

Original Article

THE PREVALENCE OF ORAL CANCER AMONGST TOBACCO CONSUMERS IN LUCKNOW

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Abstract

Background: Oral cancer is the 6th most common cancer in the world. It is more common in developing countries as compared to developed countries. The present study was conducted with the aim to establish the Prevalence of oral cancer amongst tobacco users in Lucknow district. **Materials and methods:** The present cross sectional study was conducted in Department of Public Health Dentistry, King George's Medical University, Lucknow, U.P., during a period of 8 months i.e. from August 2016 to March 2017. In this study individuals aged between 20-60 years, consuming tobacco in any form were included in the study. Complete history, frequency of tobacco consumption, type of tobacco consumption, age, education level and years of tobacco consumption were noted in a predesigned and pretested proforma. Data was analysed using SPSS software. **Results:** Majority of the subjects belonged to 20-30 years of age. There were 115 subjects who belonged to this age group. Out of 250 subjects, 69 subjects had the habit of consuming tobacco in either smoked or smokeless form. There were 20.3% of the tobacco consumers who had features of dysplasia. **Conclusion:** In our study, oral cancer was seen amongst 20.3% of the tobacco consumers. Tobacco consumption is increasing at a rapid rate despite of various awareness programmes by the government.

Keywords : Dysplasia, Incidence, Oral cancer, Tobacco

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This article may be cited as: Mishra G, Gupta VK and Malhotra S THE PREVALENCE OF ORAL CANCER AMONGST TOBACCO CONSUMERS IN LUCKNOW (U.P.). HECS Int J Com Health and Med Res 2017;3(3):42-45

INTRODUCTION

Oral cancer accounts for 350000 new cases and 128000 deaths occur annually because of oral cancer. It is the 6th most common cancer in the world. It is more common in developing countries as compared to developed countries. About two thirds of all the cases have seen to be occurring in developing countries.^{1,2} Various surveys have shown that consumption of tobacco, alcohol, unhealthy food, infection and sedentary lifestyles contribute to the major portion of cancer deaths. It has been seen that 43% of the cancer deaths are due to these.¹ The incidence of oral cancer in India has been found to be 48%.³ In a study by Pindbory et al, including 50,000 Indians over a period of 5 years and 30000 Indians over a period of 10 years, they concluded that precancerous lesions were most common in individuals who consumed tobacco in one form or

the other.^{4,5} Approximately 50% of the tobacco consumption in India is in the form of bidi and smokeless tobacco contributes to one fourth of the tobacco consumption which includes the use of chewing tobacco or mishri.⁶ Amongst the predisposing factors for oral cancer, smoking and tobacco consumption tops the list. Various other predisposing factors include, alcohol consumption, malocclusion, spicy food and malnutrition, improper denture fitting, sharp and broken teeth etc. According to a study on Indian population, the relative risk of oral cancer is more amongst tobacco consumers; it is 2.82 times amongst smokers and 5.98 times amongst tobacco chewers.⁷ Oral cancer is generally preceded by precancerous lesions and conditions. The prevalence of precancerous lesions have ranged from 2.5% to 8.4% amongst Indian patients

attending various hospitals.7,8. The chances of conversion of an oral premalignant lesion into oral cancer are 17% over a period of 7 years. Irregular or heterogeneous lesions with dysplastic changes have the highest rate of malignant transformation in developing countries. There is paucity of data on the epidemiology of oral cancer. There is dearth of information regarding incidence, prevalence and severity of oral cancer in specific regions.9-11

The present study was conducted with the aim to establish the Prevalence of oral cancer amongst tobacco users in Lucknow (U.P.).

MATERIALS AND METHODS

The present cross sectional study was conducted in Department Of Public Health Dentistry, Faculty of Dental Sciences, King George's Medical University, Lucknow during a period of 8 months i.e. from August 2016 to March 2017. In this study individuals aged between 20-60 years, consuming tobacco in any form were included in the study. All the subjects were informed about the study and a written informed consent was obtained from all in their vernacular language. A sample size of 250 was selected based on the prevalence of oral cancer. All the participants were told about the details of the study. Complete history, frequency of tobacco consumption, type of tobacco consumption, age, education level and years of tobacco consumption were noted in a predesigned and pretested proforma. Clinical examination of oral cavity was performed followed by histopathological study of the lesion to determine the degree of dysplasia. All the data was arranged in a tabulated form and analysed using SPSS software. Percentage was used to express the data.

RESULTS

In the present study a total of 250 subjects were enrolled. Table 1 illustrates the age group of the study population. Majority of the subjects belonged to 20-30 years of age. There were 115 subjects who belonged to this age group. The least number of subjects were seen in 51-60 years group i.e. 13.6% (n=34). There were 15.2% (n=38) subjects and 25.2% (n=63) subjects who belonged to 41-50 years and 31-40 years respectively. Table 2 shows the type of tobacco consumed by subjects in the study. Out of 250 subjects, 69 subjects had

the habit of consuming tobacco in either smoked or smokeless form. Majority of population consumed smokeless tobacco. There were 82.6% of the subjects who consumed smokeless tobacco. Only 5.7% (n=4) of the subjects did smoking alone. Both forms of tobacco were consumed by 11.5% (n=8) of the subjects. Table 3 shows the prevalence of oral cancer amongst the study population. There were 20.3% of the tobacco consumers who had features of dysplasia. It ranged from mild to severe dysplasia. Mild dysplasia was seen in 35.7% (n=5) subjects. Features of moderate dysplasia were present in 50% (n=7) of the study population. Severe dysplasia was seen in 2 subjects (4.3%).

Table 1: Age distribution of the study population

Age Group	Frequency	Percentage
20-30	115	46
31-40	63	25.2
41-50	38	15.2
51-60	34	13.6

Table 2: Type of tobacco consumption

Type	Frequency	Percentage
Smokeless	57	82.6
Smoking	4	5.7
Both	8	11.5
Total	69	100

Table 3: According to type of dysplasia

Type	Frequency	Percentage
Mild dysplasia	5	35.7
Moderate dysplasia	7	50
Severe dysplasia	2	4.3

Total	14	100
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DISCUSSION

The first and the third most common cancer amongst men and women in India are cancer of oral cavity and pharynx respectively.¹⁴ According to a survey maximum annual consumption of cigarettes were during 1970-1980. This consumption declined by 40% in the year 1990.¹⁵ During the period from 1993-1994, the consumption of tobacco amongst men residing in urban and rural areas were 23% and 34% respectively and that amongst women of rural and urban areas were 4% and 9% respectively. This percentage was comparatively higher during 1987-1988. There are about 150 million males and 34 million females who consumed tobacco in the year 1996.^{16,17} In our present study, out of 250 subjects, 69 subjects had the habit of consuming tobacco in either smoked or smokeless form. Majority of population consumed smokeless tobacco. There were 82.6% of the subjects who consumed smokeless tobacco. Only 5.7% (n=4) of the subjects did smoking alone. Both forms of tobacco were consumed by 11.5% (n=8) of the subjects. Bidi and regular cigarettes, both are equally harmful forms of tobacco. It has been shown by various studies conducted in India that smoking bidi produces more carbon dioxide, tar and various other alkaloids as compared to regular cigarette.^{17,18} A form of bidi known as filterless design has low combustibility and it contributes to more toxin yield as compared to regular cigarettes.¹⁷ similar to our study, in a study conducted by Saraswathi TR et al, smokeless forms of tobacco i.e. pan masala, gutkha were consumed by 70% of the study population.¹⁹ In our present study, there were 20.3% of the tobacco consumers who had features of dysplasia. It ranged from mild to severe dysplasia. Mild dysplasia was seen in 35.7% (n=5) subjects. Features of moderate dysplasia were present in 50% (n=7) of the study population. Severe dysplasia was seen in 2 subjects (4.3%). In a similar study conducted by KS Talole et al, amongst 200 subjects residing in Mumbai, they found that 82 subjects who consumed tobacco more than 5 times a day had oral lesions. 24

subjects who consumed tobacco less than 5 times a day had oral lesions. They concluded that both type and frequency of tobacco consumption are an important risk factor for occurrence of oral lesion.²⁰ In a study conducted by Narasannavar A et al amongst rural population of belgam, they found that 87% of the subjects consumed smokeless tobacco and amongst them oral lesions were shown by 37% subjects. In their study, the prevalence of precancerous lesions and conditions was 51.12%. The major limitations of our study were smaller sample size and smaller duration of study. Study involving a large group of people could give the exact prevalence of oral cancer in the area.

CONCLUSION

In our study, oral cancer was seen amongst 20.3% of the tobacco consumers. Tobacco consumption is increasing at a rapid rate despite of various awareness programmes by the government. The younger population is becoming an addict of tobacco. In our study also, younger population consumed more tobacco.

REFERENCES

1. Dhami.J, Ghaffar, Ghafur. WHO: A profile of the premalignant and malignant lesions/conditions in Chennai. http://dspace.gla.ac.uk/bitstream/1905/497/1/Dhami_Javaid_ghaffar_Ghafur_Elective.pdf
2. Uplap P A, Mishra GA, Majumdar P, Gupta SD, Rane PS, Sadalge PK, Avasare AM. Oral cancer screening at workplace in India-one-year follow-up. Indian journal of Community Medicine. 2011; Vol : 36, 2:133-138
3. Binnie WH: Oral cancer, in Dolby AE (ed): Oral Mucosa in Health and Disease. Oxford, Blackwell Scientific Publications, 1975, pp 301-323.
4. Mehta FS, Pindborg JJ, Hamner JE III, et al: Report on investigations of oral cancer and precancerous conditions in Indian rural populations, 1966-1969. Copenhagen, Munks gaard, 1970.
5. Gupta PC, Mehta FS, Daftary DK, et al: Incidence rates of oral cancer and natural history of oral precancerous lesions in a

- 10-year follow up study of Indian villagers. *Community Dent Oral Epidemiol* 8:287-333,1980.
6. Panchamukhi PR, Woolery T, Nayantara SN. Economics of bidis in India. In: Gupta PC, Asma S, editors. *Bidi Smoking and Public Health*. Ministry of Health and Family Welfare, Government of India, 2008. p. 167-95.
 7. Jayant K, Balakrishnan V, Sanghvi LD, et al: Quantification of the role of smoking and chewing tobacco in oral, pharyngeal, and oesophageal cancers. *Br J Cancer* 35:232-235,1977
 8. Mehrotra R, Thomas S, Nair P, Pandya S, Singh M, Nigam N, et al. Prevalence of oral soft tissue lesions in Vidisha. <http://www.biomedicalcentral.com/1756-0500/3/23>
 9. Byakodi R, Shipurkar A, Byakodi S, Marathe K. prevalence of oral soft tissue lesions in Sangli, India. *Journal of Community Health* .2011; Vol. 36:5; 756-59.
 10. Aruna DS, Prasad KV, Shavi GR, et al (2011). Retrospective study on risk habits among oral cancer patients in Karnataka Cancer Therapy and Research Institute, Hubli, India. *Asian Pacific J Cancer Prev*, **12**, 1561-6.
 11. Cebeci AR, Gülşahı A, Kamburoğlu K, et al (2009). Prevalence and distribution of oral mucosal lesions in an adult turkish population. *Med Oral Patol Oral Cir Bucal*, **14**, 272-7.
 12. Kumar Y, Mishra G, Gupta S, et al (2011). Cancer screening for women living in urban slums - acceptance and satisfaction. *Asian Pacific J Cancer Prev*, **12**, 1681-5.
 13. Parkin DM, Whelan SL, Ferlay J, et al. *Cancer incidence in five continents*, vol. VII. IARC Scientific Publications No. 143. Lyon: IARC, 1997.
 14. Corrao MA, Guindon GE, Sharma N, et al. *Tobacco control country profiles*. Atlanta, GA: American Cancer Society, 2000.
 15. National Sample Survey Organization. Sarvekshana, Journal of the National Sample Survey Organization. Department of Statistics, Ministry of Planning, Government of India, July–September 1991;XV: 375, 406.
 16. National Sample Survey Organization. Sarvekshana, Journal of the National Sample Survey Organization. Department of Statistics, Ministry of Planning, Government of India, January–March 1998;76.
 17. Pakhale SS, Jayant K, Bhide SV. Chemical analysis of smoke of Indian cigarettes, bidis and other indigenous forms of smoking— levels of steam-volatile phenol, hydrogen cyanide and benzo- (a)pyrene. *Ind J Chest Dis Allied Sci* 1990;32:75–81.
 18. Pakhale SS, Mary GB. Distribution of major and minor alkaloids in tobacco, mainstream and sidestream smoke of popular Indian smoking projects. *Food Chem Toxicol* 1998;36:1131–8.
 19. Saraswathi TR, Ranganathan K, Shanmugam S, Sowmya R, Narasimhan PD, Gunaseelan R: Prevalence of oral lesions in relation to habits : Cross-sectional study in South India. Department of Oral and Maxillofacial Pathology, Chennai, India, 2006, Vol.: 17, issue : 3, 121-5.
 20. Talole KS, Bansode SS, Patki MB: Prevalence of Oral Precancerous Lesions in Tobacco of Naigaon, Mumbai, Indian Journal of Community Medicine, Vol. 31, No. 4 (2006-10 - 2006-12)
 21. Narasannavar A, Wantamutte AS. Prevalence of oral precancerous lesions and conditions among tobacco consumers in rural population around Belgaum. A community based cross sectional study. *IOSR J Dent Med Sci*. 2014;13:31-4.

Conflict of Interest: None

Source of Support: None

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