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Original Article

SCREENING FOR PRE-MALIGNANT CONDITIONS IN THE ORAL CAVITY OF CHRONIC TOBACCO CHEWERS

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ABSTRACT

Oral cancer is a major health problem in tobacco users all over the world. It is one of the ten most common cancers in the world. Oral cancer is almost always preceded by some type of precancerous lesion. The precancerous lesions can be detected upto 15years, prior to their change to an invasive carcinoma. It usually affects between the ages of 15 and 40 years. It may be triggered by factors like frequency and duration of tobacco consumption, alcohol, poor oral hygiene etc. This study was conducted primarily to screen chronic tobacco chewers for the presence of oral pre-malignant conditions and secondly to educate them about the hazards of tobacco and motivate them to quit the habit. This was a cross sectional study conducted at Badi gawaltoli area of Indore. Tobacco chewers using tobacco for more than 5yrs were included in the study. Chronic tobacco chewers were screened for oral pre-malignant lesions followed by an educational intervention about the harmful effects of tobacco. Two follow ups were made to motivate them to quit the habit and to get treatment for their lesions. An open ended semi-structured questionnaire was administered to chronic tobacco chewers to assess their habit of tobacco chewing, smoking, their knowledge regarding lesions in their mouth, hazards of tobacco and any cessation efforts. Among the 80 identified chronic tobacco chewers, 60 were males and 20 were females. Lesions such as leukoplakia, erythroplakia and oral sub-mucosal fibrosis were found in 10 females (50%) and 24 males (40%).

Key words: tobacco chewers, oral malignant condition, screening

INTRODUCTION

Oral cancer is the most common cancer in India and according to Dr Geoff Craig "People are dying of oral cancer because of ignorance". Oral cancer is almost always preceded by some type of precancerous lesion.The precancerous lesions can be detected for upto 15years, prior to their change to an invasive carcinoma. It usually affects between the ages of 15 and 40 years. It may be triggered by factors like frequency and duration of tobacco consumption, smoking etc.

The term leukoplakia is defined by the WHO as an "a white patch or plaque that cannot be scraped off and cannot be characterized clinically or pathologically as any other disease".[1] Approximately 3% of the world's population have leukoplakic lesions, and somewhere between 5% and 25% of these lesions are pre-malignant. Buccal mucosa and oral commisures are the most common sites.

It has two clinical types:-

Homogenous - presents with a smooth or wrinkled white patches. It is less often associated with malignancy.

Nodular - presents as white patches or nodule on erythematous base. It has higher incidence of malignant transformation.[2]

Use of tobacco is associated with more mortality and morbidity than any other personal, environmental or occupational exposure. Smokeless tobacco has 100 times higher concentration of carcinogens than cigarettes. Each year about 5,75,000 new cases and 50,20,000 deaths occur worldwide.1.8 Billion cases present worldwide.One out of every five death is due to tobacco.[3]

Oral cancer is a major problem in India also. Dr Surendra Shastri head of preventive oncology at Tata Memorial Hospital gave us a stunning information that "There are about 7,00,000 new cases of cancers ever year in India out of which tobacco related cancers are about 3,00,000, cancer of uteri are 1,00,000 and 80,000 breast cancer. Cost of treatment of oral cancer is about 3.5 lakh. Every 2 seconds a child in Mumbai tries tobacco. This can be completely prevented by simple changes in lifestyle and regular screening and even have health benefits that reach beyond cancer. About 2000 deaths a day in India is tobacco related."

Total economic cost of treating tobacco related diseases is more than the revenue generated from the tobacco.

Common form of tobacco consumption in India:

- Gutka is a mixture of betel nut and chewing tobacco. It is extremely addictive and is apparently targeted at youngsters.
- Quid is the mixture of tobacco and lime and extensively consumed in India.

Be it in the form of Gutka, Quid, snuff or misri and so on, the tobacco when kept in mouth leaches out carcinogens, which act on the mucosa causing precancerous lesions, which lead to cancer.

METHODOLOGY

The present study was conducted in Indore (Madhya Pradesh) with the objectives to screen chronic tobacco chewers for the presence of oral pre-malignant conditions and to educate them about the hazards of tobacco and motivate them to quit the habit. Badi gwaltoli slum was chosen by lottery random sampling .Cases were defined as those chewing tobacco for past 5 continuous years. 80 chronic tobacco chewers were identified. An open ended semi-structured questionnaire was administered to chronic tobacco chewers to assess their habit of tobacco chewing, smoking, their knowledge regarding lesions in their mouth, hazards of tobacco and any cessation efforts.

Oral inspection and examination of oral cavity for pre-malignant lesions such as leukoplakia, erythroplakia and oral sub-mucosal fibrosis was done under aseptic conditions using gloves and disposable tongue depressor.

Individuals were simultaneously educated about the hazards of tobacco consumption with the help of posters and photographs and were motivated to give up the habit. The education included the association of tobacco consumption with different types of cancer, control measures and healthy lifestyle. Individuals were referred to cessation clinics to help them give up the habit. Individuals who were found to have any of the pre-malignant lesions in the oral cavity were referred to Maharaja yashwant rao hospital for further diagnosis and management of the lesions.

Two follow up visits were done at an interval of 10 days, to enquire about the efforts made for cessation of the habit and to see the compliance to the referral. Individuals who did not go for checkup to hospital were motivated again and asked for the reasons of non compliance.

RESULTS

The total number of cases identified in the study was 80 and 75% of it were males. 53% of the male tobacco chewers in study area were found to start the habit of tobacco chewing around the age of 10-17 yrs. Surprisingly, 9% of male child initiated this habit before even attaining age of ten years. However 13 out of 20 females i.e. 65% initiated tobacco chewing in the age group of 10-17yrs. Stress either due to economical or family problems and influence of friends and family members were most important initiating factor in both the sexes.

Betel nut with tobacco was found to be most commonly used in the study population. Betel nut contains an alkaloid known as Arecoline which is carcinogenic. Consequently, the proportion of individuals with lesions in this category (using beetle nut with tobacco) was highest. In our study the presence of lesions was found to be less if tobacco is chewed alone. On

examination the presence of pre-malignant lesions was six times more common in those individuals who were chewing tobacco for more than ten years

Table 1: Distribution of cases according to frequency of consumption of tobacco

Frequency of Consumption	Lesions Absent	Lesions Present (%)	Total
Less than 5 times	13	1 (7%)	14
5-10 times	12	11 (47%)	23
10-15 times	14	3 (18%)	17
15-20 times	3	12 (80%)	15
20-25 times	2	5 (71%)	7
More than 25 times	2	2 (50%)	4
Total	46	34(42%)	80

Lesions were found mainly in those who keep the quid in their mouth for too much time. Significant association was found between the place where quid is kept and lesion appearance. Lesions were more in persons who keep quid in buccal cavity as compared to those who keep it in between teeth and lips. Table 1 shows that the chances of oral lesions was found to be more with >5 times/day use of tobacco (p value 0.0003, df 5)

History of smoking and alcoholism was not found to be significantly associated with the presence of pre-malignant lesions. In the study population, 87% of males and 85% of females were found to have cessation trials before screening and educational intervention .65% of females and 46% of males were found to have tried for cessation at least one time before the screening and educational intervention. 88% of study population who tried fo cessation suffer from various withdrawal symptoms like irritability, headache, constipation, confusion and tremors during cessation trials. Inspite of fore-knowledge about the health hazards of tobacco consumption in 85% of females and 95% of males (Fig 1); they were still chewing tobacco. After the screening and educational intervention, it was found that there was a slight increase in the number of people going to hospitals for treatment of lesions and cessation clinics for quitting the habit.

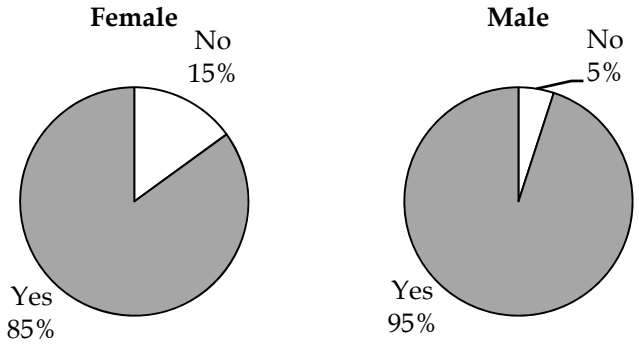

Fig 1: Awareness about the hazards of tobacco

DISCUSSION

The present study shows that in Badi gawaltoli community, the oral pre-malignant lesions is almost present in one out of every three persons who are using tobacco for more than five years. This was screening program based on clinical examination carried out by pre-final students (and not by experienced surgeons). Therefore, false positive and false negative cases are likely to occur and this fact needs to be taken into account while drawing any conclusions.

Many studies have reported the relationship between frequency of tobacco consumption and presence of oral pre-malignant lesions, duration of tobacco consumption and development of lesions, effect of betel nut on the development of submucosal fibrosis in tobacco chewers. The findings of this study corroborate with findings of these studies. The lesions were more common in those with a history of more frequent and longer duration of tobacco use and use of beetle nut along with tobacco.

40% of the males and 50% of the females chewing tobacco are having pre-malignant

lesions and it is comparable with studies conducted at Naiga on community (Mumbai)[4] where 45.6% males and 57.98% females found to be having oral pre-malignant lesions.

Among the factors studied, habit of smoking and alcohol consumption are not so important influencing factors in the development of lesions, which is not similar to the observation of P.C.Gupta.et.al (Gandhinagar).[5]

The lesions were found to be more common in those chewing betel nut along with tobacco (57%). The use of betel nut increases the friction over oral mucosa resulting in mechanical trauma to oral cavity. The betel nut also releases Arecoline which is carcinogenic. A similar finding was observed in the study conducted by Dr.Daftary.et.al (Tata research foundation, Mumbai) [6] in which 45% of those who were chewing tobacco along with beetle nut were found to have lesions.

The individuals with lesions were referred to the MY hospital for further diagnosis and management. But only few went to the hospital. The reasons for not being able to visit the hospital were lack of time, not considering the problem as serious, loss of wages etc. The present study also highlights initiation of tobacco use in childhood which increases the duration of exposure to carcinogenic substances in tobacco and therefore increases the risk of development cancer in early productive part of life. It is very important to have effective preventive strategies to halt this problem. We can prevent this problem either by strong campaign or health education about the hazards of tobacco use or any oral lesions and also by including them in educational curriculum for school going children and by implementing a task force comprising of dentists, counselors and psychiatrist.

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