Original article

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Clinical Profile and Management of Oral Cancer Patients in a Tertiary Care Hospital in Bangladesh

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ABSTRACT:

Introduction: Oral cavity cancer is the 11th most common cancer worldwide and the incidence rate of lip & oral cavity cancer in Bangladesh in 2020 was 8.9%. The National Institute of Cancer Research and Hospital (NICRH) is a specialized hospital for cancer patient care where all treatment modalities are available. This study was conducted in the faciomaxillary surgical oncology department (FMSO) to see the patient profile and management of oral cancer patient at NIRCH. **Materials and methods:** This observational study was carried out from January 2017 to December 2020 with hitopathologically proven oral cancer patients. Data of outdoor patients were collected from the OPD and tumor board register, and indoor patient's data were collected from the discharge register. Relevant variables were included in the data collection, such as epidemiological features (age, sex) and clinicopathological data (primary site of tumor, disease pattern, TNM staging, presentation status, management of patients by tumor board decision, and surgical management). Collected data were summarized and analyzed by statistical package for the social science SPSS (version 24.0) and results were presented in table, chart & graph form.
Results: A total of 6869 patients were enrolled in the study where 55% were female and 45% male with male to Female ratio of 0.82:1. Buccal mucosa was the most common site (44%) followed by lower gingivo-buccal sulcus (21%). Eighty-eight percent of the total cases were squamous cell carcinoma. Early-stage lesions were only 6% whereas advanced-stage lesions were 94%. Among preoperative patients, 1992 (29%) were operable and 4877 (71%) were inoperable. The tumor board decided nearly 50% of patients for chemo-radiation, 10% for surgery and radiotherapy each. Among the operable patients, only 244 (20%) were operated on in our department in a four-year period. **Conclusion:** It is evident from this study that most of the patients present in the advanced stage illustrate the necessity for the inclusion of oral health care in primary health care by the government for early detection of oral cancer in Bangladesh.

Key words: Oral cancer, clinical profile, management, tertiary care hospital

INTRODUCTION:

Oral Cancer represents around 5% of all human malignancy (1). Oral cavity cancer is the 11th most common cancer worldwide. Histologically more than 90% of Oral cancer is Oral squamous cell carcinoma (OSCC). Oral squamous cell carcinoma (OSCC) is the sixth most common cancer in the world (2). In South East Asia, the most prevalent form of Oral cancer is squamous cell carcinoma because of cultural use of betel quid and different form of tobacco which are the major risk factors for Oral cancer. Although there are difference in occurrence of Oral cancer in Asian countries, the risk factors are same like tobacco in the form of smoking or smokeless tobacco and alcohol (3). For last few decades, no change observed in the mortality rate even with advancement in surgery and adjuvant therapy, it is still very high with a 5-year survival rate of only 50% (4). According to Globocan 2020 prediction, the incidence rate of lip & oral cavity cancer in Bangladesh in 2020 was 8.9% and it was 3rd and 5th most common cancer for male and female respectively(5). In Bangladesh, more than 7000 new Oral cancer cases are diagnosed every year with a mortality rate of 8.3% and 4.3% in male and Female respectively (6).
The National Institute of Cancer Research & Hospital (NICRH)

is a specialized Hospital for cancer patient care. This is a dedicated institute where all treatment modalities of Oral cancer like surgery, Radiotherapy and Chemotherapy are available. Patients from different corners of Bangladesh are referred here in very advanced stage for surgery, adjuvant or palliative management(7). A recent study at NICRH conducted by Aminul Haque and his co-workers found that two third of patients presented in very advanced stage. This late presentation is due to lack of knowledge about the disease, economic crisis, and ignorance(8). Mohammad Abul Bashar Sarker et al ., conducted a study at NICRH to see the trends and distribution of common type of cancer in Bangladesh(9). Nargis Sultana et al., also conducted a study regarding Oral cancer scenario and risk factor in Bangladesh(7). There is no good infrastructure about oral health and available data or systematic research which reflect the actual scenario of oral cancer in Bangladesh. Oral cancer patients are increasing day by day and early detections are mandatory to reduce the cancer burden. Although Government has taken a lot of initiatives to control oral cancer but rural people are not alert about their oral health problems. Oral health care is not included in primary health care by the government till now.

This study was conducted to see the patient profile and management of oral cancer patient at NIRCH. It will also assess the services provided by our department to identify the shortcomings in the patient management system so that we can prepare a future plan for patient's care and early detection of oral cancer.

MATERIALS AND METHODS:

An institutional observational study was conducted in the department of Faciomaxillary surgical oncology (FMSO) from January 2017 to December 2020.The study commenced after approval from the institutional ethical committee. The study group consisted of 6869 patients. All cancer patients are managed through tumor board in our hospital (Figure-1). Operable patients are advised for surgery under FMSO department. Post-operative and inoperable patients are placed to tumor board for radiotherapy, chemo-radiotherapy, and palliative chemo- radiotherapy depending on patient's general condition, tumor invasion and histopathology report. Data of outdoor patients were collected from the OPD and tumor board register, and indoor patient's data were collected from the discharge register. Relevant variables were included in the data collection, such as epidemiological feature (age, sex) and clinicopathological data (primary site of tumor, disease pattern, TNM staging, presentation status, management of patients by tumor board decision, and surgical management). Collected data were summarized and analyzed by statistical package for the social science SPSS (version 24.0) and results were presented in table, chart & graph form.

Oral Cancer Patient Management in NICRH

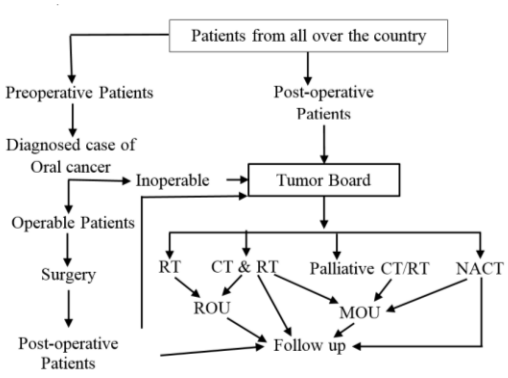

Figure 1: Oral Cancer Management in NICRH

RESULTS

A total 6869 patients were enrolled in the study where 55% were female and 45% male with male to Female ratio 0.82:1 (Figure-2). Most of the patients were in 4th and 5th decade with a peak incidence in 5th decade. (Table-1)

The highest number of patient came from Dhaka Division (27%) followed by Chittagong (21%) (Figure-3). Buccal mucosa was the most common site (44%) followed by lower gingiva-buccal sulcus (21%) (Table-2). Eighty eight percent of total cases were squamous cell carcinoma (Figure-4). Early stage lesions were only 6% (Stage I-2% and stage II-4%) whereas advanced stage lesions were 94% (Stage III and IV cases 31% and 63% respectively) (Figure-5). Sixty one percent of total patients presented in preoperative state and 39% as post-operative state (Figure-6). Among preoperative patients, 1992 (29%) were operable and 4877 (71%) were inoperable (Figure-7). The tumor board decided nearly 50% for chemoradiation, 10% for surgery and radiotherapy each (Figure-8). Among the operable patients, only 244 (20%) were operated in our department in a four-year period (Figure-9).

Gender distribution of patients:

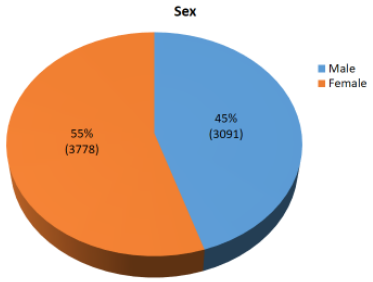

Figure-2: Gender distribution of patients

Table-1: Age group distribution of patients

Age in Years	No of Cases	Percentage
Below 30	276	4.01
31-40	824	11.99
41-50	1923	27.99
51-60	2129	30.99
61-70	1236	17.99
Above 70	481	7.00

Divisional distribution of patients

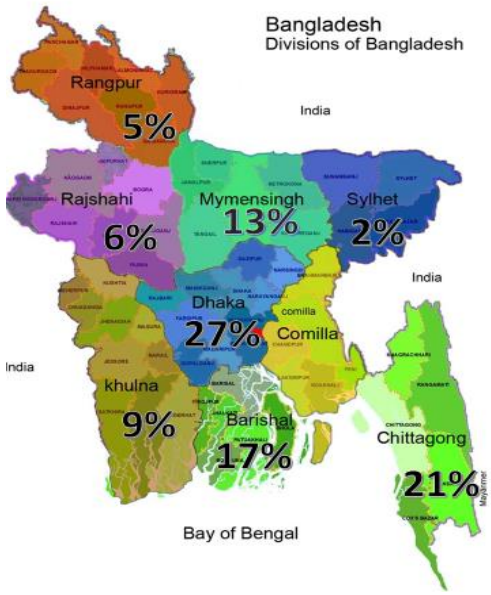

Figure-3: Divisional distribution of patients

Table-2: Site distribution

Site	No of Cases	Percentage
Buccal mucosa	3022	43.99
Retromolar trigon	756	11.00
Lower gingivo-buccal Sulcus	1442	20.99
Upper gingiva-buccal Sulcus	756	11.00
Palate	481	7.00
Tongue	206	2.99
Lip	137	1.99
Floor of mouth	69	1.00

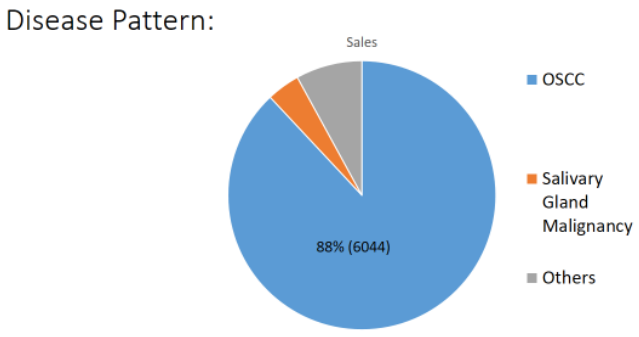

Figure-4: Disease pattern

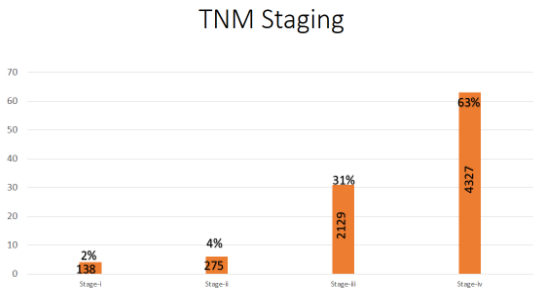

Figure-5: TNM stage of lesion

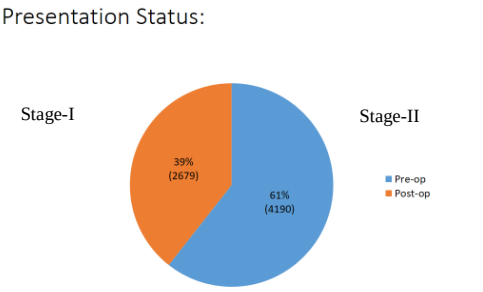

Figure-6: Presentation status of patients

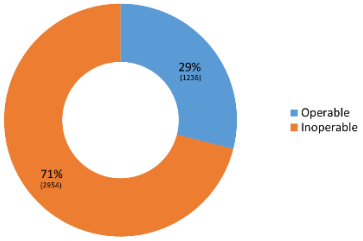

Figure-7: Operable status of patients

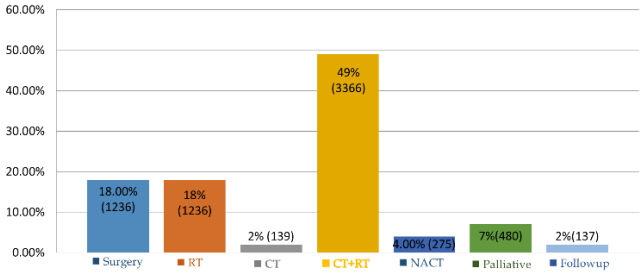

Figure-8: Tumor board decisions

Surgical Management in NIRCH

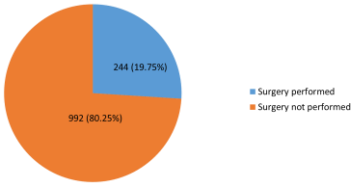

Figure-9: Surgical management

DISCUSSION

According to WHO statement, 30% oral cancers are preventable. (9) Globocan 2020 reported that lip and oral cavity cancer was in the 2nd position in Bangladesh among new cases for all age groups and both sexes. (5) In our study period from January 2017 to December 2020, we observed female predominance which is similar to studies conducted in India and Turkey (8). A study conducted by Adhikari et al., and another research from Lahore reported higher female percentage while majority of studies found male predominance.(4,6) A recent study conducted by Aminul et al., in NICRH found 55% female in their study. (8)

An increasing number of oral cancer cases are being diagnosed in the younger (<40 years) age group in recent years.(10,11) Peak incidence (31%) of oral cancer was in the 5th decade in our study followed by remarkable 28% and 12% in the 4th and 3rd decades respectively. Some research works like Bhurgri et al., Halboub et al., Iamaroon et al., confirmed our findings.(10,11) Gupta et al., observed an increase in the incidence of Oral cancer in the younger age group (12). Although Oral cancer is thought to be a disease of old age group but few published articles showed involvement of younger age group without the absence of any known risk factors (12,13).

Buccal mucosa (44%) was the most common site followed by lower gingivo-buccal sulcus (21%) in this study which is similar to a study conducted by Rahman et al., and also some Indian and Sri-Lankan Studies (6,1,10,14) This is due to the fact that most of the patients keep tobacco in the form of quid in the buccal sulcus. It is also a true fact for Bangladesh that tobacco and its related products are available at an affordable cost making it a habit for many rural people. Malhotra et al., showed that mandibular alveolus was the most frequent site followed by Buccal mucosa (15). Andisheh-Tadbir et al., and most of the western literature stated that tongue was the most common site followed by buccal mucosa (1). Several studies like Phar et al., Su et al., Kruaya sawat et al., Razmpa et al., mentioned tongue as the most common oral cancer site (10). In western countries, tongue involvement is observed in 20-40% cases and floor of the mouth in 15-20% cases- together represent approximately 50% of all cases in compare to other sites (4,14). It is difficult to mention preciously for primary site of oral cancer in our institute because many of the patients present in the advanced stage involving more than one subsite of oral cavity with huge lesions causing necrosis of cheek or lip (8).

Highest Patients presented from Dhaka division (27%) followed by Chittagong (21%) division. These two divisions are densely populated and people move here from other locations for job and business purposes. We found oral squamous cell carcinoma, salivary gland malignancy, verrucous carcinoma, and malignant melanoma with other non-squamous cell carcinoma cases 88%, 4%, and 8% respectively, which is similar to a study conducted by Anis and Gaballah (6). Regarding clinical stage of lesion, 63% patients presented with stage IV and 31% patients presented with stage III lesions which indicate that they present in our department in a very advanced condition. One study conducted in different center of Bangladesh found that 50% patients presented in the early stage (Stage I and stage II) which is dissimilar to our finding. (6) The reasons for this late presentation include lack of knowledge about the disease, economic crisis, inadequate knowledge about the treatment, absence of proper support from family, availability of diagnostic and treatment facilities, lack of awareness, and scarcity of trained work forces (8,15).

Thirty-nine percent of our patients reported as post-operative state for adjuvant therapy. As because NICRH is the only government dedicated cancer center of the country where all modalities of cancer treatment are available, most of the patients are referred from different parts of the country to NICRH with a light of hope. Another reason is that very poor patients who cannot bear the expenses of cancer treatment, find the government hospitals as proper place for their treatment.

Among the preoperative patients, only 29% were operable and 71% were inoperable. This is due to the late presentation of diseases with massive involvement of hard and soft tissues. Patients sometimes receive chemotherapy or radiotherapy injudiciously prior to surgery which make the operable patients into inoperable. All patients of our hospital get the treatment protocol from the tumor board. In our study period, 49% patients were decided for chemo-radiation, 18% patients for radiotherapy, 18% for surgery, and 7% patients for palliative chemotherapy or radiotherapy. We could perform the surgery of only 20% of operable patients. The balance between number of new operable patients and institutional facilities cannot be maintained due to high volume of patients. Lack of manpower and inadequate operation theatre facilities also provoke the cancer burden. The operation time of our patients are long because most of the patients need reconstruction with a flap due to advanced stage of lesion. For this reason we can perform limited number of surgeries within the allocated time. Many admitted patients wait for the schedule of operation- small lesions gradually become large and convert the operable patients into inoperable. Ultimately the prognosis of the disease becomes worse.

CONCLUSION

It is evident that oral cancer has a significant impact on the patient's quality of life because of the functional loss that results with the treatment modalities even with the highest care provided. It is a fact that most of the patients present with advanced stage (Stage III & IV) which illustrate the necessity

for preventive and early detection strategies.

The profile of oral cancer patients reflect marked predominance of woman with peak incidence in fifth decade of life with buccal mucosa as most frequent site. More than fifty percent of patients were inoperable due to late presentation and limited number of patients were operated. Oral cancer is showing an upward trend in our country. Preventive steps must be taken through screening programs and other awareness programs by government and non-government organizations to reduce cancer burden. Oral health care should be included in the primary health care by the government which can play an important role for early detection of oral cancer in Bangladesh.

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