

Prevalence and Pattern of Oral Cancer in Jharkhand: A Cross Sectional Study

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ABSTRACT

Background: Tobacco and its other forms effects diverse sites of head and neck to develop cancer.

Material and Methods: A cross sectional study was conducted to study and examine the patients attending RIMS government hospital. All the data collected were entered into the spreadsheets.

Results: Smoking and chewing tobacco causes a high risk of oral cancer. Most of the tobacco consumers were in middle age (35-45). People younger than 30 years used betel-quid in abundance (48.1%). Tobacco in the form of Bidi was used by 41-50 age group. Tobacco in the form of Gutkha was used in people with less than ten years duration (21.7%). For frequency of 5-10 times per day, Bidi was consumed in 64.4% of instances.

Conclusion: A majority of the cases were reported in IIIrd and IVth stages of cancer with ignorance. Thus, Nationwide tobacco counseling and cessation is required in order to improve the quality of life.

Keywords: Tobacco, Head and neck, cancer, counseling.

INTRODUCTION

The Oral cavity cancer accounts for about 4% of all malignancies and is a significant health problem known worldwide.¹The prevalence rate ranges between 1% to 5%.² Most of the patients are middle-aged or elderly men. Most commonly the site involved are on the buccal mucosa, tongue, lower gingiva, and floor of the mouth, with the rest of the cases distributed throughout the remainder of the oral cavity. India accounts for one third of the world's oral cancer and has a high rate of pre-malignant

lesions.³ The World Health Organization classifies oral precancerous/ potentially malignant disorders into two general groups, as follows.^{4,5} • A precancerous lesion is "a morphologically altered tissue in which oral cancer is more likely to occur than its apparently normal counterpart." The precancerous lesions include leukoplakia,

erythroplakia, and the palatal lesions of reverse smokers. In developing countries, cancer is among the ten most common causes of mortality.⁶ In the present scenario world is heading towards various types of non-communicable diseases, which are also known as modern day epidemics. Among these modern epidemics cancer is the second most common cause of mortality in developed countries. Cancer, which is defined as abnormal growth of cell, can affect any tissue or organ of body. Oral cavity is the most common cancer site observed by Indian registries.⁷ Oral cancer is usually related to the use of tobacco in different forms.⁸ In India, the use of tobacco is common in forms of chewing and smoking.⁹ Epidemiological studies have shown that incidence of oral cancer varies significantly in different continents, and also between developed and developing countries like India.⁵ The etiology of oral cancer is multifactorial that is genetic, environmental, social, and behavioral.⁶ The

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consumption of tobacco is closely associated not only with the development of oral cancer, but also with the course of disease evolving a poor prognosis.⁵ Tobacco consumption has been blamed as the sharp rise in cancer cases in the country.¹⁰

The state of Jharkhand was created as the 26th state of Union of India in the year 2000. According to the last census report 2011, the population of Jharkhand is 3.29 crore, literacy rate 67.6% and urbanization ratio 24.1%. "A recent report by the World Health organization (WHO) declared the national capital to be alarmingly polluted to make way for respiratory diseases and even cancer. Similarly, Jharkhand can no longer be ruled out from this table. To make things worse since forever, people have been badly addicted to chew tobacco that has led to an increase in the number of oral cancer amongst men in the state to about 50 per cent roughly. As per data provided by ICMR, the estimated mortality cancer cases in Jharkhand was 12,380 in 2011, 12,790 in 2012 and 13,211 in 2013 and 13,645 in 2014.

MATERIAL AND METHODS

A cross-sectional study was conducted to assess the oral cancer status of Jharkhand with prior clearance from institutional ethical committee.

All the patients attending RIMS were included in the study. RIMS being one of the major hospital in government sector and a referral hub from PHC and CHC was included in the study. In the present study we have separated the cases referred from lower centres as out district cases. Sample size was calculated using the formula $n = 4(pq/L^2)$ where p = population proportion of positive character, $q = 1 - p$ & L = Allowable error after conducting a pilot study. A written informed consent was obtained from all the patients who were willing to be included in the study.

Training and calibration was done to prevent any diagnostic variability among the study participants. The data collected was compiled and entered into spreadsheet computer program (Microsoft excel 2007) and analysed using the Statistical Package for the Social Sciences version SPSS version 17 (SPSS Inc., Chicago, Illinois, USA). The descriptive statistics including computation of percentages, means and standard deviation were analysed. For all statistical tests CI and p level was set as 95% and $P \leq 0.05$

statistically significant. The statistical tests t -test and one way ANOVA was used for continuous variables and Chi-square tests for categorical data.

RESULTS

Most of the oral cancer cases belong to the 41-50 years age group (32.3%). In-district cases were predominant with 58.1%. Out-district cases in the age group < 30 consisted the smallest group (table). Most of the tobacco consumers were between 41-50 age group (table II). Overall, gutkha chewing habit was more prevalent. In less than 30 years age group, betel-quid was used in abundance (48.1%). Bidi was the choice of tobacco for 41-50 years age group. Table 3 illustrates the cases according to the duration and frequency of chewing and smoking tobacco per day. For less than ten years of duration, gutkha was consumed by most of the cases. This was largely due to the fact that relatively fewer studies have been reported from developing countries, including India, on the risk of cancer at different cancer sites due to the use of various form of tobacco. Oral cancer was the most common cancer in India accounting for 50-70% of total cancer mortality.¹ High proportion of cases among males may be due to high prevalence of tobacco consumption habits among males.

Table I Age distribution

Age	Sex		Total
	Male	Female	
10-20	12	7	19
21-30	18	9	27
31-40	28	10	38
41-50	37	11	48
Total	95	37	132

Table II: Site distribution.

Site	n	%
Buccal mucosa	30	22.7
Tongue lateral border	26	19.6
Retromolar area	19	14.3
Gingival buccal sulcus	16	12.1
Alveolus and buccal mucosa	11	8.3

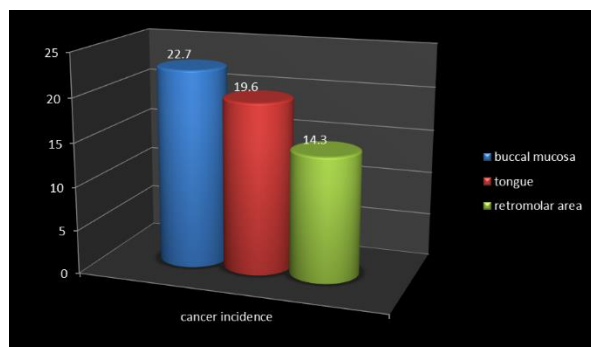


Fig 1: Comparison of the cancer incidence.

DISCUSSION

The overall risk of developing oral cancer among males was highest followed by females. Although, among middle-aged and elderly males and females, the pattern of use of chewing tobacco was the same. Tobacco use was found to be more common among the uneducated masses in India. This can often be related to less knowledge and awareness among the uneducated people regarding the health hazards of tobacco use. Poverty was also significantly associated with higher risk of use of chewing tobacco. Thus, it indicates that there is a relationship between these socioeconomic indicators and tobacco consumption, thereby leading to increased oral cancer incidence. In Jharkhand, the nonawareness of health hazards of tobacco is strongly associated with its use. The severity of health risks associated with tobacco use is sometimes so much inadequately understood by tobacco users that there is a need to spread comprehensive information about the health hazards of tobacco use among every subsection of the society.¹¹ Many studies have shown the association between the use of tobacco and high oral cancer incidence.^{12,13,14} Mehta *et al.* reported the reduced incidence of oral cancer among those who stopped or reduced tobacco use in rural population.¹¹

Oral cavity cancers were traditionally being thought of as a disease mainly affecting people of older age group. In the present article, the pattern observed is similar to earlier studies done. This increased incidence of oral cancer at old age group has been usually attributed to indiscriminate usage of substances, mainly tobacco and tobacco-related products, over a prolonged period of time, which leads to genetic damage. Immune surveillance

reduces at age 20 and above. This reduced immunity conjugating with indiscriminate usage of toxic substances justifies (AAR) oral cancer incidence in life gradually.¹⁵ This finding of AAR of all types of oral cancer incidence at older age holds true for our article as well.

Though these registries cover various parts of India as a whole, they do not efficiently represent various regions which are far distant from the center of location of Population based cancer Registries (PBCR)⁴

CONCLUSION

Early recognizing the symptoms by the patients and their families and spreading awareness by the government and other social bodies can help reduce the mortality rate. "Mostly people believe cancer only occurs to people who drink and smoke and after the detection, try to outcast the patient and their family. There are multiple causes for the disease and can be treated in a much better way if detected early. As Jharkhand has only one Government Dental Institute where oral cancer cases are reported. There are other private institutes where oral cancer reporting is not registered. Hence, more number of cancer registries should be established across country for more adequate representation of all regions of India.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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