

A RETROSPECTIVE STUDY ON ETIOLOGICAL FACTORS, PATIENT CHARACTERISTICS AND PRESCRIPTION PATTERN OF ORAL CARCINOMA IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Objectives: Oral cancer is a public health burden in the Indian subcontinent. It ranks number one in terms of incidence among men and third among the women. Because of cultural, ethnic, geographic factors, and the popularity of addictive habits, the frequency of oral cancer is on the rise. Hence, the objective of the study was to determine the prevalence, risk factors and treatment pattern of oral carcinoma in a tertiary care hospital.

Methods: It was a retrospective study conducted in the Department of Oncology, with a sample size of 337 patients and study duration of 36 months. The data were collected using a standard data collection form.

Results: The study population includes 233 (69%) males and 104 (31%) females. Most patients (73%) were among an age group of 56 years and above. Most of the study population were tobacco chewers and smokers (66%), non-vegetarians (76%) and had a rural area of residence (57%). Floor of tongues was the commonest site identified in 119 (35%) patients followed by alveolus 59 (18%), tongue, 40 (12%), palate 29 (9%), floor of mouth 32 (9.4%), lip 23 (7%), buccal mucosa 21 (6%), and retromolar Trojan 14 (4%). Based on the stages of tumor, 158 (47%) of oral cancer were diagnosed at localized, 134 (40%) at regional, 45 (13%), and at the distant stage.

Conclusion: The present study revealed several aspects of public uncertainty and ignorance with regard to the causation of oral carcinoma, which needs to be, emphasized in future education programs.

Keywords: Oral cancer, Surgery, Chemotherapy, Radiotherapy.

INTRODUCTION

Oral cancer is a burden of significant public health importance in India [1]. It typically occurs in the elderly men during the fifth through the eighth decade of life and is rarely seen in young people [2]. Various etiological factors such as tobacco and tobacco related products, alcohol, genetic predisposition and hormonal factors are suspected as possible causative factors of oral cancer. The highest incidence of oral cancer in the Indian subcontinent is mainly due to lack of hygiene, tobacco use, chewing tobacco leaves, smoking, and other factors. Tobacco uses, including pipe, cigar, cigarettes, chewing tobacco are the well-established causes of oral cancer. Chewing betel nut is a common practice in India [3]. The consumption of alcohol, especially when combined with cigarette smoking increases the risk factor for oral cancer. Characteristics of personal history, such as age, sex, ethnic background and occupation are the important factors in assessing the risk of oral cancer. Long-term exposure to sunlight is a crucial risk factor for lip cancer [3,4]. Other factors, including lack of consumption of green, yellow, fresh fruits and vegetables rich in beta-carotene and not using methods of sun protection such as lip sunscreen and hats may enhance the cancer risk. More recent evidences show that human papillomaviruses are a major risk factor for oral cancer. Early diagnosis of the disease can greatly increase a patient's chance of survival, as the mouth is very accessible for a clinic or even self-examination [5-9].

In most cases, oral cancer is diagnosed at later stages which result in low treatment outcomes and considerable costs to the patients whom typically cannot afford the treatment. Middle and low income countries also have inadequate access to trained providers and limited health services [2]. Earlier detection of oral cancer offers the best chance for long-term survival and has the potential to improve treatment outcomes and can make the healthcare affordable. Oral cancer affects the lower socioeconomic groups that are people from the lower socioeconomic strata of society due to higher exposure to risk factors such as tobacco

use. Majority of cases present to a healthcare facility at later stages of cancer subtypes, thereby reducing chances of survival due to delays in diagnosis [1,10]. The management of oral cancer has undergone a radical change in the past 10 years and continues to evolve rapidly. Conventional treatments include surgery, radiotherapy, and chemotherapy. Early Stages I and II can be treated with surgery or radiation, but in advanced Stages III and IV therapy is complex and multiple modalities of treatment are required [3,11]. Earlier detection of oral cancer offers the best chance for long-term survival and has the potential to improve treatment outcomes and can make the health care affordable [1,2,10].

METHODS

It was a retrospective study conducted at a tertiary hospital with study duration of 36 months. 337 patients were included in this study based on the inclusion and exclusion criteria. The patients were enrolled in the study following the inclusion and exclusion criteria mentioned below.

Inclusion criteria

- Both male and female
- All inpatients and outpatients
- Age group patients above 18 years were included in the study.

Exclusion criteria

- Patients with an incomplete data
- Patients having another pre-existing malignancies
- Patient whose biopsy reports not available
- A patient who is not willing for the treatment.

The data were collected using a standard data form. It included the demographic details of the patient, information regarding the disease, lifestyle and risk factors, drug treatment chart and details of the laboratory investigations.

RESULTS

A total of 337 patients above the age of 18 years with oral carcinoma for a period of 36 months were retrospectively analyzed. Table 1 represents the various etiological risk factors probed in the medical history. There were 233 (69%) male and 104 (31%) female patients in the study population. Most patients (73%) were among an age group of 56 years and above. Family history of cancer was present in 125 (37%) of patients and absent in 212 (63%) patients. Based on the area of residence, 193 (57%) patients were from the rural area and the remaining 144 (43%) of patients were from urban areas. Most of the patients were non-vegetarians 256 (76%) and others 81 (24%) were vegetarians. Table 2 shows the distribution of habits among the study population. We found that most of the patients were tobacco smokers and chewers (66%) which are established risk factor of oral cancer. Most patients diagnosed oral cancer had a poor oral hygiene 129 (38%), followed by very poor oral hygiene 112 (33%) and good oral hygiene 96 (29%). Table 3 depicts the distribution of patients as per condition and diagnosis. Floor of tongues was the commonest site identified in 119 (35%) patients followed by alveolus 59 (18%), tongue, 40 (12%), palate 29 (9%), floor of mouth 32 (9.4%), lip 23 (7%), buccal mucosa 21 (6%), and retromolar Trojan 14 (4%). Based on the stages of the tumor, 158 (47%) of oral cancer were diagnosed at localized, 134 (40%) at regional, 45 (13%) at the distant stage. Table 4 shows the treatment pattern of patients with oral carcinoma. Majority patients were treated with Surgery as the primary modality. It was employed in 139 (41%) patients. Surgery was followed by surgery, chemotherapy and radiation 64 (19%), surgery and radiotherapy 54 (16%), chemotherapy 49 (15%), chemotherapy and radiotherapy 31 (9%).

DISCUSSION

Worldwide, oral cancer is estimated as the sixth most common cancer and the highest incidence in Indo-Pakistan subcontinent [12]. The incidence of oral cancer in India is on a rise with a male population, compared with the female population [13-16]. Studies reported that the peak incidence of oral cancer is in the age group above 60 years which was similar to the results of our study. Study reports showed that percentage of tobacco usage, smoking, and alcohol consumption was 10.2, 60.6, and 33.6, which was almost similar to our results [14,15]. Andre *et al.* suggested that 66% of oral cancer patients had associated habits of tobacco, alcohol, and smoking [17]. Goyal *et al.* conducted a similar study and found that the male-female ratio was 2.8:1 and most tumors were seen in buccal cavity followed by the tongue. They also found a strong association with tobacco use and betel quid [18].

Warnakulasuriya *et al.* reported that major risk factors associated with oral cancer are tobacco, alcohol, betel nut, hereditary and familial risk, dietary pattern, oral hygiene, HIV infection, medical nicotine use, and lower economic strata [8]. Our study revealed that the patients affected with oral cancer were non-vegetarians and had a poor oral hygiene, but most of them had a negative family history of cancer, this may be due to the smaller sample size of our study population. The age-specific incidence, risk factors and poor oral hygiene in the study suggest the importance of regular oral examination, cancer screening programs and health awareness of cancer. Talamini *et al.* conducted a case-control study and found that the general condition of mouth as indicated by gum bleeding, tartar deposits, mucosal irritation was worse in oral cancer cases than controls [19].

In the present study, it was detected that most common site of oral cancer was floor of the tongue, whereas other studies found that buccal mucosa was the commonly affected site in their study reports [17]. Most of the studies from India suggest that most of the cancer were moderately or poorly differentiated at the time of initial diagnosis reported by Mehrotra *et al.* [20]. However, this was not similar to our study reports and most of the patients affected had localized or regionalized stage of the tumor. This may be due to improved diagnostic facilities and awareness programs, motivating the discontinuation of tobacco and other harmful products. Since most of the tumors were

Table 1: Assessment of the etiological and risk factors probed in the medical history

Characters	Number (N)	Percentage
Age group at initial diagnosis (years)		
18-39	48	14
40-55	43	13
56 and older	246	73
Gender		
Male	233	69
Female	104	31
Area of residence		
Rural	193	57
Urban	144	43
Family history of cancer		
Positive	125	37
Negative	212	63
Diet		
Vegetarian	81	24
Non-vegetarian	256	76

Table 2: Distribution of habits among the study population

Habit	Number (N)	Percentage
Tobacco chewers	173	51
Tobacco smokers	209	62
Tobacco chewers+smokers	221	66
Non-chewers+non-smokers	69	20
Alcoholics	191	57
Alcoholics+tobacco consumers	199	59
Non-alcoholics	104	31

Table 3: Distribution of patients as per clinical condition and diagnosis

Condition	Number (N)	Percentage
Oral hygiene		
Good	96	29
Poor	129	38
Very poor	112	33
Carcinoid site		
Tongue	40	12
Alveolus	59	18
Lip	23	7
Palate	29	9
Retromolar trigone	14	4
Buccal mucosa	21	6
Floor of tongue	119	35
Floor of mouth	32	9
Stage of tumor		
Localized	158	47
Regional	134	40
Distant	45	13

Table 4: Treatment pattern of patients with oral carcinoma

Treatment	Number (N)	Percentage
Surgical	139	41
Chemotherapy	49	15
Radiotherapy	0	0
Surgery+Radiotherapy	54	16
Surgery+Chemotherapy	0	0
Radiotherapy+Chemotherapy	31	9
Surgery+Radiotherapy+Chemotherapy	64	19

detected in the localized and regionalized stage, surgery was the main treatment modality given to the patients. Our study reported an increased early detection and therapeutic intervention compared to other studies [20]. The epidemiology and risk factors can help

in the early detection, better treatment for patients [12]. Increased awareness of causative factors, promotion of education programs in lower economic status and screening of oral cancer for patients above 50 years can help in decreasing the burden of oral carcinoma [21,22].

CONCLUSION

Oral cancer will remain a major health problem until efforts toward early detection, and prevention is possible. The present study revealed a several aspects of public uncertainty and ignorance with regard to the causation of oral carcinoma, which needs to be emphasized in future education programs [23,24]. Earlier detection of oral cancer offers the best chance for long-term survival and has the potential to improve treatment outcomes and make health care affordable. Improved diagnostic facilities and awareness programs for motivating the discontinuation of tobacco and other harmful products and oral cancer screening programs can significantly reduce the ecological and risk factors [7,8,25].

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