



**Research Article**

**CLINICAL PROFILE OF PATIENTS OF HEAD AND NECK CANCERS- A PROSPECTIVE STUDY OF 100 CASES**

**Dr. Ashok Sidhu<sup>1</sup>, Dr. Sumitoj Singh Dhaliwal<sup>2</sup> and Dr. Siddharth Singh<sup>3</sup>**

<sup>1</sup>Associate Professor, Department of Surgery Govt. Medical College, Amritsar

<sup>2</sup>Professor, Department of Surgery Govt. Medical College, Amritsar

<sup>3</sup>Junior Resident, Department of Surgery Govt. Medical College, Amritsar

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**ABSTRACT**

**Background/Aim:** Head and neck cancer is a group of cancers that starts within the mouth, nose, throat, larynx, sinuses, or salivary glands. When diagnosed early, oral, head and neck cancers can be treated more easily and the chances of survival increases. Surgical resection and radiation therapy are the mainstays of treatment for most head and neck cancers and remains the standard of care in most cases. Cure rates decrease in locally advanced cases, whose probability of cure is inversely related to tumor size and even more so to the extent of regional node involvement.

**Materials and Methods:** This is a prospective study of 100 patients of head and neck cancers admitted or reported in the department of surgery in Guru Nanak Dev Hospital, Amritsar during the time period of time 2017 to May 2019. Before initiating the study an informed consent was taken from every patient in his/her vernacular language after getting approval from institutional ethical committee.

**Results:** In our study of 100 patients of head and neck cancers, the male to female ratio was 1.5:1. The most common age group for both males and females were from the age group 31-40 years. The mean age in our study was 44 years. Tobacco and alcohol consumption are the major risk factors. In our study tobacco and alcohol consumption were 37% and 43% respectively. In our study the most common clinical diagnosis was that of carcinoma Thyroid (papillary) followed by carcinoma tongue. The high incidence of carcinoma thyroid can be attributed to majority of patients belonging to hilly areas and iodine deficient diet. The most common carcinoma in stage II was that of carcinoma tongue and in stage III was that of carcinoma thyroid (papillary). There was 18% patients with morbidity and 8% mortality in our study group. **Conclusion:** About 75% of head and neck cancer is due to the use of alcohol or tobacco. Race, ethnicity and age cannot be altered; however, lifestyle behavior such as use of tobacco and alcohol are amenable to change and increased intake of fruits and vegetables must be addressed. The goal of treatment for head and neck cancers is to control the disease, but also concerned about preserving the function of the affected areas as much as they can and helping the patient return to normal activities as soon as possible after treatment. Rehabilitation is a very important part of this process.

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**INTRODUCTION**

Head and neck cancer is a group of cancers that starts within the mouth, nose, throat, larynx, sinuses, or salivary glands.<sup>1</sup> Symptoms may include a lump or sore that does not heal, a sore throat that does not go away, trouble swallowing, or a change in the voice. There may also be unusual bleeding, facial swelling, or trouble breathing. The public doesn't hear about head and neck cancers as often as other cancers, possibly because they comprise about three percent of all forms of the disease.<sup>2</sup>

About 75% of head and neck cancer is due to the use of alcohol or tobacco.<sup>3</sup> Other risk factors include betel quid, certain types of human papillomavirus, radiation exposure, certain workplace exposures, and Epstein-Barr virus. Head and neck cancers are most commonly of the squamous cell carcinoma type.<sup>4</sup> The diagnosis is confirmed by tissue biopsy. The degree of spread may be determined by radiological imaging and blood tests.

Alcohol and tobacco use (including smokeless tobacco, sometimes called "chewing tobacco" or "snuff") are the two most important risk factors for head and neck cancers, especially cancers of the oral cavity, oropharynx, hypopharynx, and larynx.<sup>5</sup> At least 75% of head and neck cancers are caused by tobacco and alcohol use. People who use

*\*Corresponding author: Dr. Ashok Sidhu*

Associate Professor, Department of Surgery Govt. Medical College, Amritsar

both tobacco and alcohol are at greater risk of developing these cancers than people who use either tobacco or alcohol alone. Tobacco and alcohol use are not risk factors for salivary gland cancers.<sup>6</sup>Infection with cancer-causing types of human papillomavirus (HPV), especially HPV type 16, is a risk factor for some types of head and neck cancers, particularly oropharyngeal cancers that involve the tonsils or the base of the tongue.

Thyroid cancer is the most frequent endocrine cancer with a geographic variation in its incidence and manifestations. While it does not account for more than 1% of all human cancers in most countries, in other regions such as the Middle East, thyroid cancer is the second most common neoplasm among women.<sup>6</sup> Brazilian data also show a highly distinctive incidence of thyroid tumors in different regions of the country. This great variation in incidence reflects differences not only in the access to health care and possibly diverse methods or thoroughness of thyroid examination, but also in environmental and genetic characteristics of the populations studied.

## **MATERIAL AND METHODS**

This is a prospective study of 100 patients of head and neck cancers admitted or reported in the department of surgery in Guru Nanak Dev Hospital, Amritsar during the time period of time 2017 to May 2019. Before initiating the study an informed consent was taken from every patient in his/her vernacular language after getting approval from institutional ethical committee.

The symptoms of head and neck cancers may include a lump or a sore that does not heal, a sore throat that does not go away, difficulty in swallowing, and a change or hoarseness in the voice. These symptoms may also be caused by other, less serious conditions.

To find the cause of the signs or symptoms of a problem in the head and neck area, one must evaluate a person's medical history, performs a physical examination, and orders diagnostic tests. The exams and tests may vary depending on the symptoms. Examination of a sample of tissue under a microscope is always necessary to confirm a diagnosis of cancer.

The goal of treatment for head and neck cancers is to control the disease, but also concerned about preserving the function of the affected areas as much as they can and helping the patient return to normal activities as soon as possible after treatment. Rehabilitation is a very important part of this process. The goals of rehabilitation depend on the extent of the disease and the treatment that a patient has received.

Classic principles of surgical oncology apply to head and neck cancer. Complete resection is necessary. Securing sufficient margins may be challenging because of the many structures in this area. Reconstruction is complex after resection of head and neck tumors, as the surgery may have an impact on appearance, speech, and swallowing.

## **RESULTS**

In our study majority of the male patients affected with head and neck cancers were from age group 31-40 years, which accounted for 35.59% of total male patients. Around 30% of the females were aged 50 years or more. Similarly, among men about 34% of patients of head and neck cancers belonged to

the age group 31-49 years. 28% of male patients were aged 50 years or more. Out of the total of 100 cases 59% were females and 49% were males. Although in head and neck cancer there is male predominance, but in our study the increased number of female patients can be attributed to carcinoma of the thyroid gland which constituted staging 40 out of 59 patients in our study (67%). According to our study, the most common head and neck carcinoma in females was that of thyroid (papillary) carcinoma which came out to be 55.93% of total cases whereas in males tongue carcinoma was found to be the most common. It was 15 out of 100 and comprised of 36.59% of total population under my study. According to Globucan 2018 data it was found that oral cancer is the most common cancer in India amongst men (16.1% of all cancers) whereas it was 2<sup>nd</sup> most common in females (10.4% of all cancers).<sup>7</sup>

In this study, thyroid carcinoma (papillary) was the most common occurs in head and neck carcinoma in females amounting to about 56% whereas in men it was carcinoma tongue amounting to about 37%. This can be attributed to smoking or chewing tobacco and regular alcohol intake among male. The high incidence in thyroid carcinoma can be attributed to patients coming from hilly region with different iodine intake and non awareness about the implications of iodine different salt. The increase in this incidence is attributed to geographical locations.

In line with hypothesis that tobacco and alcohol causes Ca of H & N. in this prospective study 37% of the patients with carcinoma of head and neck were found to be using tobacco in either it's chew-able form or cigarette smoking. It was found only in males. The most common age group of or both male and females were between the ages of 31-40 years amounting to 35%. Out of these cases 16 presented in stage II and 19 were in stage III. The 2<sup>nd</sup> most common age group was both between 41-50 years and 51-60 years both amount to 19% each.

In our study similarly the stage of presentation was in stage II or stage III each constituting 50% each with males being more dominant in stage II with around 63% and females with 59% in stage III at presentation. The most common cancer which presented with stage III diagnosis was that of carcinoma tongue (16 out of 50) and that for stage IV was that of thyroid carcinoma (papillary variant). the survival rates for stage III and stage IV carcinoma of head and neck drastically drops below 40%.but survival rate is better with stage II cancers. Hence there was 18% patients with morbidity and 8% mortality in our study group.

In our study 37% patients of head and neck cancer patients consumed tobacco and it's products. The reason for decreased consumption of tobacco and its products was majority of people in state of Punjab are of sikh community where in it is banned in their religion to consumed alcohol.

**Table 1**

Age group (years)	No. of cases	%age
20-30	16	16.0
31-40	35	35.0
41-50	19	19.0
51-60	19	19.0
61-70	8	8.0
>70	3	3.0
Total	100	100.0

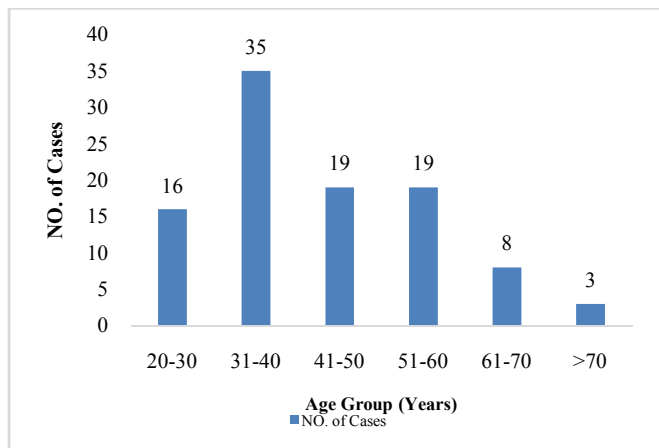


Table showing number of cases of head and neck cancer in different age groups.

Table 2

Sex	No. of cases	%age
Female	59	59.0
Male	41	41.0
Total	100	100.0

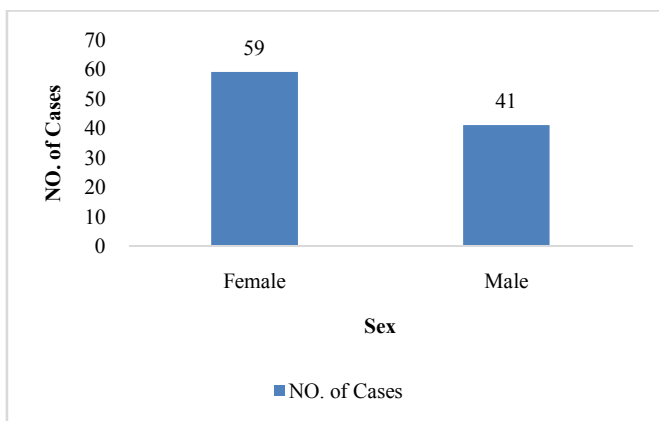


Table showing number of cases in females and males

Table 3

Sex	Stage 2		Stage 3		No.	%age
	No.	%age	No.	%age		
Female	24	48.00	35	70.00	59	59.00
Male	26	52.00	15	30.00	41	41.00
Total	50	100.00	50	100.00	100	100.00

$\chi^2 = 5.02$ ;  $p = 0.025$

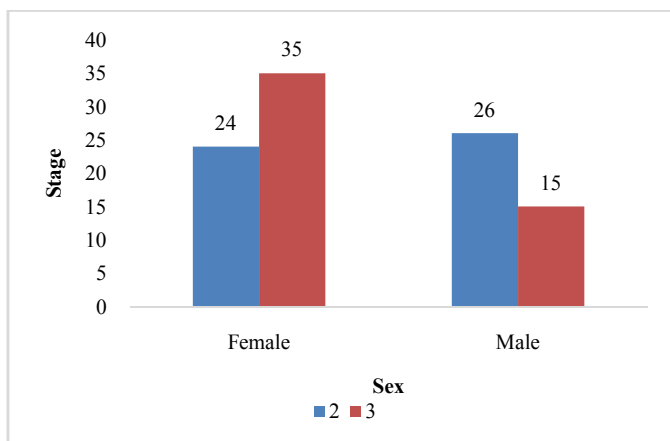


Table showing stage of presentation in males and females.

Table 4

Age group (years)	Sex				Total	
	Female		Male		No.	%age
	No.	%age	No.	%age		
20-30	8	13.56	8	19.51	16	16.00
31-40	21	35.59	14	34.15	35	35.00
41-50	12	20.34	7	17.07	19	19.00
51-60	15	25.42	4	9.76	19	19.00
61-70	2	3.39	6	14.63	8	8.00
>70	1	1.69	2	4.88	3	3.00
Total	59	100.00	41	100.00	100	100.00
Mean age	43.62±12.23		44.36±15.54			

$P = 0.791$  (Non significant)

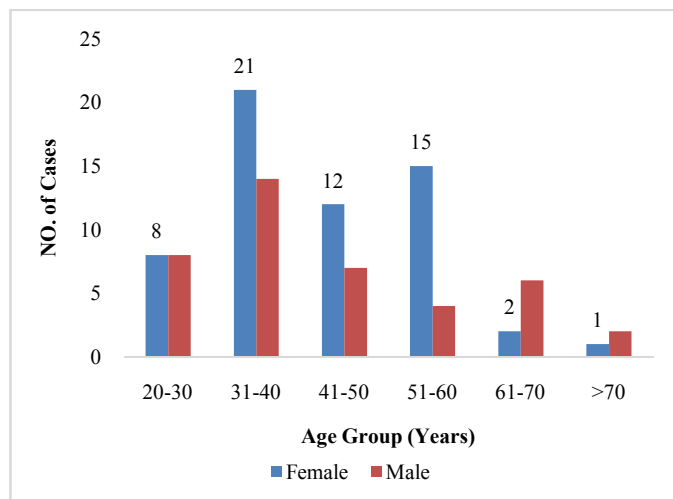


Table showing number of cases of males and females in different age groups.

Table 5

Age group (years)	Stage				Total	
	2		3		No.	%age
	No.	%age	No.	%age		
20-30	10	20.00	6	12.00	16	16.00
31-40	16	32.00	19	38.00	35	35.00
41-50	9	18.00	10	20.00	19	19.00
51-60	7	14.00	12	24.00	19	19.00
61-70	5	10.00	3	6.00	8	8.00
>70	3	6.00	0	0.00	3	3.00
Total	50	100.00	50	100.00	100	100.00
Mean age	44.88±15.46		42.98±11.42			

$P = 0.488$  Non significant

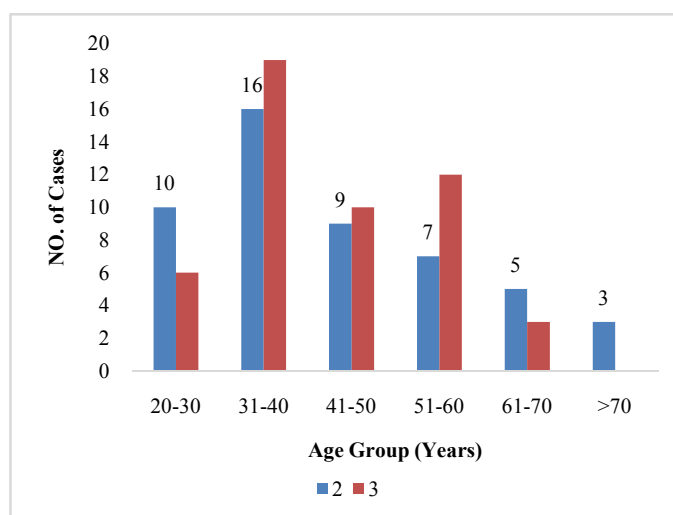


Table showing stage of presentation in different age groups.

**Table 6**

Clinical diagnosis	No. of cases	%age
Alveolus	2	2
Buccal Mucosa	10	10
Larynx	2	2
Maxilla	1	1
Parotid	10	10
Retromolar Trigone	1	1
Thyroid follicular	9	9
Thyroid Hurthle	2	2
Thyroid papi	38	38
Tongue	24	24
Tonsil	1	1
Total	100	100

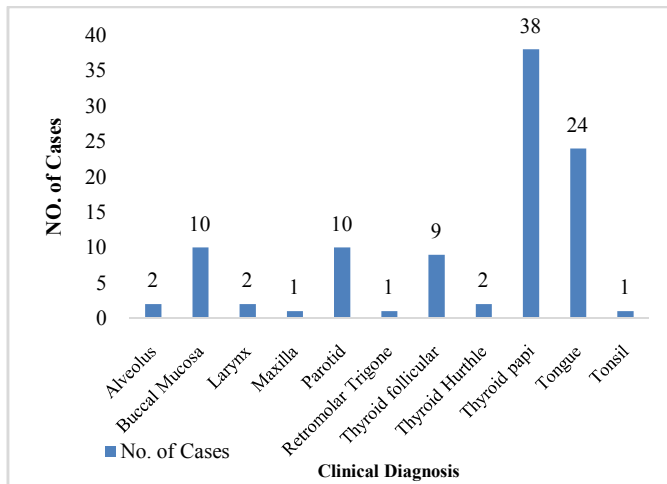


Table showing number of cases of various clinical diagnosis.

**Table 7**

Clinical diagnosis	Sex				Total	
	Female		Male		No.	%age
	No.	%age	No.	%age		
Alveolus	0	0.00	2	4.88	2	2.00
Buccal Mucosa	2	3.39	8	19.51	10	10.00
Larynx	0	0.00	2	4.88	2	2.00
Maxilla	1	1.69	0	0.00	1	1.00
Parotid	6	10.17	4	9.76	10	10.00
Retromolar Trigone	0	0.00	1	2.44	1	1.00
Thyroid follicular	6	10.17	3	7.32	9	9.00
Thyroid Hurthle	1	1.69	1	2.44	2	2.00
Thyroid papi	33	55.93	5	12.20	38	38.00
Tongue	9	15.25	15	36.59	24	24.00
Tonsil	1	1.69	0	0.00	1	1.00
Total	59	100.00	41	100.00	100	100.00

X<sup>2</sup>= 31.92; p=0.001

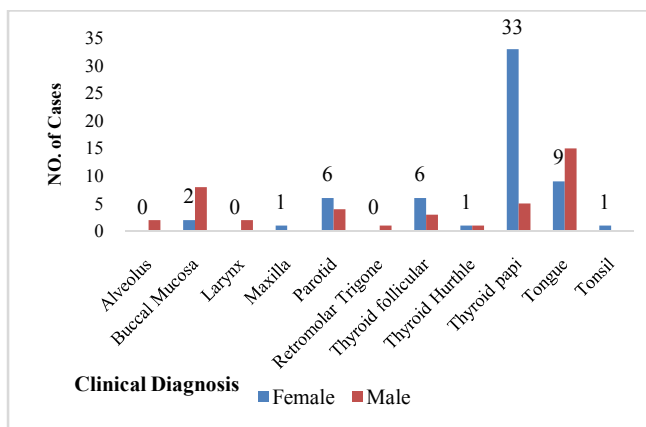


Table showing number of cases in males and females in various clinical diagnosis.

**Table 8**

Clinical diagnosis	Stage				Total	
	2		3		No.	%age
	No.	%age	No.	%age		
Alveolus	2	4.00	0	0.00	2	2.00
Buccal Mucosa	5	10.00	5	10.00	10	10.00
Larynx	0	0.00	2	4.00	2	2.00
Maxilla	0	0.00	1	2.00	1	1.00
Parotid	6	12.00	4	8.00	10	10.00
Retromolar Trigone	1	2.00	0	0.00	1	1.00
Thyroid follicular	4	8.00	5	10.00	9	9.00
Thyroid Hurthle	2	4.00	0	0.00	2	2.00
Thyroid papi	14	28.00	24	48.00	38	38.00
Tongue	16	32.00	8	16.00	24	24.00
Tonsil	0	0.00	1	2.00	1	1.00
Total	50	100.00	50	100.00	100	100.00

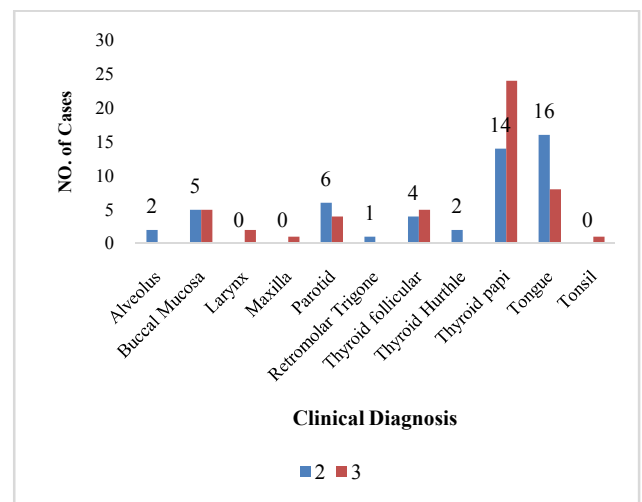


Table showing stage of presentation for various clinical diagnosis.

**Table 9**

Site	No. of cases	%age
Face	10	10.0
Larynx	2	2.0
Maxilla	1	1.0
Oral Cavity	37	37.0
Thyroid	49	49.0
Tongue	1	1.0
Total	100	100.0

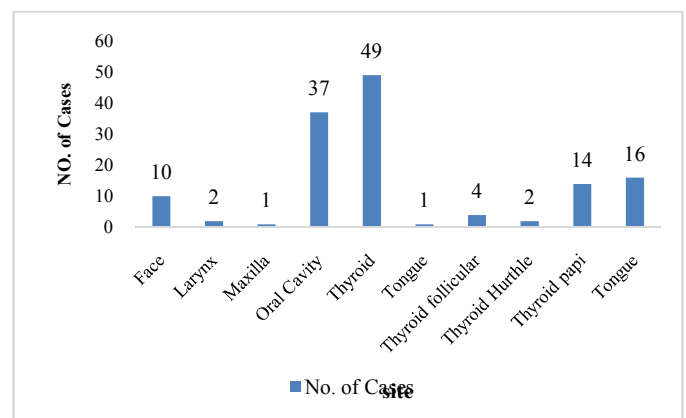


Table showing number of cases at various sites.

**Table 10**

Site	Sex		Total	
	Female	Male	No.	%age

	No.	%age	No.	%age	No.	%age
Face	6	10.17	4	9.76	10	10.00
Larynx	0	0.00	2	4.88	2	2.00
Maxilla	1	1.69	0	0.00	1	1.00
Oral Cavity	12	20.34	25	60.98	37	37.00
Thyroid	40	67.80	9	21.95	49	49.00
Tongue	0	0.00	1	2.44	1	1.00
Total	59	100.00	41	100.00	100	100.00

$\chi^2 = 26.18; p = 0.001$

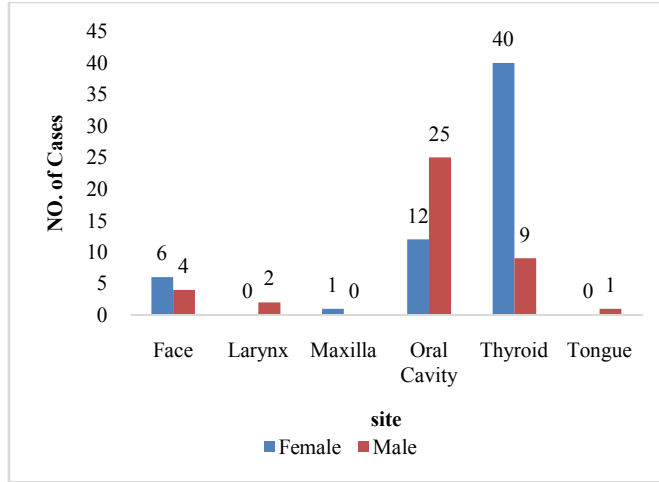


Table showing number of cases in males and females at various sites.

**Table 11**

Site	Stage				Total	
	2		3		No.	%age
	No.	%age	No.	%age		
Face	6	12.00	4	8.00	10	10.00
Larynx	0	0.00	2	4.00	2	2.00
Maxilla	0	0.00	1	2.00	1	1.00
Oral Cavity	23	46.00	14	28.00	37	37.00
Thyroid	20	40.00	29	58.00	49	49.00
Tongue	1	2.00	0	0.00	1	1.00
Total	50	100.00	50	100.00	100	100.00

$\chi^2 = 8.24; p = 0.143$

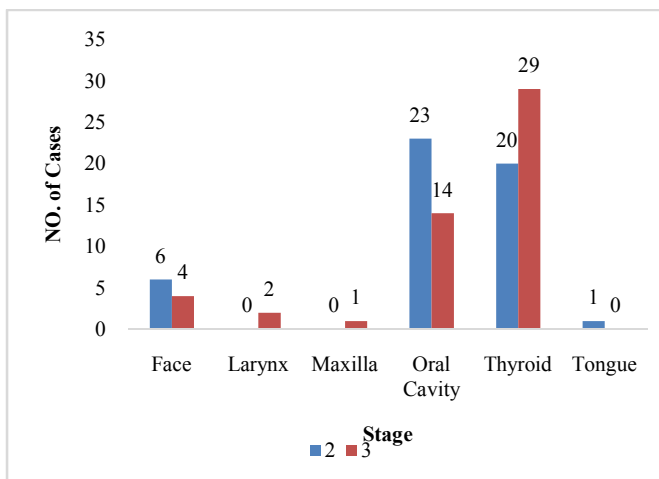


Table showing stage of presentation for various sites.

**Table 12**

Stage	No. of cases	%age
2.0	50	50.0
3.0	50	50.0
Total	100	100.0

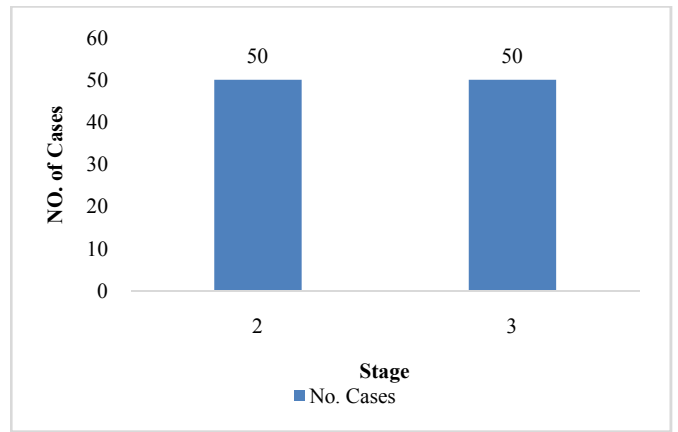


Table showing stage of presentation

**Table 13**

Stage	Sex				Total	
	Female		Male		No.	%age
	No.	%age	No.	%age		
2.0	24	40.68	26	63.41	50	50.00
3.0	35	59.32	15	36.59	50	50.00
Total	59	100.00	41	100.00	100	100.00

$\chi^2 = 5.002; p = 0.025$

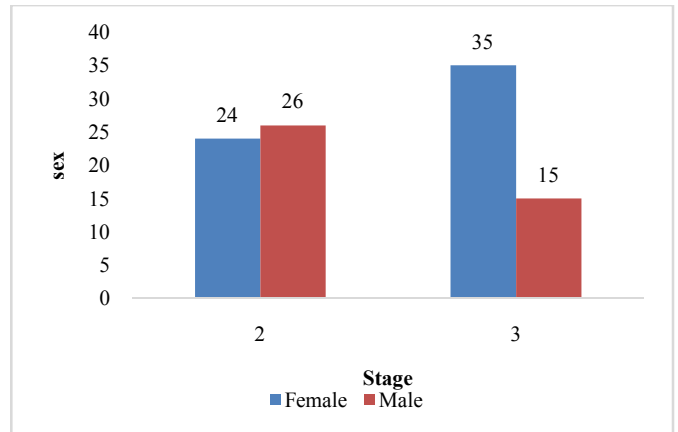


Table showing total number of male and female cases and their stage of presentation.

**Table 14**

Tobacco/smoking history	Sex				Total	
	Female		Male		No.	%age
	No.	%age	No.	%age		
Present	3	5.08	34	82.93	37	37.00
Absent	56	94.92	7	17.07	63	63.00
Total	59	100.00	41	100.00	100	100.00

$\chi^2 = 62.90; p = 0.001$

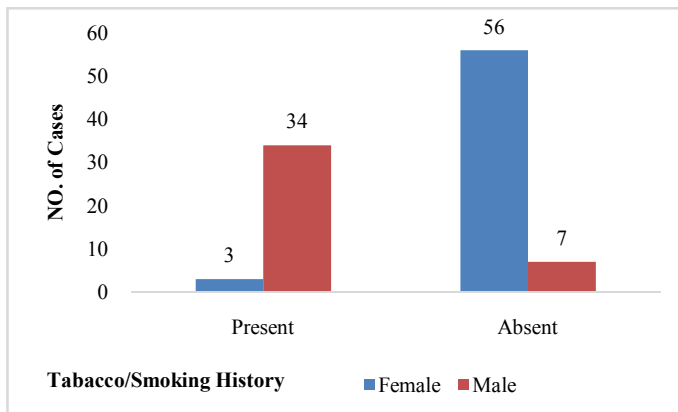


Table showing total number of male and female cases with history of smoking/tobacco consumption.

**Table 15**

Alcohol intake	Sex				Total	
	Female		Male		No.	%age
	No.	%age	No.	%age		
Present	3	5.08	40	97.56	43	43.00
Absent	56	94.92	1	2.44	57	57.00
Total	59	100.00	41	100.00	100	100.00

$\chi^2= 84.40; p=0.001$

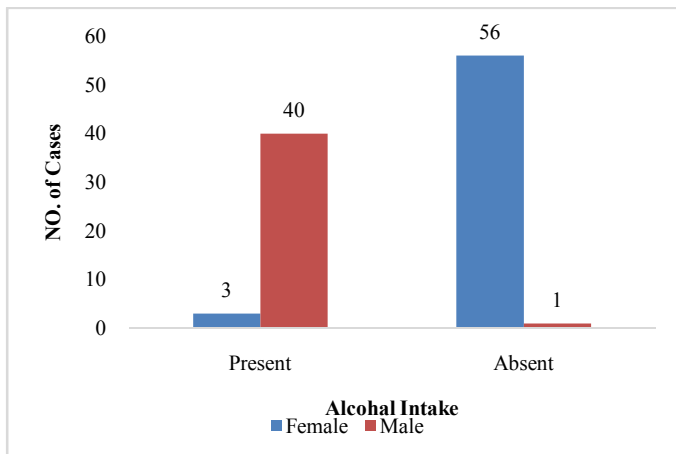


Table showing total number of male and female cases with history of alcohol intake.

**Table 16**

Outcome	No. of cases	%age
Morbidity	18	69.23
Mortality	8	30.77
Total	26	100.00

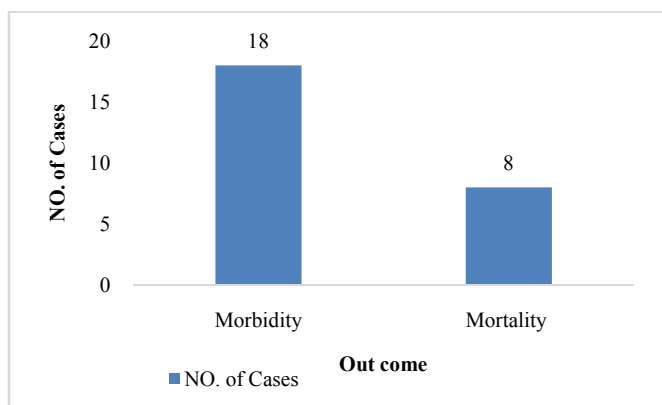


Table showing morbidity and mortality

## DISCUSSION

Head and neck cancer represent the sixth most common cancer worldwide with approximately 630000 new patients diagnosed annually resulting in more than 350000 death every year.<sup>8</sup>

More than 90% of head and neck cancers are squamous cell carcinomas that arise from the mucosal surface of oral cavity, oropharynx and larynx. While in North America and Europe HNSCC (Head and neck squamous cell carcinomas) accounts for 5-10% of all new cancer cases, this is a wide variation in incidence and anatomical distribution of HNSCC worldwide. This variation is predominantly attributed to demographic differences in habits of tobacco use and alcohol consumption

which contributes to the development of 80% of HNSCC diagnosed globally.

Similar to other cancers the risk of developing HNSCC also increases with age and majority of HNSCC occur in patients aged 50 years or more. The average age for smokers tobacco related HNSCC is 78 years.<sup>9</sup> HPV related HNSCC is usually diagnosed at younger ages than tobacco related HNSCC. This median age at diagnosis of HPV related HNSCC is 58 years for men and 61 years for women. HNSCC is more common in men. In united states of America, African American males have a higher incidence of conventional tobacco related HNSCC than Caucasian males. In contrast, HIV related HNSCC are more frequently diagnosed in Caucasian males.<sup>10</sup> As mentioned, head and neck cancers are aggressive tumors. The majority (80%) of recurrences will develop within 2 years. Since many recurrences are treatable with curative intent, patients should be followed closely during the months following their treatment. This period coincides with the time of greatest need from the standpoint of rehabilitation.<sup>11</sup>

After 2 years, second primary tumors of the head and neck and lungs become important causes of death and morbidity. Late complications of treatment, such as radionecrosis, dental decay, radiation-induced fibrosis, hypothyroidism, and sequelae of nerve sacrifice or injury, may develop even after years. Complications and second primary cancers are more common in patients who continue to smoke.<sup>11</sup>

## CONCLUSION

HNCs are one of the most common malignancies prevalent in India with wide variations in risk factors, sites of involvement, geographical, and demographic characteristics. Heterogeneity in risk factors and differences in the prevalence of HNC at different sites of head and neck region may be because of differences in surface area, microanatomy, tissue microenvironment, and duration of exposure to carcinogens which need to be explored. About 75% of head and neck cancer is due to the use of alcohol or tobacco. Other risk factors include betel quid, certain types of human papillomavirus, radiation exposure, certain workplace exposures, and Epstein-Barr virus. Head and neck cancers are most commonly of the squamous cell carcinoma type. Different levels of tobacco and alcohol exposure, diet, socio economic circumstances, age, gender and sites are the causative factors in the differences seen in the incidence rates of head and neck cancers in various populations globally. Because of the magnitude of the head and neck cancer problem and the trends reported, serious thought should be given to plans for prevention and early detection of premalignant and malignant diseases. Race, ethnicity and age cannot be altered; however, lifestyle behavior such as use of tobacco and alcohol are amenable to change and increased intake of fruits and vegetables must be addressed. The dental profession has a well-deserved reputation for preventing other oral diseases. The goal of treatment for head and neck cancers is to control the disease, but also concerned about preserving the function of the affected areas as much as they can and helping the patient return to normal activities as soon as possible after treatment. Rehabilitation is a very important part of this process. The goals of rehabilitation depend on the extent of the disease and the treatment that a patient has received.

Now is time to focus on the prevention and early detection of head and neck cancers.

## Bibliography

1. Mendenhall WM, Mancuso AA, Amdur RJ, Stringer SP, Villaret DB, Cassisi NJ. Squamous cell carcinoma metastatic to the neck from an unknown head and neck primary site. *American journal of otolaryngology*. 2001 Jul 1;22(4):261-7.
2. Schottenfeld D, Fraumeni Jr JF, editors. Cancer epidemiology and prevention. Oxford University Press; 2006 Aug 24.
3. Blot WJ, McLaughlin JK, Winn DM, Austin DF, Greenberg RS, Preston-Martin S, Bernstein L, Schoenberg JB, Stemhagen A, Fraumeni JF. Smoking and drinking in relation to oral and pharyngeal cancer. *Cancer research*. 1988 Jun 1;48(11):3282-7.
4. Ho PS, Ko YC, Yang YH, Shieh TY, Tsai CC. The incidence of oropharyngeal cancer in Taiwan: an endemic betel quid chewing area. *Journal of oral pathology & medicine*. 2002 Apr;31(4):213-9.
5. Boffetta P, Hecht S, Gray N, Gupta P, Straif K. Smokeless tobacco and cancer. *The lancet oncology*. 2008 Jul 1;9(7):667-75.
6. Ward LS, Morari EC, Leite JL, Bufalo NE, Guilhen AC, Araujo PP, Tincani AJ, Assumpção LV, Matos PS. Identifying a risk profile for thyroid cancer. *Arquivos Brasileiros de Endocrinologia & Metabologia*. 2007 Jul;51(5):713-22.
7. Spencer S. Head and Neck Cancers: Advantages of Advanced Radiation Therapy and Importance of Supportive Care. *Journal of the National Comprehensive Cancer Network*. 2018 May 1;16(5S):666-9.
8. Warnakulasuriya S. Global epidemiology of oral and oropharyngeal cancer. *Oral oncology*. 2009 Apr 1;45(4-5):309-16.
9. Centers for Disease Control and Prevention (CDC). Human papillomavirus-associated cancers-United States, 2004-2008. *MMWR. Morbidity and mortality weekly report*. 2012 Apr 20;61:258.
10. Dorell CG, Yankey D, Santibanez TA, Markowitz LE. Human papillomavirus vaccination series initiation and completion, 2008-2009. *Pediatrics*. 2011 Nov 1;128(5):830-9.
11. Friedlander PL, Schantz SP, Shaha AR, Yu G, Shah JP. Squamous cell carcinoma of the tongue in young patients: a matched-pair analysis. *Head & Neck: Journal for the Sciences and Specialties of the Head and Neck*. 1998 Aug;20(5):363-8.

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