



EFFECT OF TOBACCO AND ALCOHOL IN SITE SPECIFIC UPPER AERODIGESTIVE TRACT TUMORS IN A HOSPITAL BASED STUDY

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ABSTRACT

Introduction: The head and neck squamous cell carcinomas (HNSCC) are a diverse group of malignancies. There were 890,000 new cases of head and neck squamous cell carcinomas (HNSCC) and 450,000 fatalities from this diverse group of cancers in 2018. **Results:** In this present study that tobacco chewing (smokeless) has etiological correlation with carcinoma of oral cavity, whereas tobacco smoking is etiologically related to Carcinoma pharyngeal and laryngeal region **Conclusion:** Our study confirmed that there is combined effect between tobacco and alcohol in head and neck cancer mainly in oral cavity.

KEYWORDS

Tobacco, Alcohol, Squamous Cell Carcinomas

INTRODUCTION

The head and neck squamous cell carcinomas (HNSCC) are a diverse group of malignancies⁽¹⁾ There were 890,000 new cases of head and neck squamous cell carcinomas (HNSCC) and 450,000 fatalities from this diverse group of cancers in 2018. According to the Global Cancer Observatory (GLOBOCAN), the incidence of HNSCC will continue to climb and will likely increase by 30% (or 1.08 million new cases yearly) by 2030⁽²⁾ Most common histological type of head and neck cancers are squamous cell carcinomas.

Therefore, this study was aimed at investigating the site-specific effect of tobacco and alcohol addiction, that is, tobacco chewing, smoking and or alcohol consumption that independently and synergistically involved in the development of malignancies in upper aerodigestive tract

MATERIALS AND METHODS

Study Design: Descriptive study.

Study Settings: Tertiary care hospital

Study Period: 18 months

Study Participants

Inclusion criteria: Patients presenting with neck showing mass lesion in upper aerodigestive tract Patients above 30 years of age

Exclusion criteria: Patients below 30 years of age Not willing to give consent for taking part in the study

Sampling Population: 130

RESULTS AND INTERPRETATION

Table 1: Age Distribution

Age	Count	Percent
20-30	3	2.3%
31-40	14	10.8%
41-50	31	23.8%
51-60	42	32.3%
61-70	31	23.8%
71-80	9	6.9%

Most common age group affected in the study was 51 to 60 years seen in 42(32.3%) of the study population

Table 2: Gender distribution.

Gender	Count	Percent
F	36	27.7%
M	94	72.3%

Among the study population, 94 (72.3%) cases were males and 38(27.7%) were females.

Table 3: Tobacco consumption and smoking

Only Tobacco Consumption-Smoke	Count	Column N %
Yes	21	16.2%
No	109	83.8%

Out of the 130 cases included in the study, 21(16.2%) cases had history of tobacco consumption and smoking.

Table 4: Tobacco consumption – smokeless

Tobacco Consumption-Smokeless	Count	Percent
Yes	23	17.7%
No	107	82.3%

Out of the 130 cases included in the study, 23(17.7%) cases had history of tobacco consumption - smokeless.

Table 5: Alcohol consumption

Only Alcohol Consumption	Count	Percent
Yes	34	26.2%
No	96	73.8%

34 out of 130(26.2%) patients had history of alcohol consumption alone and 96(73.8%) had no history of alcohol consumption.

Table 6: Tobacco and Alcohol consumption

Both Tobacco and Alcohol Consumption	Count	Percent
Yes	75	57.7%
No	55	42.3%

75(57.7%) out of 130 cases had history of both alcohol and tobacco consumption. 55(42.3%) patients did not had the habit of alcohol and tobacco usage.

Table 7: Descriptive analysis of Clinical diagnosis

Clinical Diagnosis	Frequency	Percent
CA Supraglottis	3	2.3%
CA Buccal Cavity	1	0.8%
CA Buccal Mucosa	19	14.6%
CA Glottis	10	7.7%
CA Hard Palate	1	0.8%
CA Larynx	3	2.3%
CA Maxilla	3	2.3%
CA Nasopharynx	7	5.4%
CA Oesophagus	5	3.8%
CA Oropharynx	1	0.8%
CA Parotid	1	0.8%
CA Post Cricoid	12	9.2%
CA Pyriform Fossa	21	16.2%
CA Thyroid	5	3.8%
CA Tongue	16	12.3%
CA Tonsil	9	6.9%
CA Vocal Cord	13	10.0%

Among the 130 patients, most common clinical diagnosis was carcinoma of pyriform fossa which was seen in 21(16.2%) cases and second common clinical diagnosis was carcinoma of buccal mucosa in 19(14.6%) patients.

Table8: Histopathological Diagnosis

Histopathological Examination	Count	Percent
Squamous cell carcinoma	129	99.2%
Adenocarcinoma	1	0.8%

Histopathological diagnosis revealed squamous cell carcinoma in 129(99.2%) of the cases.

DISCUSSION

Age Distribution

In the present study majority of patients were in the age group of 51-60 years. Carvalho AL et al.⁴ and Adisa A.O et al.⁵ in their study found that the most common age group affected was 56-65 and 50 – 60 years respectively. This is comparable to the present study.

Gender Distribution

In the present study majority of patients were males 94 (72.3%) cases. In a study done by Adeyemi BF et al.⁶ male predominance was reported in head and neck malignancies.

Tobacco Chewing

Out of the 130 cases included in the study, 23(17.7%) cases had history of tobacco consumption alone. In our study the cases with tobacco chewing were observed at higher risk for carcinoma in tongue and buccal cavity.

Jayant et al.⁷ have found that tobacco chewing was observed patients with carcinoma in oral cavity whereas tobacco consumption has increased risk for carcinoma of oropharynx, hypopharynx and carcinoma of larynx.

Smoking:

Among the smokers 28(21.5%) had duration of smoking more than 3 or 4 years and 14(10.8%) had duration of smoking more than 1 or 2 years. In the present study patients who smoke are prone to get carcinomas of tongue, buccal mucosa, buccal cavity, oropharynx predominantly. Study conducted by Jayant et al.⁷ showed that tobacco smoking has higher risk for carcinoma hypo- & oropharynx and carcinoma larynx. This was comparable to the current study.

Alcohol Consumption

Alcoholic beverages that contain acetaldehyde was a class I carcinogen, when metabolized it can cause head and neck cancer directly or indirectly. In the study population alcohol consumption was seen in 34 (26.2%) patients.

Study conducted by Bagnardi V et al.⁸ showed that alcohol drinking is associated with head and neck cancers. This is comparable to the present study. In occasional drinkers relative risk was 5.13 for oral and pharyngeal cancer, 4.95 for oesophageal squamous cell carcinoma and 2.65 for laryngeal.

Tobacco And Alcohol Consumption:

Majority of the patients who were diagnosed with carcinoma of buccal mucosa, glottis, pyriform fossa and tongue has both tobacco and alcohol consumption. In the present study carcinoma of head and neck tumor were also seen in non-alcoholic and tobacco users 55(42.3%).

Studies conducted by Beynon et al.⁹, Maasland DH,¹⁰ Hashibe M et al.¹¹ and Park JO et al.¹² concluded that both tobacco consumption and alcohol intake can increase the risk of head and neck cancer when compared to cases who consumed alcohol and tobacco alone. These findings were comparable to the present study.

Areas Of Distribution:

In the present study majority of the lesions were in oral cavity. 21(16.2%) cases had carcinoma of pyriform fossa and 19(14.6%) in buccal mucosa. Carcinoma of larynx was seen in 3(2.3%) cases. 128 patients presents with ulceroproliferative growth while 2 patients had swelling.

Study done by Tshering et al.¹³ observed head and neck cancers more in males than females for all anatomical sites except for salivary gland,

thyroid and sinonasal malignancies.

Histopathological Examination

Squamous cell carcinoma arises from squamous epithelium that usually line the throat, oral cavity and sinuses of head and neck region. This accounts for 90% of all the head and neck carcinomas. In my present study most of the head and neck malignancy show histopathological features of squamous cell carcinoma in exceptional to carcinoma of hard palate showing adenocarcinoma.

The present study was comparable to Siddiqi MS et al. In their study they stated that 96% of the head and neck cancers included in the study were of Squamous cell type.

CONCLUSION

Head and neck cancers are common in developing countries. Most common risk factors associated are alcohol consumption, tobacco and smoking. Both tobacco chewing and smoking act with each other at sites of direct exposure especially in oral cavity, oropharynx and hypopharynx. Malignancies of epithelial lineage are more common and squamous cell carcinoma is the most common histological type.

Our study confirmed that there is combined effect between tobacco and alcohol in head and neck cancer mainly in oral cavity. Tobacco chewing (smokeless) is associated with oral cavity and supraglottic tumours whereas tobacco smoking is associated with carcinoma of tongue, oral cavity and oropharynx. Tobacco and alcohol are responsible for a large proportion of head and neck cancers with predominance in buccal mucosa, glottis, pyriform fossa and tongue. Awareness has to be created among the public about the risk of cancer associated with tobacco and alcohol consumption.

However, a 55(42.3%) of head and neck cancers are not associated with alcohol or tobacco consumption. This suggests that further study has to be undertaken to find out the association between HPV infection and head and neck cancer.

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