



INCIDENCE OF HEAD AND NECK CANCER IN UPPER ASSAM PROVINCE

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ABSTRACT **Introduction:** Head and Neck cancer is one of the prime forms of malignancy all over Indian subcontinent. The spectrum of disease proper varies within a country due to diversity in the risk factors associated. The study was to delineate the burden of particular cases having the highest burden.

Materials And Methods: A retrospective study was carried out in the department of ENT in a tertiary care centre in a span of one academic year from 1st July 2019 to 31st June 2020.

Results: Total cases in this study were 216. Male to female ratio was 2.36: 01. The most common age group affected was >60 years. Most of the cases were squamous cell carcinoma as per histopathological report. Most common affected sub-site was that of supraglottis region.

Conclusion: Head and neck cancer are in a rise in north east region. Further prospective study is needed to fulfil the criteria for early detection and management of the same.

KEYWORDS : Head and neck cancer, risk factor, tobacco, Assam

INTRODUCTION

Ageing population and changes in lifestyle such as smoking and physical inactivity has led to rise in the burden of cancer in both developed and developing country.¹

In the 21st century India has emerged as one of the rapidly growing economies which in turn has led to changes in lifestyle along with an increase in cancer load.^{2,3}

India has around 2.25 million cases of cancer with over one lakh new cases being registered every year as per Cancerindia.org in 2018.⁴ With respect to the growing numbers it is expected that these numbers will almost double as a result of demographic changes alone by 2040.⁵

Head and neck are the primary sub-sites in India, making up 25-30 % of all cancer sites, compared to 3-4 % in the Western World.^{6,7} As per population based cancer registries HNC are the most common cancer among Indian men and third most common cancer among Indian women.⁸

American Joint Committee on Cancer, Head and neck oncology defines HNC as malignancies arising from mucosal surfaces from the oral cavity, pharynx, larynx, and Para-nasal sinuses, and also cancers originating from major and minor salivary glands.⁹

Tobacco and alcohol are considered the most common independent and combined risk factors associated with HNC along with poor oral hygiene and human papilloma virus (HPV).^{10,11,12} In South Asian countries, the risk of HNC is aggravated by smoking of bidis, reverse smoking and chewing of tobacco, betel quid and areca nut.¹³

Tobacco burning releases polycyclic aromatic hydrocarbons, which are considered to be known carcinogens. They reach epithelial surfaces through smoke or get dissolved in saliva. Once these carcinogens are broken down by aryl hydrocarbon hydroxylase produces the actual carcinogenic epoxides that bind to the DNA and RNA molecules.¹⁴ Dietary deficiency in Vitamin A, iron implicated to the daily use of "KALAKHAR" which has led to increase in risk of hypo pharyngeal cancer. Kalakhar is a highly alkaline material obtained from the charred false stem or from the outer layer of a specific variety of banana that is used in preparation of curry or dal.¹⁵

HNCs arise from the epithelium lining the oral cavity, pharynx, sino-nasal region, nasal cavity and larynx.¹⁶ Squamous cell carcinoma begins as squamous dysplasia, which constitutes changes in the surface epithelium that precede the invasion of the subepithelial connective tissue. The dysplasia can be graded into three categories depending on the degree of epithelial atypia.

- **Mild dysplasia:** lower one third of epithelium
- **Moderate dysplasia:** 2/3rd epithelium affected
- **Severe dysplasia/ CIS:** atypia of full thickness of epithelium

Carcinoma in situ or severe dysplasia occurs when the atypia involves the full thickness of the epithelium.

Carcinoma in situ, subsequently, may progress to invasion of the sub-epithelial connective tissue and extend to the skeletal muscles, bone and skin.¹⁷

As per the research article by Sharma et al. titled "**Burden of head and neck cancers in Kamrup urban district cancer registry of Assam, India: a retrospective study**" 26% males and 12% females are affected by head and neck cancer. In males the most common site involved was that of hypo pharynx and in females it was the mouth.

With respect to tongue cancer, Ahmedabad was the most common affected region in male category. In female category it was Kamrup urban district which was most affected.

In hypo pharynx, east Khasi hills were the most affected region whereas in females it was kamrup urban district.

In larynx, males were affected most in three N.E. states i.e. east Khasi hills and KUD.

In case of NPC, Nagaland was the most affected in India and third highest in world in male category. In female category it was Aizwal which is highest in India and third highest internationally.¹⁵

MATERIALS AND METHODS

Data was categorized according to age, sex, type and site of malignancies that attended in OPD basis or were admitted in the department of ENT.

The data is represented in the form of tables and charts.

The study population comprised of 216 patients from July 2019 to June 2020. Data pertaining to these patients were collected in a standardised questionnaire. The malignancies of head and neck region were classified as per International Classification of Disease (ICD) coding system devised by WHO (10th revision) using ICD codes from C00-C80.

RESULTS

The study population consisted of 152 males and 64 females of HNC. Male and female ratio was 2.38: 01.

The maximum incidence of HNC was in the age group of >60 years.

Distribution of cases according to the site of tumor: Most common site of malignancy was supraglottis subset of larynx (40.46%) followed by base of tongue subset of oropharynx. Others involved sites were oral cavity, nose and PNS, salivary gland, thyroid gland, Non-Hodgkin's Lymphoma, carcinoma of unknown primary.

Most common age group affected was that of >60 years.

Table 1: Age Wise Distribution Of Cases

AGE GROUP (in years)	NUMBERS (n)	PERCENTAGE (%)
≤20	07	3.25
20–39	18	8.37
40–59	74	33.95
>60	117	54.41%
TOTAL	216	

Table 2: Distribution Of Cases As Per Gender

GENDER	NUMBERS (n)	PERCENTAGE (%)	RATIO (Male : Female)
Male	152	70	2.38: 01
Female	64	30	
TOTAL	216	100	

Table 3: Distribution Of Cases As Per Sub Sites

Site Of Lesion	Subsite	Total	Cases Per Sub Site	Percentage
Oral cavity	Lip	78	02	02
	Tongue		10	13
	Alveolus		08	10
	GBS		51	65
	Hard palate		02	02
	Soft palate		04	05
	RMT		01	01
Pharynx	Nasopharynx	39	06	15
	Oropharynx		29	75
	Hypo pharynx		04	10
Larynx	Supraglottis	90	87	97
	Glottis		03	03
	Sub glottis		-	-
Salivary gland	Parotid	03	03	100
	Submandibular		-	-
	Sublingual		-	-
Thyroid		03		
Unknown primary		02		
Non-Hodgkin's Lymphoma		01		

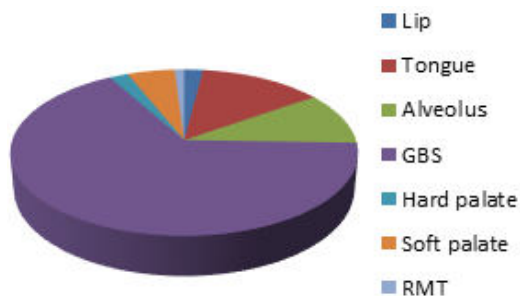


Figure 1: Distribution Of Cases Of Oral Cavity

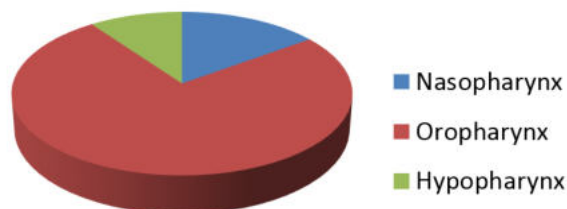


Figure 2: Distribution of cases of pharynx

Table 4: Distribution Of Cases As Per Sub Site And Respective Gender Distribution

SITE OF LESION DISTRIBUTION WITH RESPECT TO SEX	No of Male	PERCENTAGE	No of Female	PERCENTAGE
Oral cavity	52	67	26	33
Pharynx	27	73	10	27
Larynx	67	74	23	26
Salivary gland	00	00	03	100

Thyroid	01	33	02	67
Unknown primary	02	100	00	00
Non Hodgkins Lymphoma	01	100	00	00

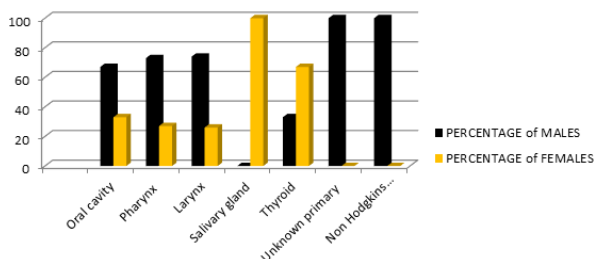


Figure 3: Comparison Between Male And Females With Respect To Different Sites

DISCUSSION

The above mentioned study was a retrospective and hospital based, which included histologically confirmed cases of HNCs. Study population was mainly from rural area comprising a significant portion of people from tea garden areas. As per histology, most common type of malignancy was squamous cell carcinoma.

The prevalence of HNC with respect to total body malignancies varies from 9.8% to 42.7% and it accounts for 30% of all cancer in males and 11–16% in females.

The variation in geography as well as eating habits is one of the most important risk factors that leads to the variations in the sites involved in head and neck malignancy. Various Indian studies have already supported it.

Tobacco consumption is responsible for half of all the cancers in men and a quarter of all cancers in women when it comes to Indian subcontinent.²³ Variations in the incidence of HNC by site are mostly related to the relative distribution of major risk factors such as tobacco or betel quid chewing, cigarette or bidi smoking, alcohol consumption, and viral infections.

India has one of the highest rates of oral cancer in the world, partly attributed to high prevalence of tobacco chewing.

CONCLUSION

This study was carried out with the perspective of head and neck cancers and the burden with respect to each case attending the tertiary health centre. The findings are indicative of a pertinent fact that HNC is quite very common in this part of the world. Due to lack of basic amenities patient reach us at a later stage where quality of life has already been at great loss.

Hence action is in dire need and it requires prompt attention to provide patients with quality of care. The main reason for this study was to quantify and analyse the spectrum of HNC and in prioritising our cases and the need of particular treatment options availability to meet the ever ending challenge.

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