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## A study of epidemiological and clinical parameters of patients with oral cancer in a tertiary hospital

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### Abstract

**Background:** Oral cancer is the 3<sup>rd</sup> most common cancers in India. Tobacco is the most important risk factor. Increasing use of tobacco has made oral cancer a major public health issue. This study aims to get a profile of oral cancer in a tertiary hospital.

**Methods:** This is a prospective study done from January 2014 to June 2015. 106 patients who were above the age of 18 who were previously untreated and biopsy proven were included. Epidemiological factors like age, sex, premalignant conditions, duration of symptoms, site of primary, clinical stage, level of metastases were studied.

**Results:** Oral cancer was seen most in males 63(59.4%). It was most commonly seen in sixth decade of life. Betel nut was the most important risk factor. Oral sub mucous fibrosis was the most common premalignant condition. Tongue was the most common primary site. Clinically most patients presented in stage IV. Level I was the most involved lymph node station.

**Conclusions:** Oral cancer to a great extent can be prevented. Public awareness and education from the grassroots about the ill effects of tobacco would go a long way in dealing with the health menace that oral cancer has become.

**Keywords:** Oral cancer, tobacco, smoking, oral submucous fibrosis

### Introduction

Oral cancer refers to cancers occurring in the oral cavity and includes the mucosal lip, buccal mucosa, tongue, floor of mouth, upper and lower gingival and hard palate. It is among the third most common cancers in the India <sup>[1]</sup>. It is the seventh most common cancer in the world <sup>[2]</sup>. There are many risk factors for oral cancer but tobacco is the prime culprit. The use of tobacco in forms such as cigarettes, beedis and betel nut are especially high and on the rise in India. Oral cancer has now become a major public health issue in India. Oral cancer usually presents in advanced stages of the disease as patients often fail to go to a doctor until they become symptomatic.

The study aims to know the epidemiological and clinical features of patients that presented to a tertiary hospital in south India.

### Methods

The study was a prospective study done from January 2014 to June 2015 in which 106 consecutive patients who were previously untreated, histologically proven to have squamous cell carcinoma of the oral cavity and above the age of 18 years and consented to participate were included.

### Inclusion Criteria

Previously untreated, histologically proven, squamous cell carcinoma of the oral cavity

### Exclusion Criteria

1. Non-squamous cell carcinoma
2. Prior treatment of head and neck cancer by surgery, radiotherapy and chemotherapy
3. Prior surgery in the neck.
4. Patients below the age of 18 years
5. Not willing to give an informed consent

**Correspondence**

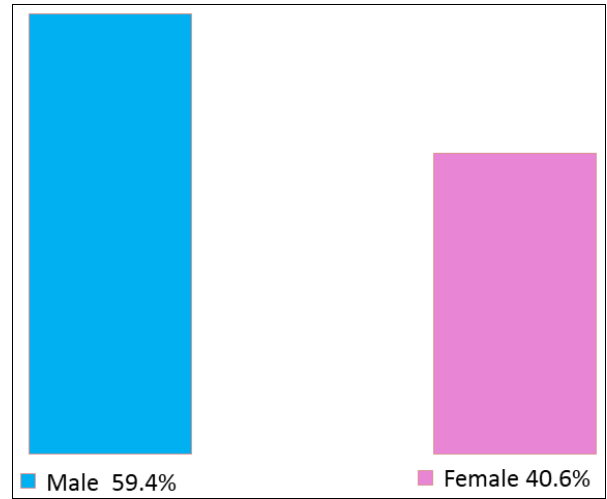
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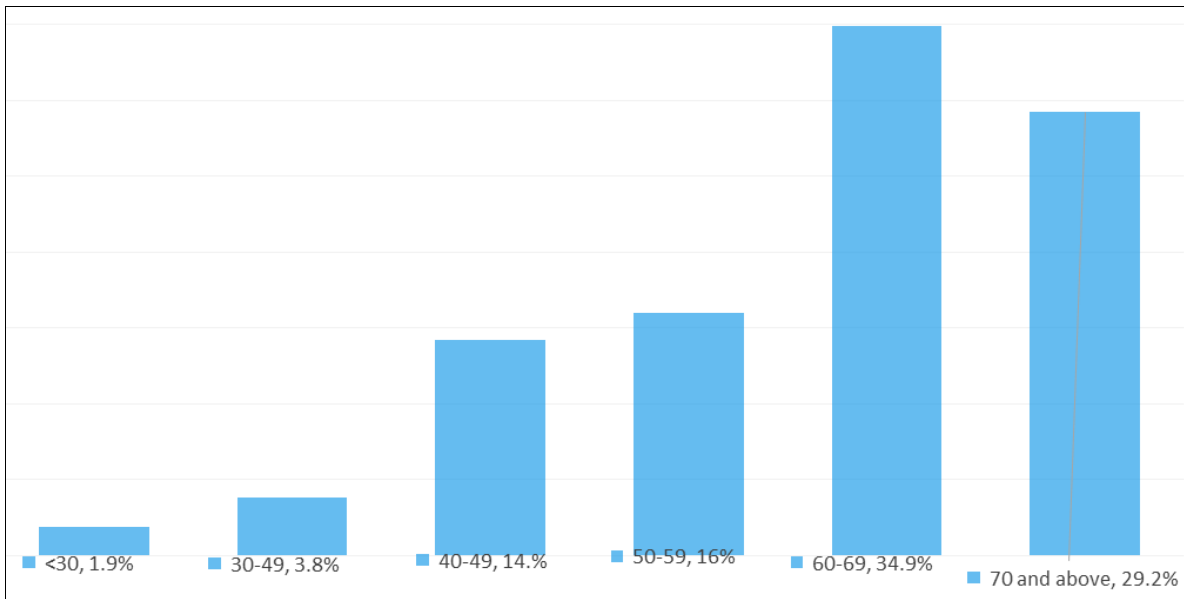
**Results**

The study group consisted of 63(59.4%) males and 43(40.6%) females. The male female ratio was 1.4:1. Majority of the patients 37(34.9%) were in the sixth decade of life. Only two patients (1.9%) presented before the age of 30. The mean age of patients was found to be 61.6 with a range of 27 to 85 years. The habits of patients included in the study are smoking, alcohol, pan parag, betel nut chewing and tobacco chewing. 22(20.8%) smoked only cigarettes while 6 (5.6%) smoked only beedis. 18 patients (17%) smoked cigarettes and beedis. 28(26.4%), 42(39.6%), 11(10.4%), 36(34%) out of 106 had tobacco chewing, betel nut, chewing, pan parag and alcohol respectively. The premalignant lesions present were leucoplakia, erythroplakia, oral submucous fibrosis. They were present either singly or in combination. The most common premalignant lesion, oral submucous fibrosis was found in 41(38.7%) patients. 74(70%) of patients had symptoms within 6 months. Tongue was the most common site for primary tumour 45(42.5%). T2 stage was the commonest stage 43(40.6%). N2 was the most frequent N stage 42(39.6%). Stage 4 was the commonest clinical stage 51(48.1%). 70 out of the 106 had clinically node positive necks. Level I 57(81.4%) was the most frequent level of

metastases to the neck.



**Fig 1:** Sex Distribution



**Fig 2:** Age Distribution

**Table 1:** Premalignant lesions

Premalignant condition/Lesion	Frequency	Percentage
Nil	23	21.7
Leucoplakia	8	7.5
OSMF	41	38.7
Leucoplakia + OSMF	22	20.8
Erythroplakia + OSMF	2	1.9
Others	10	9.4
Total	106	100

**Table 3:** Clinical T stage

T Stage	Frequency	Percentage
T1	24	22.6
T2	43	40.6
T3	23	21.7
T4	16	15.1
Total	106	100

**Table 2:** Site of primary tumour

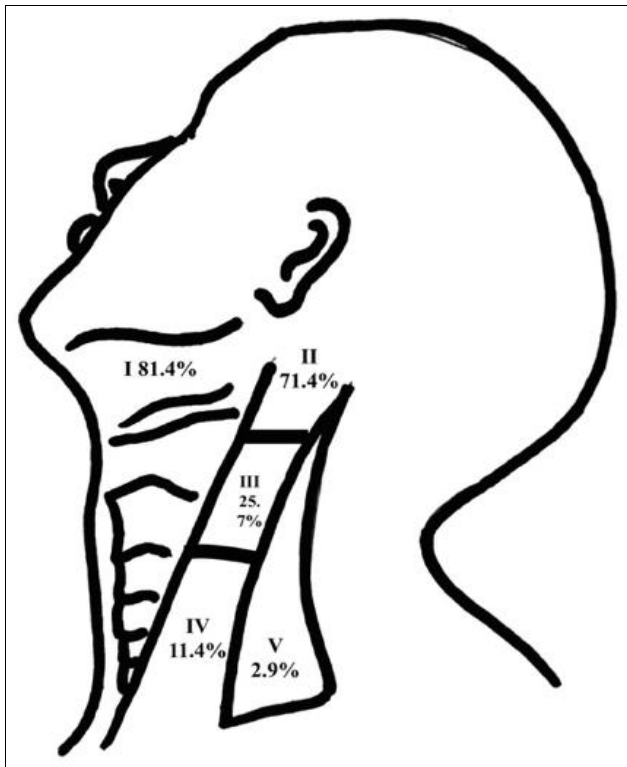
Site	Frequency	Percent
Buccal mucosa	34	32.1
Tongue	45	42.5
Lower alveolus	18	17
Floor of mouth	4	3.8
Upper alveolus	4	3.8
Multiple sites	1	0.9
Total	106	100

**Table 4:** Clinical N stage

N Stage	Frequency	Percentage
N0	36	34
N1	28	26.4
N2	42	39.6
N3	0	0
Total	106	100

**Table 5:** Clinical Stage

Composite Stage	Frequency	Percentage
Stage I	21	19.8
Stage II	11	10.4
Stage III	23	21.7
Stage IV	51	48.1
Total	106	100

**Fig 3:** Clinical nodal involvement by level

### Discussion

In our study majority of the patients presenting with oral cancers were in the seventh decade of life irrespective of the site affected. The mean age of patients with oral cancer was 61.6 years. Shah *et al.* has found mean age to be 60 years in patients with oral cancer [3]. The mean age of patients reporting with oral cancer in Kerala was found to be 57.8 years by Sankaranarayanan *et al.* [4]

As in the literature, and in the present study, men are more commonly affected with oral cancer. This is probably because more men are habituated to tobacco and betel nut chewing in our population compared to women [4, 5]. The use of smoked and smokeless tobacco is the prime risk factor for oral cancer and incidence in the age group less than 30 years is alarming and is a sign of increased consumption by the youth in India.

Patients with cancer of the tongue were the most common to report early when the lesion was relatively small (T2). This could be attributed to the functional importance of the tongue. Even a small growth or ulcer causes discomfort when it occurs on the tongue. These results are contrary to that of Pradhan who reported buccal mucosa cancer to be common in India with T4 tumours being the most common [6].

Nodal metastases was clinically detected in 70(66%) patients which is higher what Lee *et al.* and Woolgar reported [7, 8]. This could be due to the false positive results obtained from clinical examination alone.

Clinically stage IV disease was the commonest 51(48.1%). This could be due to the late presentation to the hospital by majority of patients.

Squamous cell carcinoma of the oral cavity usually metastasizes to levels I-V. In our study shows level I to be the most commonly involved lymph node station in patients with oral cancer (78.1%), closely followed by level II. This is in line with what Woolgar reported as a simple overflow from levels I to II but contrary to what Sanghvi reported [9, 10].

### Conclusions

Oral cancer to a great extent could be prevented. It usually is seen in the elderly at an advanced stage which would lead to lot of morbidity. Delayed presentation is due to public unawareness and low socioeconomic status. What was alarming was the incidence in the young age group which was most likely due to tobacco use. Easy availability and increased use of tobacco products is a curse to society. It is imperative that governments bring in strong laws to should weigh down the sales and distribution of tobacco products and give emphasis to awareness campaigns about the problems of tobacco. Children should be educated from home and in schools about the ill effects of tobacco. This is the only way a major public health problem like oral cancer can be solved.

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#### Declarations

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Ethical approval: Yes

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