

Prevalence and Pattern of Head Neck Malignancy in Rangpur Division

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Head neck malignancy is one of the commonest malignancies in Bangladesh. A study of malignant neoplasm in the head neck region was carried out from July 2010 to June 2013 in the department of Otolaryngology and Head Neck Surgery of Rangpur Medical College Hospital to find out the prevalence and pattern of Head Neck malignancy in Rangpur division. The prevalence of malignancy in Rangpur division was found to be 558 out of total new patients (80782) attended in the OPD and indoor department within the period of 3 years with a ratio of 1:144 and the percentage was 0.69%. There may be a role for the use of betel leaf, alcohol and smoking for the increase of Head Neck malignancy in Rangpur. Most of the patients were smokers and or betel leaf chewers with different ingredients and almost all patients came from low socioeconomic group. Out of 558 patients, 435 (77.96%) were males and 123 (22.04%) were females and male to female ratio was 3.5:1. As per histopathological findings majority was squamous cell carcinoma (92.47%). Among the total head neck malignancy laryngeal and pharyngeal carcinoma constitute the major bulk where laryngeal carcinoma constitute the highest number (46.59%) followed by pharyngeal carcinoma (38.35%), where as carcinoma of salivary gland, nose and Para nasal sinuses and ear were very less. Majority of the patients (25.45%) were in the age group of 41-50 years followed by 51-60 years.

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Introduction

Head and neck malignancy is a major health problem in world wide.¹ It is a major global health issue, with about half a million new cases diagnosed per year, and their incidence appears to be increasing in developing countries.² It has been estimated that approximately 900,000 people were diagnosed with this disease in 1995.³ It is about 5-7% of all new cancer cases in the US and as of 1994, the incidence was estimated at 65-70000 new cases in each year and a cause of 12000 US death annually.

Squamous cell carcinoma accounts for 90% of all the cases and the incidence is 2-3 times more common in men.⁴ It is not uncommon in Bangladesh and in one study at a national

referral hospital of our country it was shown that Head Neck cancer constituted 27% of all cancer patients.³

Head Neck cancers are primary malignant neoplasms that occur in several anatomical sites in the head neck region such as larynx, pharynx, thyroid gland, salivary gland, oral cavity, nose and para nasal sinuses and ear.

As with many types of cancer the risk of developing a head neck cancer increases with increasing age and it is mostly diagnosed after 40 years of age. The prevalence of these cancers is highest amongst populations with habitual betel leaf, tobacco and excessive alcohol use.⁴

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The risk increases in proportion to the intensity and duration of exposure to each carcinogen. Yet, individual susceptibilities to these risk factors vary within the general population. The basis for this susceptibility may be inborn or acquired, which is still under investigation. This study was carried out i) to know the prevalence and pattern of head neck malignancy among the patients of Rangpur division attending the ENT department of Rangpur Medical College Hospital ii) to find out the presumed etiological factors responsible for Head Neck malignancy in the people of Rangpur division and iii) to find out the relation of age, sex, personal habit, socioeconomic condition with different types of malignancy in people of Rangpur division.

Methods

For this prospective study a total number of 558 patients of Head Neck malignancy were selected from OPD and admitted patients of Rangpur Medical College Hospital from July 2010 to June 2013. Diagnosis of Head Neck malignancy was established on the basis of history, clinical examination, haematological investigations, radiology and imaging, biopsy and histopathological examination & FNAC. The relevant history of the patients was recorded in a prefixed data sheet. After collection of data, a comparative and statistical analysis was done according to standard studies.

Results

A total 558 cases of Head Neck malignancy were histologically confirmed out of 80782 patients attended in the ENT department with an incidence of 1:144 and the percentage of 0.69%. The age range was 11 years to 100 years and majority of head neck cancer was reported in the age group of 41-50 years (25.45%) followed by age group 51-60 years (24.19%) and the lowest incidence (2.15%)

was found in the age group of 11-20 years (Table I).

Table I: Age distribution of patients (n=558)

Age of patients	Number of patients	Percentage
0-10 years	00	00
11-20 years	12	2.15
21-30 years	23	4.12
31-40 years	106	19
41-50 years	142	25.45
51-60 years	135	24.19
61-70 years	95	17.03
71-80 years	32	5.73
81-100 years	13	2.33
Total	558	100

Table II shows the sex distribution of patient. Out of 558 patients there were 435 male patients and 123 female patients and male female ratio was 3.5:1.

Table II: Sex distribution of patients (n=558)

Sex	Number of Patients	Percentage
Male	435	77.96
Female	123	22.04
Total	558	100

Socioeconomic status of the patients shows that majority of the patients belong to poor Socioeconomic group (78.85%) followed by middle class and of affluent class (14.87% and 6.27%) respectively (Table III).

Table III: Socioeconomic condition of patients (n=558)

Status of patients	Number of patients	Percentage
Poor class	440	78.85
Middle Class	83	14.87
Affluent class	35	6.27
Total	558	100

Table IV shows that majority of patients (93.91%) were habituous of chewing betel leaf with different ingredients and 77.96%

patients had a habit of smoking and chewing betel leaf with different ingredients, 70.97% patients had smoking habit and only 3.94% patients had a habit of drinking alcohol.

Table IV: Personal habit (n=558)

Habit	No	Percentage
chewing betel leaf with different ingredients	524	93.91%
Smoking and chewing betel leaf with different ingredients	435	77.96%
Smoking	396	70.97%
Drinking alcohol	22	3.94

Histopathological findings of the patients showed majority had squamous cell carcinoma (92.47%) and only 5.02% had glandular carcinoma (Table V).

Table VI shows that majority of cases had carcinoma larynx (46.59%) followed by carcinoma pharynx (38.35%). The less affected areas were thyroid, oral cavity, salivary gland, nose and para nasal sinuses & ear. Metastatic carcinoma with unknown primary was 2.51%. Most of the head neck cancers were male predominant except thyroid and salivary gland carcinoma where females were predominantly affected.

Table V: Histopathological findings (n=558)

Types	No	Percentage
Squamous cell carcinoma	516	92.47%
Lymphoma HL=8 NHL=6	14	2.51%
Glandular carcinoma	28	5.02%
Total	558	100

Table VII showed different sites of origin of carcinoma larynx in which most of laryngeal carcinoma are supraglottic origin (66.92%) followed by glottic origin & subglottic origin (29.33% & 3.85%) respectively.

Table VI: Pattern of malignancy (n=558)

Site of origin	Male	Female	Total	%
Carcinoma larynx	229	31	260	46.59
Carcinoma pharynx	186	28	214	38.35
Carcinoma thyroid	5	17	22	3.94
Carcinoma oral cavity	11	5	16	2.87
Lymphoma	8	6	14	2.51
Metastatic carcinoma with unknown primary	12	2	14	2.51
Carcinoma salivary gland	3	6	9	1.61
Carcinoma nose & PNS	6	2	8	1.43
Carcinoma ear	1	0	1	0.18
Total	472	86	558	100

Table VII: Carcinoma larynx (n=260)

Site of origin	Male	Female	Total	%
Supraglottic	153	21	174	66.92
Glottic	67	9	76	29.23
Subglottic	9	1	10	3.85
Total	229	31	260	100

In this study amongst the pharyngeal carcinoma majority of cancer were found on piriform fossa (35.98%) followed by carcinoma tonsils (22.90%) and base of tongue (21.96%) and least affected site was post cricoid region (1.40%). Males are mostly affected in all the sites except post cricoid region where females are exclusively affected (Table VIII).

Table VIII: Carcinoma pharynx (n=214)

Site of origin	Male	Female	Total	%
Piriform fossa	71	6	77	35.98
Tonsils	41	8	49	22.90
Base of tongue	42	5	47	21.96
Post & lat. pharyngeal wall	21	4	25	11.68
Nasopharynx	11	2	13	6.07
Post cricoid region	0	3	3	1.40
Total	186	28	214	100

Table IX showed the histological types of thyroid malignancy in which majority found

papillary carcinoma (63.64%) followed by Follicular carcinoma (22.73%) and Anaplastic carcinoma (9.09%).

Thyroid malignancies were predominant in female than male.

Table IX: Carcinoma thyroid (n=22)

Histological type	Male	Female	Total	%
Papillary carcinoma	4	10	14	63.64
Follicular carcinoma	1	4	5	22.73
Anaplastic carcinoma	1	1	2	9.09
Lymphoma	0	1	1	4.54
Total	6	16	22	100

In oral cavity cancer the most common involved site was carcinoma oral part of tongue (50%) followed by carcinoma palate (25%) and carcinoma cheek (18.75%) and carcinoma gum was least affected (6.25%). In all the sites males were more affected than females (Table X).

Regarding lymphoma in Head Neck region male were affected more (10) than female (04) where Hodgkin's Lymphoma (64.29%) predominates the Non-Hodgkin's Lymphoma (35.71%) and Non-Hodgkin's Lymphoma were mostly extra nodal origin (Table XI).

Table X: Carcinoma oral cavity (n=16)

Site of origin	Male	Female	Total	%
Carcinoma oral part of tongue	7	1	8	50
Carcinoma palate	2	2	4	25
Carcinoma cheek	2	1	3	18.75
Carcinoma Gum	1	0	1	6.25
Total	12	4	16	100

Table XI: Lymphoma (n=14)

Site of origin	Male	Female	Total	%
Lymph Node	6	3	9	64.29
Tonsil	2	1	3	21.43
Tongue	1	0	1	7.14
Buccal mucosa	1	0	1	7.14
Total	10	4	14	100

HL=9 (Nodal), HL= 64.29%

NHL=5 (Extra nodal=4, Nodal=1), NHL=35.71%

In case of metastatic carcinoma with unknown primary majority of the patients (85.71%) were male than female (14.29%) which is shown in Table XII.

Table XII: Metastatic carcinoma with unknown primary (n=14)

Sex	Number	%
Male	12	85.71
Female	2	14.29
Total	14	100

Discussion

Head Neck malignancies are common in several region of the world where tobacco use and alcohol consumption is high. The object of this study is to find out the real picture of prevalence and pattern of Head Neck cancer in Rangpur division. In our series, a total of 558 cancer cases were found with an incidence of 144:1 which is much higher than western countries.^{5,6}

As this study was limited within Head neck region, so comparison could not be done with cancer of other parts of the body. Head Neck cancers in Rangpur are more common in adults than children and maximum patients were found in the age group of 41-50 years (25.45%) followed by 51-60 years (24.19%) which does not coincide with other studies,^{1,5} where maximum patients were in the age group of 51-60 years. This difference might be due to reason that malnutrition, habit of smoking and chewing of betel leaf with different ingredients develops much earlier in the people of Rangpur division than in developed countries as most of the people of this area are very poor and illiterate.

As per sex distribution, male were more affected (77.96%) than female (22.04%) and male female ratio is 3.5:1 which is similar with the study of other series.^{4,5,6}

Regarding etiological factors poverty, malnutrition, smoking habit and chewing of betel leaf with different ingredients might play a vital role as almost all of the patients in our series come from very low socioeconomic group and almost all had habit of smoking and chewing betel leaf which coincides with other series.^{3,7}

As per histopathological findings squamous cell carcinoma was commonest (92.47%) followed by glandular carcinoma (5.02%) which coincide with other studies.^{4,8}

In this study we found that laryngeal cancer was most common (46.59%) followed by pharyngeal cancer (38.35%) and carcinoma thyroid (3.94%). Which does not coincide with other studies.^{5,6,9}

In our series among the laryngeal cancer supraglottic carcinoma was maximum (66.92%) followed by glottic and subglottic carcinoma (29.23% and 3.85%) respectively, which coincide with other series^{3,6} but does not coincide with western studies.^{5,7,8} In western countries glottic carcinoma is more than supraglottic carcinoma.

Conclusion

From this study we can conclude that the prevalence of Head Neck cancer is more in our country in comparison with western countries. This study also shows that carcinoma larynx and pharynx constitute the major bulk of Head Neck cancer. It is also found that laryngeal cancer is higher than pharyngeal cancer. In our country supraglottic carcinoma is more than that of glottic carcinoma which is reverse in relation to western countries which may be due to high intake of betel leaf with different ingredients.

The prevalence of Head Neck cancer is highest amongst populations of smoking habit, alcohol and betel leaf users with

different ingredients, so these harmful personal habit should be avoided and further studies are required in Bangladesh to determine risk factors for these cancer of Head Neck region.

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