Original Article

ORAL PRECANCEROUS LESIONS IN TOBACCO USERS ATTENDING DENTAL OUTDOOR IN JHALAWAR DISTRICT OF RAJASTHAN

Panwar Sajid K[1], Ansari Shakeel M[2], Mulla Shakila K[3]

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Author's Affiliation:
[1]Assistant Professor, Dept. of Dentistry [2]Senior Resident, Dept. of Psychiatry, [3]Assistant Professor, Dept. of Community Medicine, Jhalawar Medical College, Jhalawar, Rajasthan

Correspondence:
Dr Shakeel M. Ansari
House No. 2-G-3, Housing Board Colony,NH-12 Kota road, Jhalawar. Rajasthan
Email:shakil_77@rediffmail.com

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ABSTRACT

Background: Tobacco is well established risk factor for oral cancer. Different aspects of tobacco consumption like mode of consumption, duration and frequency of consumption might influence occurrence of precancerous lesions. Another factor in tobacco consumption is 'severity of tobacco use', which is not assessed routinely while history taking. Precancerous lesion is an alarm for progression towards cancer. Unfortunately awareness regarding precancerous lesion is lacking in the community. Hence the current study was done to correlate different aspects of tobacco consumption with occurrence of precancerous lesion and to know the awareness status of persons having precancerous lesion.

Methodology: Cross-sectional study on sample of 240 tobacco users attending dental outdoor. Fagerstrom test for nicotine dependence and smokeless tobacco scale was used to assess severity of nicotine dependence.

Results: In the current study prevalence of precancerous lesion was found to be 40%. 73% of subjects were unaware of precancerous lesion. Tobacco dependence severity score >5 (p =0.03) and >5 years duration of consumption (p =0.04) were found significant factors.

Conclusion: Severity of tobacco consumption is an important determining factor in precancerous lesion. Intensive community participation is needed for screening precancerous lesions in tobacco users and running awareness program in collaboration with de-addiction services.

Key-words: Oral precancerous lesion, tobacco, Fagerstrom test, nicotine dependence, smokeless tobacco dependence scale

INTRODUCTION

The strong association of the oral cavity cancer with tobacco use is well established. 80% of oral cancer cases are associated with tobacco use. [1] Today, several products made up of, or containing tobacco, are available in the market and people are habitual of consuming them in the form of pan (Quid: defined as substance or group of substances remaining in contact with the oral mucosa containing one or both of the two basic ingredients i.e. tobacco and areca nut), sopari (areca nut), smoking and naswar (snuff). Tobacco smoke and unburnt tobacco contain hydrocarbons and several potent nitrosamines which lead to oral cancers. [2]

Different aspects of tobacco consumption play a role in development of oral cancer. Routinely assessed aspects are mode, duration and frequency of tobacco consumption. One more relatively ignored aspect is severity of tobacco consumption.

Unfortunately despite of advances in surgery, radiation therapy and chemotherapy; the 5-year survival rate has not changed substantially in the past few decades.[3] Because five-year survival is directly related to the stage at diagnosis, the most logical approach to decrease morbidity and mortality associated with oral cancers is to increase early detection of suspicious oral precancerous lesions and educating medical, dental professionals and the public about the benefits of preventive screening. [4]

With this background, screening of patients indulged in tobacco use was done in the current study to find out prevalence of precancerous lesion in them, to correlate between different aspects of tobacco use and precancerous lesion; and also to know the awareness status among persons having oral precancerous lesion.

METHODS:

Study was conducted at dental outpatient clinic of tertiary care centre at Jhalawar district of Rajasthan. As this is the only tertiary care centre in the district, the catchment area of this centre covers whole of the Jhalawar district. It was a cross-sectional study. Study population comprised of patients visiting dental outdoor with different oral/ dental problems. All such patients with discrete complaints were asked about the habit of tobacco consumption. Only those with history of tobacco consumption were recruited in the current study. Such 240 tobacco users formed the study sample. Consent was obtained from each enrolled person. Study period was from October 2011 to December 2011.

Predesigned questionnaire was used to obtain socio-demographic and clinical data and study subjects were assessed for severity of tobacco dependence using Fagerstorm test for nicotine dependence[5] and smokeless tobacco dependence scale[6] by psychiatrist. The Fagerstrom Test for Nicotine Dependence (FTND) is 6 item test developed with the aim to diagnose the severity of dependence among smokers. The test can be filled out either by the therapist/ researcher or the smoker. A score of 5 or more indicates a significant dependence, while a score of 4 or less shows a low to moderate dependence. Smokeless Tobacco Dependence Scale is used to find out severity of dependence on smokeless tobacco. It has often been assessed with questionnaires derived from FTND, with the addition of specific items in concern with smokeless tobacco.

Thorough clinical examination of oral cavity was then performed by oral surgeon as per the recommended components of an oral cancer examination.[7] Components of an Oral Cancer Examination include examining head, neck, lymph nodes, lips, buccal mucosa, palate, gingiva, tongue, floor of mouth, oropharynx thoroughly. Personal privacy and confidentiality was maintained.

Statistics - All collected data were entered and processed by using the SPSS (Statistical Package for Social Sciences) version 16. The results were tested for risk factors and statistical significance was evaluated by applying chi-square test, risk was estimated by odds ratio. A 'p' value of <0.05 is deemed as statistically significant (Sig.).

RESULTS

The study involved 240 tobacco users screened for detection of precancerous lesion based on clinical examination. The prevalence of precancerous lesion in the current study subjects was 40%. Out of these, 73% of subjects were unaware of precancerous lesion and those aware of its presence did not know the fact that it could turn into cancer. Most of the subjects with precancerous lesion were in 31-45 years age group and were males. But statistically, age and gender were not found to be significantly associated with precancerous lesion. Most common type of precancerous lesion in this study was leukoplakia (Table 1).

Table 1: Distribution of precancerous lesions in tobacco users (n= 96)

Type of Lesion	Subjects (%)
Leukoplakia	45 (46.8)*
Erythroplakia	4 (4.1)
Oral Submucous fibrosis	26 (27.08)
Tobacco pouch stomatitis	10 (10.4)
Lichen Planus	2 (2.08)
More than one disease category	9 (9.3)

While studying different forms of tobacco consumption like Tobacco quid (Khaini), Gutka, Pan with tobacco, Smoking or more than one form; it was found that persons chewing tobacco quid have highest risk for development of precancerous lesion. Using Chi square test this was found statistically significant (p= 0.02). Buccal mucosa was found to be the most common site associated with precancerous lesion.

Table 2 shows that, severity of tobacco consumption assessed in terms of more than 5 nicotine dependent score is associated with occurrence of precancerous lesion (p= 0.03). Those subjects who were consuming tobacco for more than 5 years were found to be significantly associated with precancerous lesion compared to those consuming it for less than 5 years (p= 0.04). With the help of Odd's ratio, risk in those who were consuming tobacco for more than 5 years was found 1.7 times higher.

Table 2: Correlation of Severity and Duration of tobacco use with Precancerous lesion

Aspect of Tobacco Consumption	Subject with precancerous lesion	Subject with no precancerous lesion	χ^2value	'p' value
Severity of tobacco consumption (Nicotine dependence score)				
>5	80	106	3.12	0.03 (Sig.)*
<5	16	38		
Duration of tobacco consumption (years)				
>5	78	103	2.93	0.04 (Sig.)*
<5	18	41		

DISCUSSION

Out of 240 tobacco users who visited dental outdoor for different reasons, 40% were found to have precancerous lesions. This is comparable to the results of study by K. S. Talole et al. (2006)[8] conducted in Mumbai, which reports prevalence of precancerous lesions in tobacco users to be 53%. Though prevalence of precancerous lesion was not compared between tobacco users and non-users in the current study, still such high magnitude of precancerous lesions in tobacco users is real matter of concern. Importantly 73% of these subjects suffering from precancerous lesions had no idea about its presence. It was incidentally found during thorough clinical examination for oral cancer. Rest of the subjects who were aware of the lesion did not aware of its cancerous nature. No one was presented with complaints related to precancerous lesion specifically. This shows extremely poor awareness about such precancerous lesions in the community. As it is natural human tendency to ignore asymptomatic lesions, there is need to educate community about cancerous nature of such asymptomatic or mildly symptomatic lesions and their causal association with tobacco consumption.

Tobacco Quid (khaini) chewing was found highly associated with precancerous lesion in current study. This also favours the most common site of precancerous lesion found in the study, the buccal mucosa. Such tobacco quid kept for long time in the mouth would obviously lead to more local injury.

As subjects who were rated >5 score on FTND and Smokeless Tobacco dependence scale were significantly associated with precancerous lesion, it emphasises 'severity of tobacco consumption' as an important aspect to be evaluated during history taking. Tobacco consumption for more than 5 years duration was found to increase risk of precancerous lesions 1.7 times than others. Tobacco is well established risk factor for cancer which is substantiated in the current study.

Interpretation of data from a single institution has clear limitations. The data reflects the specific chunk of population reporting to the hospital and not the community as a whole; however this study emphasises role of primary care physicians who by doing recommended oral cancer examination in tobacco users, can identify precancerous lesion in those who visit them for different problems.

CONCLUSION

The oral cavity and oropharynx are important areas that should be carefully inspected and palpated, particularly in tobacco users, to evaluate for oral and oropharyngeal cancer.

Primary care physician must do thorough screening for precancerous lesion during routine clinical examination of oral cavity in tobacco users. As severity of tobacco consumption is a determining aspect for development of precancerous lesions, it should be assessed each time while taking history of the patient.

Appropriate counseling and psychiatric care should be offered to those who chew tobacco or snuff and those persons who smoke cigarettes, pipes or cigars; to treat nicotine dependence. Good consultation liasioning with psychiatrist is required for motivating tobacco users to undergo deaddiction treatment. This can be a primary prevention against development of precancerous and cancerous conditions.

Intensive health education in the community should start emphasizing etiological role of tobacco in initiation, progression of cancers and about asymptomatic nature of precancerous lesions.

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