

# Oral Cancer Senario in Multiple Centers of Dhaka, Bangladesh

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## ARTICLE INFO

Received: 📅 November 11, 2020

Published: 📅 December 03, 2020

**Citation:** Rajesh Sah, Mahmuda Akhter. Oral Cancer Senario in Multiple Centers of Dhaka, Bangladesh. Biomed J Sci & Tech Res 32(2)-2020. BJSTR. MS.ID.005232.

## Abstract

Oral cancer is one of the common cancers worldwide and in Bangladesh around 7000 cases are diagnosed yearly. It has variable demographics and patient comes to hospital with different presentations. It is mandatory to know the characteristics of the disease so that better awareness and different treatment modalities can be planned. 162 patients with histopathological diagnosis of oral cancer was include in study by consecutive sampling and characteristics of disease was recorded in scientific data collection sheet which was later analyzed by SPSS and result was presented in table, graph and chart form. Incidence of oral cancer is 56.2% in female, in 59.9% cases buccal mucosa is involved in which 90.1% is squamous cell carcinoma. In Conclusion squamous cell carcinoma is most common oral cancer mainly occurs in buccal mucosa of female, in grade I and stage iii majority of patient present in tertiary centers of Dhaka senari.

## Introduction

Oral cancer includes cancers of the lips, tongue, oral cavity, oropharynx, hypopharynx and pyriform sinus [1]. Oral cancer is the 6<sup>th</sup> most common cancer worldwide [2]. More than 50000 people are diagnosed globally each year and about 30000 mortality annually [3]. The highest prevalence was seen among south Asian population [4]. Approximately 85% to 95% of all oral cancer is squamous cell carcinoma (SCC). However, multiple other malignant lesions can be found in the oral cavity such as sarcoma, minor salivary gland tumors, mucosal melanoma, lymphoma, or metastatic disease from nearly any site in the body [4]. In Bangladesh, more than 7000 new cases are diagnosed per year with mortality is about 6.6% [5]. Cancer is the sixth leading cause of death in Bangladesh (BBS, 2004), according to the Bangladesh Bureau of Statistics. International Agency for Research on cancer (IARC) stated that cancer related death in Bangladesh is 7.5% in 2005 and projected to 13% in 2030. The prevalence of oral cancer in Bangladesh is second and third leading cancer among males and females respectively [6]. Elderly population aged more than 50 years are commonly affected [7]. However, the incidence of oral cancer is increasing mostly among young female population at age less than 45 years [8]. The etiology of oral cancer is multifactorial and smoking with alcohol consumption

lead the position among established risk factors. Others established risk factors include tobacco chewing, snuff dipping, betel quid with tobacco like products, exposure to sunlight and radiation, viruses (human papilloma virus and Epstein bar virus), immune deficiency, dentition and ethnicity [9]. The TNM system devised by the AJCC is designed to stratify cancer patients into different stages based on the characteristics of the primary tumor T represents size of cancer, N represents lymph node involvement and metastasis is represented by M.

As of recent situation of reporting high number of patients with oral cancer as mentioned above, a study was needed to carry out in Bangladesh. In Bangladesh, as medical facilities centered around Dhaka are involved in treatment of oral cancer, we can utilize our expertise to know the factors and co-factors related to oral cancer which might lead to develop awareness among the people and make treatment policies in local and national level in sequence to international scenario.

## Material and Methods

This was descriptive type of cross-sectional study. 162 patients with histopathologically diagnosed oral cancer, from August 2018

to September 2019, attending in outdoor clinic of Department of Oral and Maxillofacial of following 5 tertiary centers in Dhaka:

- a. Bangabandhu Sheikh Mujib Medical University (BSMMU)
- b. Dhaka Medical College Hospital (DMCH)
- c. Sir Sallimullah Medical College and Mitford hospital (SSMC)
- d. National Institute of Cancer Research and Hospital (NICRH)
- e. Dhaka Dental College Hospital (DDCH).

Consecutive sampling technique was used and patient those were already operated for oral cancer, underwent radio/chemo therapy. Cases with recurrent / metastatic cancer and who failed to submit sufficient history were excluded. Objectives of the study were to identify current demographics of oral cancer with risk factors, site, clinical and histopathological types, grades and stages. The informed written consent was taken. Standardized data collection sheet was used to collect the data. Collected data was summarized and analyzed by Statistical Package for the Social Sciences (SPSS) Version 24.0 and results were presented in table, chart and graph form.

**Results**

The study was carried out in 162 patients of which 91 (56.2%) were female and 71 (43.3%) were male. The most common site was buccal mucosa 97(59.9%). Other characteristics are presented in (Table 1). The highest number of oral cancer patients recorded at Bangabandhu Sheikh Mujib Medical University were 53 (32.7%) followed by Dhaka dental college and others as shown in (Figure 1). The most common oral cancer reported was squamous cell carcinomas (SCC) which constituted (146, 90.1%) followed by

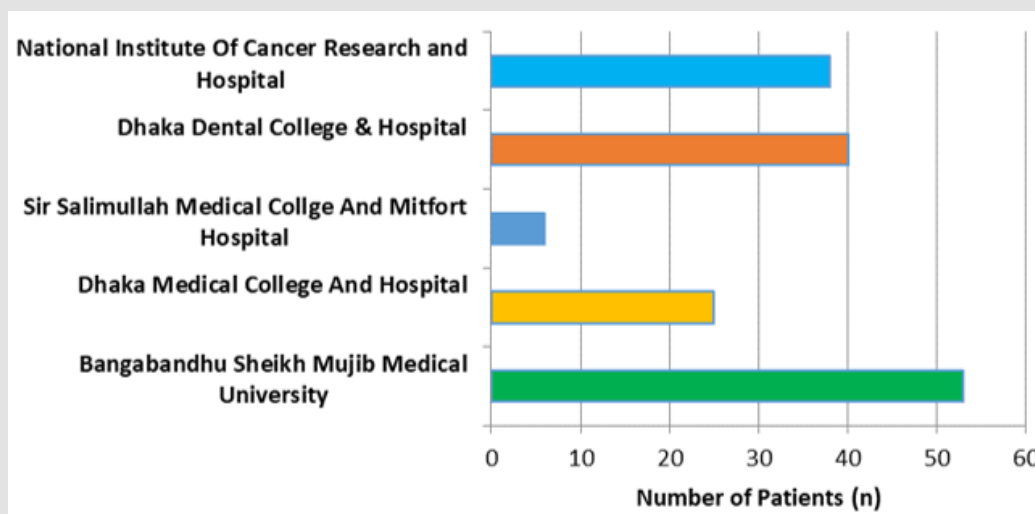
Verrucous Carcinomas (4, 2.5%), Adenoid cystic Carcinomas (3, 1.9%), Melanomas (3, 1.9%), Mucoepidermoid Carcinomas (3, 1.9%), Basal cell carcinoma (1, 0.6%), Adenocarcinoma (1, 0.6%) and spindle cell carcinoma (1, 0.6%), shown in (Table 2). Among Oral squamous cell carcinoma cases, the highest numbers patients had Grade I (99, 61.1%) and stage III malignancies as shown in (Table 3).

**Table 1:** General characteristics of patient.

Characteristics		N (%)
Gender	Male	91 (56.2)
	female	71 (43.3)
Site of cancer	Lowe alveolus	17(10.5)
	Buccal mucosa	97(59.9)
	Gingivobuccal sulcus	25(15.4)
	Lip and palate	5(3.1)
	Tongue	11(6.8)
	Retromolar area	21(13)
	others	26(16)

**Table 2:** General characteristics of patient.

Histological Type	N=162	
	N	%
SCC	146	90.1
Verrucous Ca.	4	2.5
BCC	1	0.6
Adenoid Cystic Ca.	3	1.9
Melanoma	3	1.9
Mucoepidermoid Carcinoma	3	1.9
Adenocarcinoma	1	0.6
Spindle Cell Carcinoma	1	0.6



**Figure 1:** Number of patients included in the study.

**Table 3:** Grading and staging of carcinomas of the study population.

Characteristics		N (%)
Grade	Grade I	99(61.1)
	Grade II	45(27.8)
	Grade III	1(0.6)
	Grade IV	1(0.6)
Stage	Stage I	8(4.9)
	Stage II	24(14.8)
	Stage III	66(40.7)
	Stage IV A	43(26.5)
	Stage IV B	4(2.5)
	Stage IV C	1(0.6)

## Discussion

This prospective observational study was conducted in five major tertiary centers at Dhaka. Histologically confirmed 162 oral cancer patients from January 2019 to September 2019 were included in the study. Among the patient's females- 91 (56.2%) were more than males- 71 (43.3%). Similar results were observed in the study conducted by Adhikari et al. [10] in which they found females were 31(53.4%) and males were 27 (46.6%). Our study shows the most common site of oral cancer was buccal mucosa 97(59.9%). Similarly, studies by Rahman et al [11-13] found buccal mucosa commonly affected in Bangladeshi population, which may be due to habit of high intake of tobacco and betel products. Also, due to the habit of retaining the tobacco and betel ingredients on the buccal sulcus are highly responsible for the development of the carcinomas. All tertiary hospitals have participated in treatment of oral cancer and other such centers need further improvements along with the peripheral centers to provide better health services.

In this study, the most common oral cancer was squamous cell carcinoma which constituted (146, 90.1%) and followed by Verrucous Carcinoma (4, 2.5%), Adenoid cystic Carcinoma (3, 1.9%), Melanoma (3, 1.9%), Mucoepidermoid Carcinoma (3, 1.9%), Basal cell carcinoma (1, 0.6%), Adenocarcinoma (1, 0.6%) and spindle cell carcinoma (1, 0.6%). Similar range of result was observed in the study conducted by Anis and Gaballah<sup>[13]</sup>, in which they found the highest number of oral cancer patients were squamous cell carcinoma (70%), Mucoepidermoid carcinoma (5.4%), Adenoid cystic carcinoma (2.7%), Adenocarcinoma (2.7%), Spindle cell carcinoma (1.4%), Malignant melanoma (1.4%) and some others. In the year 2018, Dhanuthai et al. [14], study showed similar type of result in which they found squamous cell carcinoma were (80.05%), Verrucous carcinoma (3.41%), Mucoepidermoid carcinoma (3.02%), Adenocystic carcinoma (1.9%), Adenocarcinoma (1.07%), Melanoma (0.60%), Spindle cell carcinoma (0.15%) followed by others. In the current study, the highest number of patients had Stage III (66, 40.7%) followed by Stage IVA (43, 26.5%), Stage II

(24, 14.8%), Stage I (8, 4.9%), Stage IVB (4, 2.5%) and Stage IVC (1, .6%) in descending order respectively. In 2014, Thomas, Stedman et al. [15] conducted study in which they observed result of staging of squamous cell carcinoma were very similar, maximum SCC patients were in Stage I (29%) followed by Stage IV (26%), Stage II (15%), Stage III (14%) and unknown (16%). In 2018, Sharma, Kim et al. [16] did study in which they found highest number of SCC patients had Stage I (44.73%), followed by Stage II (5.26%), Stage III (22.36%) and Stage IVA were (23.68%) and stage IVB (3.94%). In the study the highest number of participants were SCC patients and their histological pattern had Grade I (61.1%) followed by Grade II (27.8%), Grade III (0.6%) and Grade IV (0.6%). In 2013, Adhikari et al. [10], conducted study in which they also found similar result in histological pattern had Grade I (60.3%), Grade II (32.8%) and Grade III (6.9%). Similar result was seen in Rai et al. [17] Study in which Grade I was (50.8%), Grade II (29.2%), Grade III (20%) and Grade IV not noted.

## Conclusion

In Bangladeshi population squamous cell carcinoma is most common malignancy of oral cavity and its incidence is more in female and buccal mucosa is most common site of occurrence. Among tertiary centers of Dhaka most of the case of oral cancer are reported in department of oral and maxillofacial surgery of Bangabandhu sheikh mujib medical university. And among all reported case majority of patient presented with Grade I and Stage III squamous cell carcinoma of oral cavity.

## Ethical Issue

Ethical clearances and permissions were taken from institutional review board of BSMMU and permission for study was taken from all five tertiary centers.

## Conflict of Interest

The authors declare no conflict of interest.

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ISSN: 2574-1241

DOI: 10.26717/BJSTR.2020.32.005232

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