer which is not matching to the study done by Agrawal KH et al<sup>5</sup> in which tongue was the commonest site for oral cancer accounting for 63%. The cancer of lips was seen in only 4.75% cases in our study which is similar to the study done by Sheno R et al<sup>4</sup> (3.05%). Oral cancer involving floor of mouth and palate were less common in our study. The limitation of the study is that only

squamous cell carcinomas of oral cavity were included. Also association of HPV and oral cancer is not available in present study.

#### **Conclusion:**

The aim of our study was to find out the prevalence of oral cancer in tertiary care centre in western Maharashtra. Oral cancer was the most common cancer accounting for 17.64% followed by carcinoma of cervix (10.99%) and carcinoma of breast (10.16%). This might be due to lack of hygiene, tobacco use, smoking and alcohol consumption. The male to female ratio was 1.88:1. The most common age group involved was fifth decade followed by sixth and seventh decade. Oral cancer in young patients under forty years was about 19.04%. The most common sites of primary involvement were buccal mucosa followed by mandibular alveolus, tongue, lips, floor of mouth and palate. The tobacco and alcohol consumption are the main risk factors for oral cancer. Hence public health education against these determinant factors of oral cancer is needed to reduce oral cancer incidence rate.

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