Journal of Monno Medical College
June 2023; 9 (1):11-14

Original Article

Risk Factors of Oral Carcinoma in a Tertiary Level Hospital in Bangladesh

Mohammad Sazzadul Haque[1], Abu Yusuf Fakir[2], Md. Raqibul Alam[3]

[1]Assistant Professor, Department of ENT and Head Neck Surgery, Tairunnessa Memorial Medical College and Hospital, Kunia, Gazipur, Bangladesh; [2]Professor, Department of Otolaryngology and Head Neck Surgery, Dhaka Medical College, Dhaka, Bangladesh; [3]Assistant Professor, Department of ENT and HNS, Sheikh Hasina Medical College, Tangail, Bangladesh.

Abstract

Background: Cancer continues to be a major health problem despite advances in medical technology for its diagnosis and treatment. Oral cancer is the eighth most common cancer in the world. Oral cancer is a multifactorial disease- smoking, betel-nut and betel-leaf chewing habit, bad oral hygiene, and drinking alcohol are the most important factors associated with oral cancer ***Objectives:*** To identify the risk factors of oral cancer in a tertiary level hospital in Bangladesh. ***Methods:*** A total of 52 patients, aged between fifth to seventh decades, were included in this observational type of cross-sectional study. The study was conducted over the period of six months, from March to August, 2016, in the department of ENT & Head-Neck surgery in Dhaka Medical College Hospital, Dhaka. Patients were randomly assigned to one of three groups by card sampling. ***Results:*** Among the 52 patients with oral cavity carcinoma, 30(57.69%) were males and 22(42.31%) females. Most patients were from rural areas (30, 57.69%), including agricultural workers 17(32.69%), daily labourers (5, 9.62%), fishermen (3, 5.77%) and others (5, 9.62%). High-risk habits were prevalent among the cases, with 24(46.14%) engaged in Pan (betel leaf) chewing and 15(28.85%) in smoking. Clinical features included ulceration, neck lump, pain, swelling, dysphagia, and bleeding. The most affected areas were buccal mucosa (19, 36.54%) and oral tongue (14, 26.92%). Histopathologically, 27(42.31%) were well-differentiated, 22(51.92%) moderately differentiated, and 3(5.77%) poorly differentiated squamous cell carcinoma. The study provides insights into the demographics and characteristics of oral cavity carcinoma patients. ***Conclusion:*** Personal habits like pan, betel-nut, tobacco chewing, ignorance, lack of proper education of oral hygiene, lack of medical facilities and poor referral system are the common factors for aggressiveness of the disease.

Key Words: Oral Cancer, Risk Factors of Oral Cancer, Presentation of Oral Cancer

Received: 07 December, 2022; **Manuscript ID:** 11361222OA; **Accepted:** 12 April, 2023

DOI: https://doi.org/10.3329/jmomc.v9i1.69020

Correspondence: Mohammad Sazzadul Haque, Assistant Professor, Department of ENT and Head Neck Surgery, Tairunnessa Memorial Medical College, Konia (Targach), Gazipur, Bangladesh. E-mail: sazzad.h.mitul@gmail.com, Cell: +880 1916-438183.

How to cite this article: Haque MS, Fakir AY, Alam MR. Risk Factors of Oral Carcinoma in a Tertiary Level Hospital in Bangladesh. J Monno Med Coll. 2023 June;9(1):11-14.

.

Introduction

Oral carcinoma, commonly known as oral cancer, is a significant public health concern globally, with a substantial impact on morbidity and mortality rates. The oral cavity is the upper most part of the digestive tract and is lined by stratified squamous epithelium of varying degrees of keratinization. It starts at the mucocutaneous junction of lips (the vermilion border) extending posteriorly to junction of the hard palate and soft palate superiorly, anterior fauces laterally and the junction of the anterior two thirds and posterior third of the tongue inferiorly.[1] Primary tumours of the oral cavity may be derived from mucosa, salivary glands, neurovascular tissues, bone or dental tissue. Over 90 percent of tumours of the oral cavity are squamous cell carcinomas.[1]

Bangladesh is one of the underdeveloped and overpopulated country in South Asia. Oral carcinoma constitutes a significant proportion of all cancer cases in Bangladesh. According to the World Health Organization (WHO), oral cancer is the sixth most common cancer globally, and Bangladesh is not an exception to this alarming trend. The incidence of oral carcinoma has been increasing steadily in the country over the past decades, posing a significant health burden on the population and the healthcare system.[2]

There are 13-15 lakh cancer patients in Bangladesh, with about 200,000 patients newly diagnosed with cancer each year.[3] Among all cancer patients, 7,120 were affected in lip, oral cavity and pharynx. However, the percentage of incidence and mortality rate are increasing every year.[3]

In Bangladesh, oral carcinoma ranks among the leading types of cancer, posing considerable challenges to healthcare systems and society. Understanding the risk factors associated with the development of oral carcinoma in the Bangladeshi population is essential to formulate effective prevention strategies and improve early detection and management of the disease. This rising trend warrants in-depth investigation to devise preventive measures and enhance early diagnosis and treatment.

The study was aimed to identify the risk factors of oral cancer in a tertiary level hospital in Bangladesh.

Methodology

This observational study was carried out from March, 2016 to August, 2016 in department of ENT and Head-Neck Surgery in Dhaka Medical College Hospital, Dhaka.

All patients diagnosed as oral carcinoma within the study period were included. Diagnoses were based on histopathological findings available from the Pathology department of Dhaka Medical College. Total 52 cases were taken in non-randomized sampling technique.

Statistical analysis was done using SPSS Version 17.

Results

In this study involving a total of 52 patients, it was observed that 30(57.69%) were males, while the remaining 22 (42.31%) were females with a male to female ratio of 1.52:1. (Figure 1)

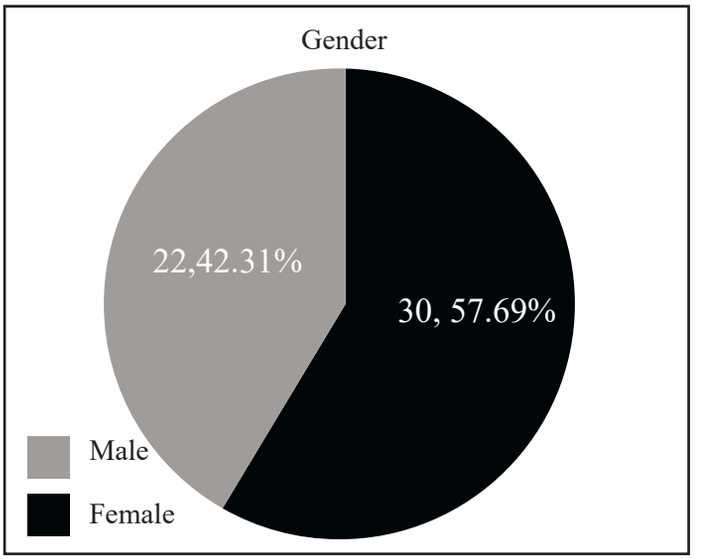

Figure 1: Gender distribution on the study population (N=52)

The age range of the patients varied from 37 to 74 years with mean age +Standard deviation was 52+8.61 years. Majority of the patients were from age group 51-60 years (25, 48.08%), followed by 41-50 years (15, 28.85%), 61-70 years (8, 15.38%) and others. (Table I)

Table I: Age distribution of the patients (n=52)

Age groups (years)	No. of cases	Percent	Mean age ±SD*
31-40	2	3.85	52±8.61
41-50	15	28.85	
51-60	25	48.08	
61-70	8	15.38	
>70	2	3.84	
Total	52	100.00	

*SD-Standard Deviation

On analysis of distribution of the patients by occupation, it was found that majority of the patients were from rural areas (30, 57.69%). Among them, 17(32.69%) patients were agricultural workers, followed by 10(19.23%) industrial workers, 12 (23.08%) household workers, and 5(9.62%) daily labourers. (Table II)

Considering the high-risk habits of the patients, 24(46.14%) had the habit of pan (betel leaf) chewing, while smoking was the habit among 15(28.85%) patients. Additionally, 5(9.62%) patients were engaged in tobacco chewing, 2(3.85%) were addicted to alcohol and other 6(11.54%) had habits of both chewing Pan and smoking. (Table III)

Table II: Distribution of the patients by occupation (N=52)

Occupation	Origin	Number of patients	Percentage
Agricultural worker	Rural	17	32.69
Industrial worker	Urban	10	19.23
House hold worker	Urban	12	23.08
Daily labourer	Rural	5	9.62
Fisherman	Rural	3	5.77
Others	Both Rural & Urban	5	9.62
Total		**52**	**100.00**

Table III: High risk habits of the patients (N=52)

High risk habits	Number of patients	Percentage
Chewing of Pan (betel leaf)	24	46.14
Smoking	15	28.85
Chewing of tobacco	5	9.62
Alcohol consumption	2	3.85
Both chewing of Pan and Smoking	6	11.54
Total	**52**	**100.00**

Figure 2 illustrates the pattern of clinical features of oral cavity carcinoma. Common symptoms included ulceration (40, 76.92%), neck lump (37, 71.15%), pain (22, 42.31%), swelling (20, 38.46%), dysphagia (22, 42.31%), and bleeding (11, 21.15%).

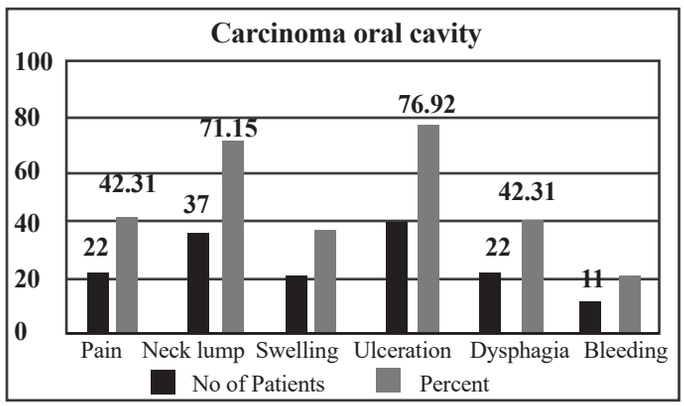

Figure 2: Pattern of clinical features of carcinoma oral cavity (n=52)

The topographical distribution of oral carcinoma revealed that the most common areas of involvement were buccal mucosa (19, 36.54%), followed by the oral tongue (14, 26.92%), floor of the mouth (6, 11.54%), gingival (5, 9.62%), lip (4, 7.69%), retromolar trigone (3, 5.77%), and hard palate (1, 1.92%). (Figure 3)

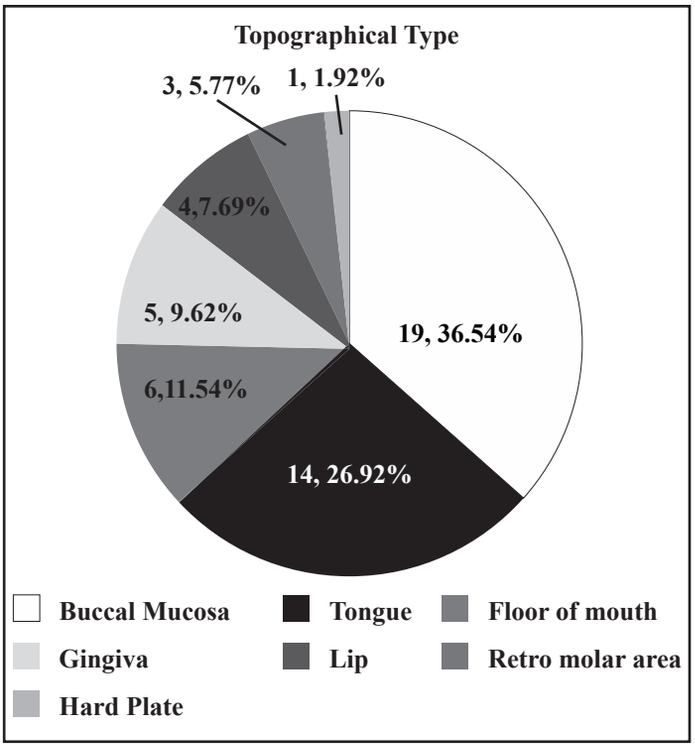

Figure 3: Topographical distribution of oral carcinoma patients (n=52)

Histopathologically, the study found that 27(42.31%) of the carcinomas were well-differentiated, 22(51.92%) were moderately differentiated, and only 3(5.77%) were poorly differentiated squamous cell carcinoma. (Figure 4)

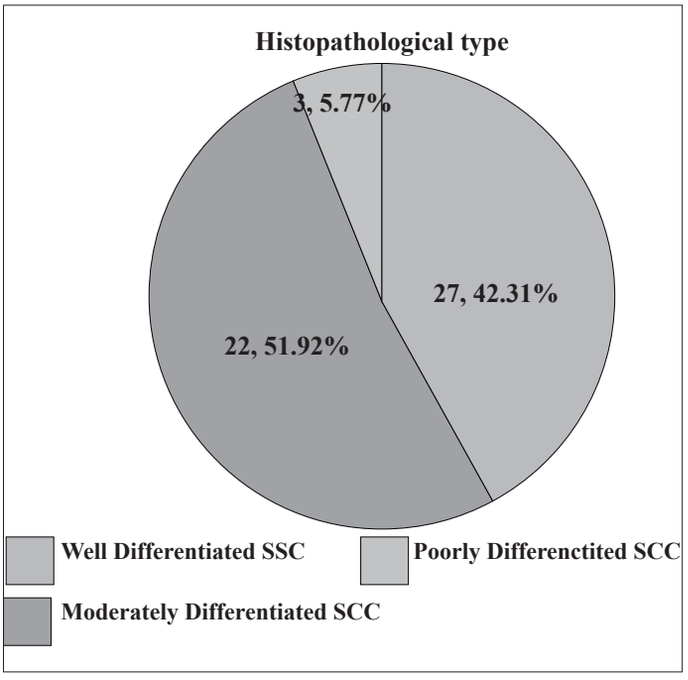

Figure 4: Distribution of patients by histopathological type of oral cavity carcinoma (n=52)

Discussion

Out of 52 cases in the present study, 30 (57.69%) were male and 22 (42.31%) were female, with a male-to-female ratio of 1.52:1. Similar findings were also reported by Khandakar et al,[4] who found 61.25% males and 38.75% females and the male-female ratio was 1.58:1.

In this study, the age of the patients ranged from 37 to 74 years, with a mean age of 53(SD± 8.61) years. The peak incidence was in the sixth decade of life. This result was compared with Renukananda et al,[5] which shows the age range between 30 to 80 years with a mean of 55 years and a peak incidence in the fifth and sixth decades.

Regarding the occupation of the oral carcinoma patients in the current study, it was found that most of the patients were agricultural workers (17, 32.69%), followed by household workers (12, 23.08%), industrial workers (10, 19.23%), daily labourers (5, 9.62%), fishermen (3, 5.77%) and others (5, 9.62%). So, from the above data, we found that oral cavity carcinoma is common in low socio-economic groups and rural areas.

The majority (42, 80.77%) of the patients had the habit of Pan (betel leaf) chewing- smoking was also among prevalent habits in 30(57.69%), along with tobacco chewing (9, 17.31%) and only 2(3.85%) was addicted to alcohol. Pandey et al[6] also found similar results in India regarding the high prevalence of this cancer attributed to the widespread habit of Pan, betel nut, tobacco chewing, smoking, and alcoholism. In the current study, ulceration (40, 76.92%) was the most common presenting symptom, followed by Neck lump in 37(71.15%), swelling in 20(38.46%), dysphagia (22, 42.31%) and bleeding (11, 21.15%). The common symptoms of oral cancer found by Sundar et al[7] were ulceration in 60%, swelling in 21.6%, bleeding in 18.67%, and dysphagia in 23.12%. This was consistent with the current study.

Buccal mucosa (cheek) was the most common site of intra-oral carcinoma, which accounts for 19(36.54%), the oral tongue (14, 26.92%), the floor of the mouth (6, 11.54%), gingiva (5, 9.62%), lip (4, 7.69%), retromolar area (3, 5.77%) and hard palate (1, 1.92%). Another study in Bangladesh by Ahmed et al found the primary site of tumors with the highest percentage was in the retromolar Trigone (23.5%), followed by cheek (21.6%), alveolar mucosa and vestibule (13.7%), tongue (13.7%), the floor of the mouth (7.8%), lower lip (5.9%), hard palate (5.9%), facial skin (3.9%), upper lip (2.0%), soft palate (2.0%).[8]

The study period was limited, inclusion of appropriate and large number of patients was not possible in this short period. Some radiological investigations (MRI, PET scan) and specially CT scan of neck was not done in all patients due to financial constraint.

Conclusion

The study revealed personal habits of high-risk behaviour, including Pan, Betel nut and tobacco chewing and poor socioeconomic conditions which were the common factors for aggressiveness of the disease.

Conflict of interest: None declared

References

1. Martin T, Webster K. Lip and oral cavity. Stell & Maran's Textbook of Head and Neck Surgery and Oncology, Fifth edition. London, UK: Hodder Arnold. 2012: pp.549-552.

2. World Health Organization (WHO). Cancer: Key Facts. 2020. https://gco.iarc.fr/today/data/factsheets/populations/900-world-fact-sheets.pdf-https://www.who.int/news-room/fact-sheets/detail/cancer

3. Hussain SM. Comprehensive update on cancer scenario of Bangladesh. South Asian J Cancer. 2013 Oct;2(04):279-284.

4. Khandakar SP, Bagdey PS, Tiwari RR. Oral cancer and some epidemiological factors. A hospital-based study. Indian J Comm Med. 2006;31(3):157-162.

5. Renukananda GS, Santosh UP, Ravi KS, Nitlsa MG. Analysis of Secondary nodes in malignancies of upper aerodigestive tract. CIB Tech J Surg. 2013;2(2):1-6.

6. Pandey M, Shukla M, Nithya CS. Pattern of lymphatic spread from carcinoma of the buccal mucosa and its implication for less than radical surgery. J Oral Maxillofac Surg. 2011 Feb;69(2):340-345.

7. Sundar SB, Rao NR, Faheem MK. Epidemiological and Clinicopathological Study of oral cancers in a tertiary care hospital. Int J Biomed Med Res. 2012;3(4):2376-2380.

8. Ahmed F, Islam KM. Site predilection of oral cancer and its correlation with chewing and smoking habit- a study of 103 cases. Bangladesh Med Res Council Bull. 1990 Jun;16(1):17-25.