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A RETROSPECTIVE ANALYSIS OF HEAD AND NECK CANCER PATIENTS IN THE REMOTE ISLANDS OF ANDAMAN & NICOBAR GROUP

Clinical Research

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ABSTRACT

Background: Worldwide Head and Neck Cancers represent the sixth most common neoplasia and accounts for 6% of all cases, being responsible approximately for 1%–2% of tumor deaths.[1] In India, they constitute 20%–30% of all cancers. The most common risk factors are consumption of tobacco and alcohol. Betel nut chewing with or without tobacco is a major risk factor for HNC in India, especially in Andaman & Nicobar Islands.
Materials and Methods: This was a hospital-based retrospective study to measure the descriptive scenario of Head and Neck Cancer cases. A total of 228 patients old, new and referred diagnosed from June 01, 2018, to December 31, 2018, were included in the study. The data was analyzed for age, gender, subsites, stage at diagnosis, pattern and prevalence of tobacco usage.The Relative Risk and its 95% confidence interval was calculated to assess the association of head and neck cancer with alcohol abuse and tobacco habits.Results: out of 228 cases that were included in the study 165 (72.4%) were males and 63 (27.6%) were females with a male: female ratio of 3.2. the leading carcinoma site in both males and females was the oral cavity. It was also observed that there is more frequency of head and neck cancer among tobacco users which was also found to be statistically significant.
Conclusion: Awareness regarding the harmful effects of tobacco and Behaviour Change Communication is warranted on the whole population to reduce the head and neck cancer burden in these islands.

KEYWORDS

epidemiology,head and neck cancer, tobacco

INTRODUCTION:

India is classified as a lower-middle-income group country by the World Bank. Head and neck cancers are among the 10 most common cancers globally and are the most common cancers in developing countries, especially in Southeast Asia. In India, it accounts for one fourth of male cancers and one tenth of female cancers. This is mainly attributed to tobacco, areca nut, alcohol, etc. Oral cancers are most common amongst all head and neck squamous Introduction: India is classified as a lower-middle-income group country by the World Bank. Head and neck cancers are among the 10 most common cancers globally and are the most common cancers in developing countries, especially in Southeast Asia.cell cancers [1]. The risk factors established for head and neck cancers are tobacco and alcohol consumption and by infection with high-risk human papillomavirus (HPV). [2,3] In South Asian countries, the risk of head and neck cancers is further aggravated by smoking of bidis, chewing betel quid, and areca nut.[4] The usage of smokeless tobacco was indicated by the habit of betel quid chewing, mishri, khaini, gutka, snuff, and as an ingredient of pan masala,[4] and smoking forms of tobacco were indicated by the consumption of cigarettes, pipes, and local bidis as done in our study too. India has one of the highest rates of oral cancer in the world, with over 50% attributable to smokeless tobacco use.[5,6]

Andaman and Nicobar group of islands is a union territory under the Government of India, consisting of 516 islands and a population of 4 lakhs according to 2011 census. Smokeless tobacco use is a customary habit among all the people here. Prevalence of alcohol usage is also very high in these islands. The aim of this study was to determine the pattern of the head and neck cancers and its relationship with the tobacco usage and alcohol abuse if any.

MATERIALS AND METHODS:

This was a hospital-based retrospective study to measure the descriptive scenario of Head and Neck Cancer cases along with their demographic and risk factor profile. The patients diagnosed from June 01, 2018, to December 31, 2018, were included in the study. A total of 228 cases of head and neck cancer old, new and referred who were taken care of at our hospital during the study period were included .The data of patients were analyzed for age, gender, subsites, stage at diagnosis, pattern, associated comorbidities, prevalence of tobacco and alcohol usage. Relative Risk was calculated to assess the association of head and neck cancer and tobacco habits.

STATISTICAL ANALYSIS: Data collected was analyzed using SPSS computer software version 21.0 (SPSS, Inc., Chicago, IL, USA). Descriptive statistics have been used to present the results. Data was summarized in the form of proportions and frequency tables for categorical variables. The Relative Risk and its 95% confidence interval was calculated to test for the significance of association between the independent (predictor) and dependent (outcome) variables in the categorical variables. The level of significance was considered as $P < 0.05$.

RESULTS

Out of the total of 228 Head and Neck Cancer Cases as shown in Table I, cancer of oral cavity constituted of 73.9% in males and 60.3% in females, with a male: female ratio of 3.2:1, followed by thyroid 7.3% in males and 19% in females, a ratio of male : female of 1:0.

Table – 1: Gender-wise distribution of Primary Cancer site

Primary Cancer Site	Male		Female		Total		Male: Female Ratio
	N	%	N	%	n	%	
Oral Cavity	122	73.9	38	60.3	160	70.2	3.2
Thyroid	12	7.3	12	19.0	24	10.5	1.0
Pharynx	15	9.1	4	6.3	19	8.3	3.8
Larynx	13	7.9	3	4.8	16	7.0	4.3
Others*	3	1.8	6	9.5	9	3.9	0.5
Total	**165**	**100.0**	**63**	**100.0**	**228**	**100.0**	3.2

Others include: 3 cases of Salivary glands and one each of Ear, Eyelid, Nasal Cavity, Mandible, Neck and Unknown Primary

Most of the patients 95.2% diagnosed with head and neck cancer do not have a family history of cancer as depicted in Figure 1.

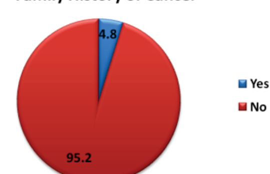

Figure – 1

The age and sex wise distribution of the head and neck cancer cases as shown in Table – 2 depicts that the majority 30.7% of the cases were seen in the age group 51 to 60 years of age with a male preponderance, followed by 26.75% in the 41 to 50 year age group with a male preponderance as depicted in Table 2

Table 2: Distribution of Age and Sex of Patients withHead and Neck Cancer Cases

Age	Male		Female		Total	
	N	%	n	%	N	%
<20	1	0.61	0	0.00	1	0.44
21-30	1	0.61	4	6.35	5	2.19
31-40	25	15.15	12	19.05	37	16.23
41-50	40	24.24	21	33.33	61	26.75
51-60	58	35.15	12	19.05	70	30.70
61-70	28	16.97	9	14.29	37	16.23
71-80	6	3.64	4	6.35	10	4.39
81-90	3	1.82	0	0.00	3	1.32
Don't Know	3	1.82	1	1.59	4	1.75
Total	**165**	**100**	**63**	**100.00**	**228**	**100.00**

The distributions of HNC by anatomical subsites are shown in Table 3. Both in males and females oral cavity (70%) was the leading site followed by thyroid (19.3%), tongue (16.5%), and tonsil (10.3%). Among females, mouth was the leading site (39.8%), followed by tongue (19%) and hypopharynx (17%).

Table 3: Sub Site Distribution of Head and Neck Cancer Patients

Site of Cancer	Yes		No		Relative Risk	Lower limit	upper limit	P
	n	%	No	%				
Oral Cavity								
Male	122	73.94	43	26.06	1.226	0.984	1.527	0.069
Female	38	60.32	25	39.68				
Pharynx								
Male	15	9.09	150	90.91	1.4318	0.494	4.149	0.509
Female	4	6.35	59	93.65				
Thyroid								
Male	12	7.27	153	92.73	.3818	0.1811	0.8048	0.012
Female	12	19.05	51	80.95				
Larynx								
Male	13	7.88	152	92.12	0.808	0.321	2.033	0.650
Female	3	4.76	60	95.24				
Others								
Male	3	1.82	162	98.18	0.191	0.049	0.74	0.017
Female	6	9.52	57	90.48				
*Others include: 3 cases of Salivary glands and one each of Ear, Eyelid, Nasal Cavity, Mandible, Neck and Unknown Primary								

Majority (73.69%) of the patients were presented with locally advanced stage that is stage III and stage IV combined at the time of diagnosis. A few cases (4.82%) were presented at stage0, 5.7% of cases at stageI, and 15.79% of cases at sage II at the time of diagnosis as depicted in Table 4.

Table 4 Staging wise Distribution of Head and Neck Cancer Patients

Stage of the cancer	Male		Female		Total	
	n	%	N	%	N	%
Stage0	7	4.24	4	6.35	11	4.82
Stage I	7	4.24	6	9.52	13	5.70
Stage II	26	15.76	10	15.87	36	15.79
Stage III	39	23.64	19	30.16	58	25.44
Stage IV A	49	29.7	9	14.29	58	25.44
Stage IV B	9	5.45	6	9.52	15	6.58
Stage IV C	28	16.97	9	14.29	37	16.23
Total	165	100	63	100.00	228	100.00

The most common co-morbidity associated with head and neck cancers is Hypertension 13.6% followed by Diabetes 12.7% as depicted in Table 5.

Table 5 Gender-wise Distribution of Co-morbidities associated with head and neck cancer patients

Co-morbidities	Sex				Total	
	Male		Female			
	N	%	N	%	N	%
HTN	22	13.3	9	14.3	31	13.6
DM	23	13.9	6	9.5	29	12.7
TB	1	0.6	3	4.8	4	1.8
Liver Disease	0	0.0	1	1.6	1	0.4
CKD	4	2.4	0	0.0	4	1.8
Renal Disease	1	0.6	0	0.0	1	0.4

Though the percentage of head and neck cancers were observed to be more in the patients consuming alcohol, it was not found to be statistically significant as depicted in Table 6.

Table 6: Association of Alcohol abuse and Head and Neck Cancers

Site of Cancer	Yes		No		Relative Risk	Lower limit	upper limit	P
	N	%	No	%				
Oral Cavity								
Alcohol	49	73.13	18	26.87	1.0257	0.8518	1.235	0.7892
No Alcohol	82	71.3	33	28.7				
Thyroid								
Alcohol	2	2.99	65	97.01	0.2452	0.0575	1.046	0.0575
No Alcohol	14	12.17	101	87.83				
Pharynx								
Alcohol	9	13.43	58	86.57	1.931	0.7823	4.766	0.1534
No Alcohol	8	6.96	107	93.04				
Larynx								
Alcohol	5	7.463	62	92.54	1.4303	0.4538	4.5082	0.5411
No Alcohol	6	5.217	109	94.78				
Others								
Alcohol	2	2.985	65	97.01	0.6866	0.1370	3.4415	0.6475
No Alcohol	5	4.348	110	95.65				

There is a positive association in tobacco users including the consumption of smokeless tobacco products as well as smoking with the cancers of oral cavity, thyroid, pharynx and larynx which was also found to be statistically significant as shown in Table 7.

Table 7: Association of Smoking with head and neck cancers

Site of Cancer	Yes		No		Relative Risk	Lower limit	upper limit	P
	n	%	n	%				
Oral Cavity								
Tobacco+ Smoking	160	75.83	51	24.171	27.2547	1.7702	419.6326	0.0178
no-tobacco	0	0.00	17	100.00				
Thyroid								
Tobacco+ Smoking	11	5.21	200	94.79	0.0682	0.0362	0.1284	<.001
no-tobacco	13	76.47	4	23.53				
Pharynx								
Tobacco+ Smoking	15	7.11	196	92.89	0.3021	0.1127	0.8099	0.0174
no-tobacco	4	23.53	13	76.47				
Larynx								
Tobacco+ Smoking	16	7.58	195	92.42	2.8019	0.1752	44.8078	0.4663
no-tobacco	0	0	17	100				
Others								
Tobacco+ Smoking	9	4.27	202	95.73	1.6132	0.0978	26.6047	0.7381
no-tobacco	0	0	17	100.00				

DISCUSSION

The findings from our study had shown that males were more than three times affected with Head and Neck cancer than females. In a study conducted by John Andrew Ridgeetal7 similar findings were noted that is the head and neck cancers were three times more common in men than in women among head and neck cancers diagnosed in united states

Among all the Head and Neck cancers it was observed that the cancer of oral cavity was relatively common that is 70.2% followed by thyroid cancer 10.5%, cancer of pharynx 8.3% and cancer of larynx 7%.All these cancers were more in males than in females.In a study conducted by LarizadehMSetal[8] in the Kerman province of Iran it was observed that Larynx was the most commonly affected site (46.76%) followed by oral cavity (15.9%) from the retrieved data of 1604 head and neck cancer cases.

It was observed from our present study that nearly 5% of the patients had a family history of head and neck cancer. In a multivariate analysis done by garavelloetal [9]it was observed that The OR was 7.1 (95% CI,

1.3-37.2) for subjects with 2 or more first-degree relatives with oral and pharyngeal/laryngeal cancers.

It was observed in our study that the most common age group affected with head and neck cancer are in the range of 51 to 60 years. In a study done by LarizadehMSetal[8] the mean age group of head and neck cancer was found to be 53.03 years. In another study conducted by Das R, Kataki AC etal the mean age of head and neck cancer was found be to 56 years.

It was observed from our study that more than 70% of the head and neck cancers were diagnosed when they already had advanced locally that is stage III or stage IV. In a study conducted by Guizard, Anne-Valerie N etal[10] in France, similar findings were observed from an analysis of 1667 patients, 70.3% of the tumours were diagnosed in stage III or stage IV after the onset of the symptoms.

It was observed from our study that the most of the head and neck cancer patients were not consuming alcohol so the association between alcohol consumption and risk of head and neck cancer could not be determined. In a study conducted by Freedman ND etal[11] on 2 203 500 person-years of follow-up, 611 men and 183 women developed head and neck cancer with alcohol consumption.

It was observed from our study that the most of the head and neck cancer patients were consuming tobacco in the form of smoking or smokeless tobaccoand almost everybody was associated with head and neck cancer, most common among them was the oral cancer of about 76% which was also found to be statistically significant. Pooled analysis from a different population has also demonstrated that smokeless tobacco use is a risk factor for HNC, especially oral cancers.[12]Although, in the developed world, tobacco use has declined, but it still continues to be popular in the developing countries.[13] In India, tobacco use is more prevalent among men, rural population, illiterates, poor, and vulnerable section of the society.[14]

Conclusion: it was observed form our study that the relative risk of head and neck cancers was very high in tobacco users especially in oral cancers where it is 27 meaning which that there is 27 times more chance of getting oral cavity cancer if that person is using tobacco in some form or other. A behavioural change is warranted among the population through continued efforts by increasing the awareness among people that any type of tobacco products are harmful and should not be consumed

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