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# Demographic, Histopathological Patterns And Clinical Profile of Oral Squamous Cell Carcinoma At A Tertiary Level Referral Hospital In Jharkhand.

Dr. Vani Singh DNB[1],Dr. Rajanigandha Tudu MD[2],Dr.Anup Kumar MD[3]
[1](Senior resident,Department of Radiotherapy,RIMS,Ranchi)
[2](Senior resident,Department of Radiotherapy,RIMS,Ranchi)
[3](Professor & HOD, Department of Radiotherapy,RIMS,Ranchi)

***Abstract:*** *Oral cancer is one of the most common cancer in India. The aim of this study was to analyze retrospectively the demographic, histopathological and clinical profile of oral squamous cell carcinoma patients who attended a tertiary level care referral hospital in Jharkhand. A total of 324 biopsy proven cases of OSCC were studied. The data was collected for a period of June 2015 to December 2017 . The cases were analyzed in terms of age,gender,duration of symptoms,habits(tobacco and alcohol consumption),site of primary tumour and stage at presentation and the results were formulated to chart the trends. Male to female ratio was 2.48:1. Most of the patients of OSCC belonged to the age group of 51-60 years(26.54%). Buccal mucosa was found to be the most common primary site of involvement. Majority of the patients presented in stage IVA (40.12%). Well differentiated SCC (56.79%)was the most predominant histological variant in this study. This study hence showed that OSCC is very widespread in this region and majority of cases presented at advanced stages due to lack of awareness. Early detection and intervention is required to decrease the morbidity and mortality associated with oral squamous cell carcinoma.*

***Keywords:*** *Oral cancer, Squamous cell carcinoma,Buccal mucosa,Tobacco,Alcohol.*

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## I. Introduction

Oral cancer is a serious and growing problem in many parts of the globe. Oral and pharyngeal cancer grouped together is the sixth most common cancer in the world[(1)]. Global estimates suggest 263900 new cases of oral cancer and 128000 deaths related to oral cancer in 2008[(2)].

Oral cancer is a major problem in Indian subcontinent where it ranks among the top three types of cancer in the country[(3)]. Age adjusted rate of oral cancer in India is high that is 20 per 1,00,000 population and accounts for over 30% of all cancers in the country[(4)]. Squamous cell carcinoma is the most common cancer of head and neck[(5)].

Oral cancer has a multifaceted etiology[(6)]. A plethora of environmental factors has been identified as the risk factors for oral cancer. The most important etiological factors are tobacco chewing, excess alcohol consumption[(7)] and betel quid usage[(8)].These factors act both separately and synergistically[(9)].

Oral cavity has an extensive lymphatic drainage pattern[(10)]. Thus, cervical metastases occurs early with approximately 30% of patients presenting it at the time of diagnosis[(11)].

Oral cavity is readily accessible to visual inspection and palpation ; despite this, most patients present in advanced stage of disease, as symptoms may be vague and painless (patient delay), delay in diagnosis (professional delay) or both. Thus the knowledge of varied presentation and an experienced eye can go a long way in preventing the morbidity and mortality associated with oral cancer[(12)].

The prevalence rate of oral cancer is high in the state of Jharkhand. In the lightof this, the objective of our study was to highlight the demographic , histological pattern and clinical profile of patients with oral squamous cell carcinoma.

## II. Material And Methods

A retrospective study of 324 patients with histologically confirmed diagnosis of oral SCC was carried out in Rajendra Institute Of Medical Sciences, Jharkhand from June 2015 to December 2017. All the patients analyzed in the study were referred to the department of Radiotherapy.

The data pertaining to the patients were collected from the department case records. Data collected was in context of age, sex, site involved, habit, final diagnosis with histological features, duration of symptoms and stage at presentation according to AJCC classification.

## III. Results And Analysis

Biopsy proven 324 cases of oral squamous cell carcinoma who attended our department from June 2015 to December 2017 wasstudied.

231 (71.39%) patients were male while 93(28.70%) were females. The largest number of patients in the study i.e; 86 (26.54%) were in the age group of 51-60 years followed by the age group of 41-50 years (24%). The youngest patient was 23 years and the oldest was 74 years old.

On the basis of primary site of involvement, buccal mucosa was the most common followed by lower alveolus.

On the basis of histopathological patterns, WDSCC was the most predominant pattern observed. Tobacco + Alcohol +Smoking addictive habit constitutes the majority of patients in this study.

Majority of the patients presented as stage IV (42.9%). About 65.74% of patients presented after 6 months and within 9 months of their first symptom.

## IV. Discussion

Oral cancer is a grave public health problem in India. Consumption of tobacco as smoking bidis and cigarettes or in smokeless form as betel quid , pan, gutka , khaini and excessive alcohol consumption are the main etiological agents of oral cancer[7,8]. Studies suggest that all forms of tobacco are carcinogenic and evidence for smokeless tobacco causing oral and oropharyngeal cancer has been recently evaluated[13-15]. Regarding alcohol as an individual risk factor, the International Agency for Research on Cancer (IARC) has identified ethyl alcohol as human carcinogen[16].

Understanding the epidemiology and risk factor for oral cancer can help in early detection and prompt intervention of patients with oral cancer, thus, contributing to a better prognosis. Late detection and diagnosis is directly proportional to increased morbidity and mortality.

The male to female ratio in our study (2.4:1) was similar to that reported by Wildt J et al[17]. Malhotra et al [18] reported a ratio of 2.54:1 and Pinholt et al[19] reported 1.2:1. A Greek study[20] found a ratio of 9.2:1 which was very high in comparison to our study. The male preponderance maybe attributed to the easy acceptance of addictive habits of tobacco and alcohol. On the contrary, in India, alcohol and smoking is considered a taboo for females but a study done by Patel et al suggested increasing trend in young women[21].

Majority of our patients belonged to the age group of 51-60 years (26.54%) corresponding to Shenoi et al[22] Gupta et al [23] observed increase in incidence of oral cancer in the younger age group(<50 years). This can be attributed to ease of sale of pan, gutka and khaini in the country.

Epidemiological studies suggest that the most common subsite of oral cavity cancer is the oral tongue followed by floor of mouth and lip[24]. In our study, buccal mucosa was the most frequent site because most patients tend to keep betel quid (pan) and gutka in the mouth for a prolonged time. A study in Western UP reported buccal mucosa as the most common site, followed by retromolartrigone, floor of mouth, lateral border of tongue, labial mucosa and palate[25].Malhotra et al [18] reported mandibuar alveolus as the commonest site. Tobacco consumed in the form of khaini (quid) kept in the buccalsulcus which is in close proximity to alveolus is the main reason for mandibular alveolus to be affected.

Various classification system are used for grading and staging of oral squamous cell cancer like Broders (1920) classification, TNM staging and AJCC staging system. In our study, we have used Broders classification for histopathoogical grading and AJCC TNM system for staging purpose.In our study, 184 (56.79%) patients had well differentiated carcinoma , 99 (30.56%) patients had moderately differentiated carcinoma while 41 patients had poorly differentiated carcinoma variant. This observation was similar to that noted by Malhotra et al[18].

312 patients were associated with combined addiction of tobacco, smoking and alcohol consumption. Only 12 patients were reported to have no addiction habits.

Tobacco is easily available in India in the form of gutka, zarda, kharra, khaini and pan. Recently, current marketing of tobacco and gutka in sachet has become very popular among young Indians. Typically, the pan or gutka is kept in cheek and chewed or sucked for 15-30 minutes, with some users keeping it overnight. In India, tobacco habit occurs early in life through imitation of family members or peers. Tobacco is a known risk factor for oral cancer with a strong dose response effect[16].

Alcohol consumption is very rampant in Jharkhand. Country liquor "handia" is a rice beer which is made using 20-25 herbs, which act as fermentors[29]. It is cheap and easily available and finds consumption with people from low socioeconomic status. According to study by Maasland et al[30], those consuming >30 g/day compared to no alcohol consumption were 6.39 times more likely to develop oral cavity cancer.

In our study, 215 patients were reported to have combined addictive habits of cigarette smoke, tobacco chewing and alcohol. Alcohol behaves as a solvent for carcinogenic cigarette smoke and allows for better mucosal absorption[16,30]. Heavy drinkers who smoke >20 cigarettes per day were 8.28 times more likely to develop head and neck cancer[30]. Alcohol leads to a dangerous synergy of expression of disease as suggested

by Sanghvi et al[31]. The risk of oral cancer is about 4 folds in chewers, 2 folds in smokers and 4 folds in chewers and smokers both.

Maximum number of patients reported to us in stage IVA i.e; 130 patients(40.12%) followed by 113(34.88%) stage III patients. The number of patients reporting between 6-9 months of appearance of symptoms was maximum i.e; 65.74%. This delay in presentation can be attributed to lack of awareness about self, illiteracy, poverty and possibly resorting to natural remedies. Most of the patients work on daily wages, hence loss of working days means loss of wages, hence they report late as compared to western data[31].

The delay in diagnosis is correlated to patient delay and professional delay or both. The time interval between onset of symptoms and start of treatment depends on various factors such as patient's behaviour, clinical course of illness and quality of health services[32].

## V. Conclusion

An epidemiological profile of the population of Jharkhand and surrounding areas for the patients of oral SCC has been compiled.

Oral cancer is a grave public health problem in India. A number of factors have been associated with this health problem. Firstly, the diagnosis is done at a late stage which results in low treatment outcome.Secondly, inadequate health services and access to trained healthcare providers aggravate the problem. Thirdly, mostly affected are from low socioeconomic group as they have high exposure to risk factors and lastly, presentation at advanced stages reduces survival.

This study highlights the recent epidemiological data and trends of oral cancer of Jharkhand, thereby facilitating health policy makers in addressing the elimination of risk factors and lack of awareness about the same.

Despite the fact that oral cancer can be prevented, treated and controlled, there exists a significant gap in public's knowledge, attitude and behavior. Efforts should be made for provision of easy accessible detection and treatment services. Prevention through action against risk factors especially tobacco and alcohol will be a key to reduce the burden among the population.

**TABLE 1:-** AGE DISTRIBUTION

| AGE GROUP | NUMBER | PERCENTAGE |
|---|---|---|
| 21-30 YEARS | 27 | 8.33% |
| 31-40 YEARS | 66 | 20.37% |
| 41-50 YEARS | 78 | 24.07% |
| 51-60 YEARS | 86 | 26.54% |
| 61-70 YEARS | 54 | 16.67% |
| >70 YEARS | 13 | 4.01% |

**TABLE 2:-** SEX DISTRIBUTION

| SEX | NUMBER | PERCENTAGE |
|---|---|---|
| MALE | 231 | 71.39% |
| FEMALE | 93 | 28.70% |

**TABLE 3:-** PRIMARY SITE

| SITE | NUMBER | PERCENTAGE |
|---|---|---|
| BUCCAL MUCOSA | 109 | 33.64% |
| MANDIBULAR ALVEOLUS | 95 | 29.32% |
| MAXILLARY ALVEOLUS | 13 | 4.01% |
| TONGUE | 82 | 25% |
| LIP | 8 | 2.47% |
| FLOOR OF MOUTH | 7 | 2.16% |
| PALATE | 4 | 1.23% |
| RETROMOLAR TRIGONE | 7 | 2.16% |

**TABLE 4:-** HISTOPATHOLOGICAL DISTRIBUTION

| HISTOLOGY | NUMBER | PERCENTAGE |
|---|---|---|
| WDSCC | 184 | 56.79% |
| MDSCC | 99 | 30.56% |
| PDSCC | 41 | 12.65% |

**TABLE 5:-** DURATION OF SYMPTOMS

| DURATION | NUMBER | PERCENTAGE |
|---|---|---|
| 3-6 MONTHS | 86 | 26.54% |
| 6-9 MONTHS | 213 | 65.74% |
| 9-12 MONTHS | 19 | 5.86% |

| | | |
|---|---|---|
| > 12 MONTHS | 6 | 1.85% |

**TABLE 6:-** STAGE AT PRESENTATION

| STAGE | NUMBER | PERCENTAGE |
|---|---|---|
| I | 1 | 3.40% |
| I | 6 | 18.83% |
| I I | 1 | 3 4.8.8% |
| I V A | 1 | 3 0 4 0.1 2% |
| I V B | 9 | 2.78% |

**TABLE 7:-** PERSONAL HABITS

| HABITS | NUMBER | PERCENTAGE |
|---|---|---|
| Tobacco | 4 | 6 14.19% |
| Alcohol | 2 | 3 7.10% |
| Smoking | 2 | 8 8.6.4% |
| Tobacco+Smoking | 6 | 2 19.1.3% |
| Tobacco+Alcohol | 5 | 1 15.7.4% |
| Tobacco+Alcohol+Smoking | 1 0 | 2 31.4.8% |
| No habit | 1 | 2 3.7.0% |

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