



Research Article

EVALUATION OF ORAL CANCER IN SMOKING AND SMOKELESS TOBACCO PATIENTS IN DAVANGERE DISTRICT POPULATION - A RETROSPECTIVE STUDY

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ABSTRACT

Background: Oral cancer is the most common cancer worldwide. It may affect any anatomical site in the mouth most commonly Buccal Mucosa, Floor of the mouth, Tongue. The use of tobacco and betel quid are most common risk factors of Oral Cancer. **Materials and Methods:** A retrospective review of Patients at Department of Oral Medicine and Radiology, Bapuji Dental College and Hospital who were diagnosed with oral cancer between 2015 to 2020. The total number of Oral Cancer cases with associated demographic information (age, sex, and site), for the 5-year period from 2015 to 2020 was obtained. The statistical analysis consisted of descriptive analysis, including frequency, percentage, and mean \pm standard deviation. **Results:** A total of 115 cases were recorded. Statistically, Oral Cancer was found to be more prevalent in males and individuals over 40 to 50 years of age. The Buccal Mucosa was the most common site of occurrence. **Conclusion:** Males and older people are at relatively higher risk of developing oral cancer. The Buccal Mucosawas the most affected site, but any site in the oral cavity may be involved. Further exploration of the causes of oral malignancy in India is necessary to improve prevention strategies.

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INTRODUCTION

Oral Cancer is associated with high mortality and morbidity. Multiple risk factors have been associated with Oral Cancer, including smoking, alcohol intake, infection, sun exposure, poor oral hygiene, chronic irritability, and genetic disorders¹. Many studies have indicated that males are more commonly affected by Oral Cancer than females². Oral cancers have a significant impact on the patient's quality of life, because of the functional loss that results with the treatment modalities even with the highest care rendered nowadays. In India, oral cancer is one of the most common cancer and constitutes a major public health problem³.

MATERIALS AND METHODS

A retrospective review of Patients at Department of Oral Medicine and Radiology, Bapuji Dental College and Hospital who were diagnosed with oral cancer between 2015 to 2020. The total number of Oral Cancer cases with associated demographic information (age, sex, and site), for the 5-year period from 2015 to 2020 was obtained. The statistical analysis consisted of descriptive analysis, including frequency, percentage, and mean \pm standard deviation. The locations of Oral Cancer cases were classified as buccal mucosa, floor of the mouth, Lip.

STATISTICAL ANALYSIS

The data collected were compiled and fed into spreadsheet. The Statistical Package for Social Sciences (SPSS) version 20 was used for analysis of data. The chi-square test was applied and significance value was fixed at $p < 0.05$.

RESULTS

There were 115 cases of squamous cell carcinoma of the oral cavity confirmed by biopsy from 2016 to 2021. 84 patients (62%) were males and 31 (23%) were females (Table 1).

| SEX | Number of Patients | Percentage |
|--------|--------------------|------------|
| Male | 84 | 62.2 |
| Female | 31 | 23.2 |

The largest number of patients in the study was 30 (22.2%) were seen in the age group 41 to 50 years, followed by the age group 31 to 40 (18.5%). The youngest of all patients affected was 25-year old and the oldest was 84 years. The least number of patients were in the age group less than 30 years (3.7%). The mean age of the patients of oral cancer was 49.73 years. The age distribution is shown in Table 2.

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| AGE (In Years) | Number of Patients | Percentage |
|----------------|--------------------|------------|
| <30 | 5 | 3.7 |
| 31-40 | 25 | 18.5 |
| 41-50 | 30 | 22.2 |
| 51-60 | 23 | 17 |
| 61-70 | 23 | 17 |
| >70 | 9 | 6.7 |
| Total | 115 | |

The site distribution of the lesions in oral cavity has been listed in Table 3. The Buccal Mucosa was the most frequently involved site, accounting for 61 cases (53%), followed by Tongue 29 cases (25.2%). Maxilla was involved in 12 cases (10.4%) and 12 patients had involvement of lip (10.4%).

| Site | Number of Patients | Percentage |
|---------------|--------------------|------------|
| Tongue | 29 | 25.20% |
| Buccal Mucosa | 61 | 53% |
| Maxilla | 12 | 10.40% |
| Mandible | 1 | 0.90% |
| Lip | 12 | 10.40% |
| Total | 115 | |

The Habits of the patients was recorded and is reported in Table 4. The personal habits revealed that most patients of about 48 were tobacco with quid chewers; this was followed by those who had the habit of gutka and tobacco chewing with 20 and 18 cases respectively and smoking of cigarette and bidi which represented 23 cases. Six patients had habit of Gutkha with tobacco.

| Habits | Number of Patients | Percentage |
|---------------------|--------------------|------------|
| Tobacco | 18 | 15.60% |
| Tobacco with Quid | 48 | 41.70% |
| Gutkha with Tobacco | 6 | 5.20% |
| Gutkha | 20 | 17.3% |
| Cigarette | 5 | 4.30% |
| Bidi | 18 | 15.60% |
| Total | 115 | |

The duration and frequency of tobacco use among study participants are shown in Table 5. Smokeless Tobacco was the most prevalent tobacco habit for over fifteen years. The majority of individuals ingested Smokeless tobacco around six to ten times daily (p=0.000).

DISCUSSION

Worldwide, oral cancer is estimated to be the sixth most common cancer, prevalence being highest in India. The World Health Organization (WHO) estimates that tobacco causes nearly 6.4 million deaths and hundreds of billions of dollars of economic damage worldwide each year⁴. Early diagnosis of oral cancer is important as it leads to early institution of therapy that translates in a better prognosis. Late detection and diagnosis is directly proportional to increased morbidity and mortality⁵.

The present investigation indicated that the male-to-female ratio was 2.6:1 with Male predominance. Previous epidemiological studies conducted in the countries, such as India, Brazil, Taiwan, México, Qatar, and Jordan have also reported a high prevalence of Oral Cancer in Males⁶. The consumption of tobacco and betel nut as a means of stimulants renders males more susceptible to oral cancers. Contrarily, in India, consumption of alcohol and tobacco is considered a taboo amongst the female population. However, this custom is nowadays gradually fading away, as females cutting across age and socio-economic lines are turning to these habits⁵.

In a study from Eastern India, mean age was 52.07 years. Predictably in our study, the most affected age group was 41-50 years, youngest of all patients affected was 25-years old and the oldest was 84 years. Gupta et al observed an increase in the incidence of oral cancer in the younger (less than 50 years) age group⁷. Epidemiological study of oral cancer in India by Chattopadhyay et al and Mathew et al reported that in developing countries, oral cancer may affect younger men and women more frequently than seen in the western world⁸. The high prevalence of the addiction to tobacco chewing among young adult men and women may explain the stable trend in oral cancer incidence in this group⁵.

The Buccal mucosa was found to be the most common site of Oral Cancer in the present study, in agreement with previous research western UP, reported that the most common site was buccal mucosa. This may be attributed to the exclusive use of chewing tobacco in the Indian subcontinent compared to smoking in the West.

| | Tobacco | Tobacco with quid | Gutka with tobacco | Gutka | Cigarette | Bidi | P value |
|--------------------------|-----------|-------------------|--------------------|---------|-----------|-----------|---------|
| Duration in years | | | | | | | |
| <10 | 3(16.7%) | 4 (8.3%) | 0 | 0 | 0 | 1(5.6%) | 0.327 |
| 15-Oct | 4 (33.3%) | 6(12.5%) | 3(50%) | 7(35%) | 1(20%) | 2(11.1%) | |
| >15 | 11 (5.6%) | 11(22.9%) | 3(50%) | 11(55%) | 0 | 2(11.1%) | |
| Frequency / day | | | | | | | |
| 1-5 times | 5(27.8%) | 23(47.9%) | 3(50%) | 6(30%) | 3(60%) | 1(5.6%) | 0 |
| 6-10 times | 12(66.7%) | 22(45.8%) | 2(33.3%) | 13(65%) | 2(40%) | 6(33.3%) | |
| >10 times | 1(5.6%) | 3(6.2%) | 1(16.7%) | 1(5%) | 0 | 11(61.1%) | |

Oral Cancer of buccal mucosa is one of the most common cancers along a geographical belt extending from Central to South East Asia because of the practice of chewing "pan", a combination of tobacco, beetle nut and lime⁹.

Pan chewing or Gutkha chewing were the most prevalent habits recorded in our study, the incidence being highest at mucosal sites with prolonged contact with carcinogens. Paan consumed with or without tobacco increased oral cancer risk. The risk of oral cancer was highest among those who used paan with tobacco than those who used it without tobacco. Betel (areca) nut, a component of paan with or without tobacco, was positively associated with oral cancer similar to the review study in Association of Betel nut with Carcinogenesis¹⁰.

CONCLUSION

Oral Cancer occurs most commonly in males and commonest age of presentation was 5th decade of life in our study. Buccalmucosa was the most affected sites due to use of smokeless tobacco, which is a common practice in India. Smokeless form of tobacco consumption was the major form of tobacco consumption in our study. Periodic oral examinations and screenings for oral cancer, as well as education on self-examination of the oral cavity, are essential for early detection of Oral Cancer. Better treatment outcomes are shown if carcinoma is diagnosed in early stage of development.

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