

Incidence of Smoking and Alcohol Abuse in Cancers of Oropharynx, Hypopharynx and Larynx in Our Regional Institute

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Abstract: **Background:** Head and neck cancers consist of diverse group of upper aero - digestive tract malignancies that comprise cancers of the oral cavity, oropharynx, hypopharynx, larynx and oesophagus. Tobacco and alcohol abuse are predominant risk factors in these cancers with fivefold increase in risk of developing oral cavity, oropharynx and hypopharynx cancers, and a 10fold increased risk of laryngeal cancer, among tobacco users. The present study was conducted on 55 patients of either sex of oropharyngeal, hypopharyngeal or laryngeal cancer to know the incidence of smoking and alcohol intake among these patients. **Result:** In our study, out of 55 cases, smoking was most commonly seen habit among all cancers which was universal in oropharyngeal and hypopharyngeal and in 94.4% of laryngeal cancer. Alcohol abuse was present in 38.7%, 27.8% and 16.7% in oropharyngeal, laryngeal and hypopharyngeal cancers. Same pattern was seen with subjects who had smoking and alcohol both. Tobacco use was seen in 3.2% of oropharyngeal and 50% of hypopharyngeal cases. **Conclusion:** Our study provides strong evidence of major role of tobacco and alcohol consumption as risk factors of head and neck cancers. Along with these, there are other factors which play causative role in head and neck cancers such as poor nutrition, poor socioeconomic status and viral infections. Tobacco and alcohol consumption are rather common habits among the adult Indian population therefore cessation of either of these two agents can help preventing these cancers and reducing the overall burden of head and neck cancers.

Keywords: Smoking, Alcohol, Cancer, Oropharynx, Hypopharynx, Larynx

1. Introduction

Head and neck cancers consist of diverse group of upper aero - digestive tract malignancies that comprise cancers of the oral cavity, oropharynx, hypopharynx and larynx.¹ Globally, HNC incidence trends vary widely by country, reflecting differing trends in tobacco use, alcohol use, and sexual norms across countries.

Approximately 90% of patients with HNC have a history of tobacco use, with a fourfold to five - fold increase in risk of developing oral cavity, oropharynx and hypopharynx cancers, and a 10 - fold increased risk of laryngeal cancer, among tobacco users.^{2, 3} Smokeless tobacco, such as snuff or chewing tobacco is also an important head and neck cancer (HNC) risk factor, in particular for cancers of the oral cavity. The major risk factors for head and neck cancers in India are alcohol drinking and tobacco smoking. Low SES, such as low educational attainment and income, are strongly associated with increased risk of HNC.^{3, 4}

The present study was conducted on oropharyngeal, hypopharyngeal and laryngeal cancers to know the incidence of smoking and alcohol intake among these patients.

2. Material and methods

The present retrospective study was conducted in the Department of Otorhinolaryngology, Pt. B. D. Sharma PGIMS, Rohtak after approval from the hospital ethical committee. The study was conducted on 55 patients of either sex of oropharyngeal, hypopharyngeal or laryngeal cancer. The study was performed after explaining to the patient about the study and obtaining their informed consent. Detailed

history of substance abuse was taken from the patients and results were analysed using SPSS software.

3. Results

In our study, out of 55 cases, 30 patients had oropharyngeal cancer, 19 had laryngeal and 6 patients had hypopharyngeal cancer. 53 patients (96.4%) had history of smoking while 18 patients (32.7%) had alcohol abuse. Smoking was the most commonly seen habit among all cancers which was universal in oropharyngeal and hypopharyngeal and in 17 cases (94.4%) in laryngeal cancer. Alcohol abuse was present in 38.7%, 27.8% and 16.7% in oropharyngeal, laryngeal and hypopharyngeal cancers. Same pattern was seen with subjects who had smoking and alcohol both. Tobacco use was seen in 3.2% of oropharyngeal and 50% of hypopharyngeal cases (Table 1 & Figure 1).

Table 1: Personal habits distribution among different cancers

Personal habit	Oropharynx (n=30)	Hypopharynx (n=6)	Larynx (n=19)	Total
Smoking	30 (100%)	6 (100%)	17 (94.4%)	53 (96.4%)
Alcohol abuse	12 (38.7%)	1 (16.7%)	5 (27.8%)	18 (32.7%)
Smoking +Alcohol	12 (38.7%)	1 (16.7%)	5 (27.8%)	18 (32.7%)
Tobacco	1 (3.2%)	3 (50%)	0	4 (7.3%)

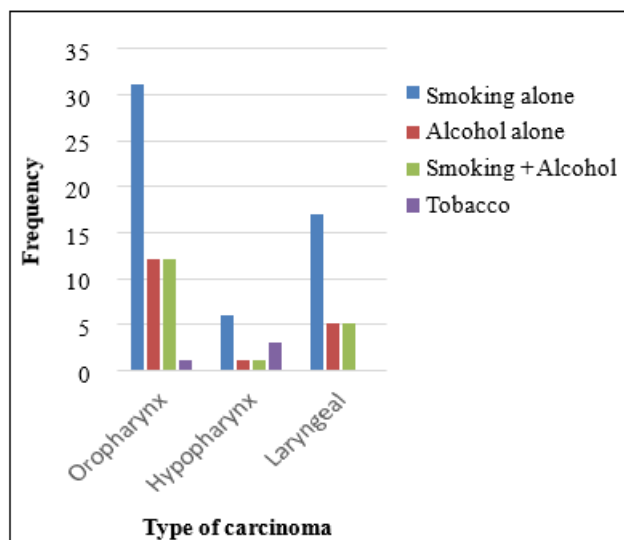


Figure 1: Bar diagram showing personal habits in different carcinomas

4. Discussion

In our study smoking was the most commonly seen habit among all cancers. In the patients with laryngeal cancer, 94.4% (17 cases) had history of smoking while 27.8% (5 cases) had alcohol intake.

In a study conducted by Thompson et al³⁹ on 104 patients with laryngeal cancers, 87 patients (83.6%) had a history of tobacco use while 49 patients (47%) acknowledged alcohol use.

Another study of Talamini et al⁴⁵ showed that current smokers, heavy smokers and alcohol drinking were associated with much higher relative risks among supraglottic cancers compared to glottic tumors. A retrospective study conducted by Gallus et al⁴⁶ on laryngeal cancers in women concluded that cigarettes smoking is the very high risk factor for laryngeal cancer in women, accounting for 78% of cases in this population. Alcohol and other selected dietary aspects account for 30% of cases. In the study of Menvielle et al⁴⁸ on 201 patients with hypopharyngeal cancer and 282 with laryngeal cancer, both cases and control group had the same risk factors, i. e. exposure to cigarette smoke and alcohol. Risks among ex - smokers were significantly lowered at approximately one - third of those for current smokers. Concurrent use of alcohol and smoking was found to have a synergistic effect on development of cancer.

In the study of Hossain et al⁵⁷ on supraglottic cancers, it was concluded that 94% were smoker, 60% were habituated with chewing betel leaf and betel nuts with or without other ingredient. Only 6% cases were alcoholic.

In a meta - analysis of 20 studies by Vecchia et al, the multivariate relative risks were about 2 times compared to non - drinkers, in the absence of evidence of a threshold. The risk increases by concomitant tobacco smoking, each agent approximately multiplying the effect of the other. After stopping drinking, some fall in risk becomes apparent only in long term. The supraglottis is more closely related to alcohol consumption, as compared to the glottis/subglottis.⁵⁵

In our study, out of 6 cases of hypopharyngeal cancer, all patients smoked while 16.7% had history of alcohol abuse. In oropharyngeal cancer, all patients gave history of smoking and 38.7% had done alcohol abuse in past.

Bhagat et al⁴⁷ conducted clinico - pathological study of 30 patients of hypopharyngeal cancer in which alcohol consumption, smoking and poor oro - dental hygiene were most important predisposing factors.

Basu et al⁵³ quoted it in their study that both tobacco and alcohol are dose dependent and synergistic risk factors.

In the study of Aich et al⁵⁴ on hypopharyngeal carcinoma, 86.7% patients had history of smoking. Smoking was found significantly associated with hypopharyngeal carcinoma ($p < 0.05$). Betel nut chewing and tobacco chewing was found to be significant factors to develop hypopharyngeal carcinoma.

Raval et al (2002)⁴³ concluded in a study that lack of nutrients like vitamin B12 and folate might have synergistic effect, along with habit of tobacco consumption on process of carcinogenesis. Thus consumption of tobacco in various forms such as smoking, bidi, betel quid (paan) along with alcohol is the major “preventable” risk factors.

Our findings were similar to previous studies suggesting the need of hour to cut off these risk factors to minimise the occurrence of head and neck cancers.

5. Conclusion

Head and neck cancers have diverse origin in different regions of India owing to the varying risk factors. Prevailing majority of these cancers is due to the use of tobacco smoking and alcohol abuse. Our study provides a strong evidence of major role of tobacco and alcohol consumption as risk factors of head and neck cancers. Along with these, there are other factors which play causative role in head and neck cancers such as poor nutrition, poor socioeconomic status and viral infections. Tobacco and alcohol consumption are rather common habits among the adult Indian population therefore quitting the use of either of these two agents can help preventing these cancers.

Informed consent

Written and informed consent was taken from the patient.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for the clinical information to be reported in the journal. The patients understand that their name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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