

PREVALENCE OF ORAL SUBMUCOUS FIBROSIS AND USE OF TOBACCO AND RELATED PRODUCTS AMONGST SCHOOL GOING MALES

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ABSTRACT

This cross-sectional study was conducted to evaluate the prevalence of oral sub-mucous fibrosis among male school going children in a low socio-economic class and to analyze the relationship between oral submucous fibrosis and the use of various form of tobacco and areca nut. It was conducted on 54 male school going children aged between 10-19 years studying in classes VI to X of a public school in the catchment area of Hamdard University Dental Hospital Block-L North Nazimabad, Karachi. Results of the study showed that 50% of the study subjects used tobacco and its related products and amongst them 7.4% of Oral Submucous Fibrosis cases were identified. Tobacco and its related products have flooded the Pakistani market being cheap and convenient and have become popular in school age groups. They have been identified as a high risk for occurrence of the precancerous lesion (oral submucous fibrosis). Screening system in all schools must be introduced to identify precancerous lesion at an early stage.

Key words: Oral submucous fibrosis, tobacco use, prevalence, low socioeconomic class, school going children

INTRODUCTION

Oral cancer is one of the cause factors of four leading non communicable diseases (i.e. cardiovascular diseases, cancer, chronic obstructive pulmonary disease and diabetes). These diseases together have caused 30 million deaths globally. Use of tobacco and its various forms are one of the major risk factors of oral cancer. In 1990, it was estimated that tobacco caused just 3.9 million deaths, demonstrating the rapid evolution of the tobacco epidemic and new evidence of the size of its hazard, with most of the increase in developing countries.¹

In India 30% to 40% of all reported cancers are oral cancers,² a remarkably high prevalence that is closely associated with several form of tobacco smoking and chewing. The occurrence of oral cancer is most likely related to low socio-economic status in

United States as it has also been shown to be in Britain.³ A standard measure of oral cancer severity is the five years relative survival rate.⁴ The prospects of survival are considerably higher when the cancer is confined to a local lesion as opposed to regional or distant spread having already occurred when the diagnosis is made.⁵ Five year survival is 4 times greater when tumors are diagnosed at localized stages rather than after metastasis has occurred.⁶ It follows that cancer and pre-cancerous lesion should be diagnosed as early as possible if treatment is to have good prognosis.

Early detection of oral cancer by using visual inspection of the mouth is being considered in countries where incident is high, such as Bangladesh, India, Pakistan and Sri-Lanka.⁷ Oral cancer is the eleventh most common cancer worldwide and tobacco use is estimated to account for about 41% of oral/pharyngeal cancer cases in men and 11% in women. Among

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males, cancer of oral cavity and larynx is the most frequently recorded malignancy, whereas in females, breast cancer is the most common type followed by oral cancer. Exposure to tobacco and other environmental carcinogens is high and infrastructure for analgesic care is limited and in most cases are not accessible.⁸

Smokeless tobacco is an important etiological factor in cancer of the mouth, lip, tongue and pharynx. The sub-continent has one of the highest rates of oral cancer in the world. 65% of all cancer in men and 33% of all cancers in women are tobacco related. Annual incidence of oral cancer is said to be 10 / 10000 of males.⁹

The prevalence in use of areca nut and its dependence is rapidly increasing in India in the form of pan masala especially by the youth.¹⁰ Most pan masala preparations in addition to areca nut also have tobacco, areca lime, catechu, tannin which are found to promote excessive and harmful use and lead to dependency.¹¹

All areca nut products, even those without tobacco are associated with oral submucous fibrosis (OSF). Both time period and daily frequency of areca nut use, increases the risk of oral cancer suggesting a dose response relationship.^{12,13} An increased risk for the development of oral malignancy (Squamous cell carcinoma and its precursors leukoplakia and submucous fibrosis has been reported in various studies of areca nut users only, with adding tobacco further increasing the risk.¹²

In a recent exercise, the International Agency for Research on cancer of the World Health Organization evaluated areca nut as a carcinogenic substance with the help of newer data.¹⁴

METHODOLOGY

It was a cross sectional study. An oral examination was carried out for recording oral submucous fibrosis. During the examination of oral cavity the participants of the study were asked about the habit of using tobacco and its related products and recorded on the examination form.

The study population comprised of 54 male school going children aged between 10-19 years studying in classes VI to X of a public school in the catchment area of Hamdard University Dental Hospital, Block-L North Nazimabad, Karachi.

All study subjects underwent an oral examination for oral sub mucous fibrosis, i.e. burning sensation of

mouth and tongue, irritation of mouth with chilies and spicy food, difficulty or inability in opening mouth, blanched or opaque appearance of mucosa, soft palate movement restriction and presence of palpable fibrous band. Palpable or strip fibrous bands on buccal mucosa, labial mucosa, fauces, soft palate, uvula, floor of the mouth and the tongue were regarded as OSF. The maximal mouth opening between upper and lower incisor edges of each study subject was measured and recorded with a scale covered with transparent, disposable plastic sheet.

The data were analyzed by SPSS (Statistical Package for Social Sciences version 12). Descriptive statistics such as frequency, percentage and mean values were used. The inferential statistics such as Chi-square test were applied.

RESULTS

Results of the study showed that 50% of the study subjects were using tobacco and its related products mentioned as code "1" as shown in fig 1 and amongst them 7.4% of Oral Submucous Fibrosis cases were identified and mentioned as code "8" as shown in fig 2.

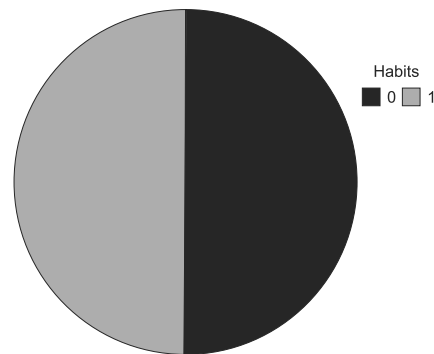


Fig 1: Habit of tobacco and its products usage

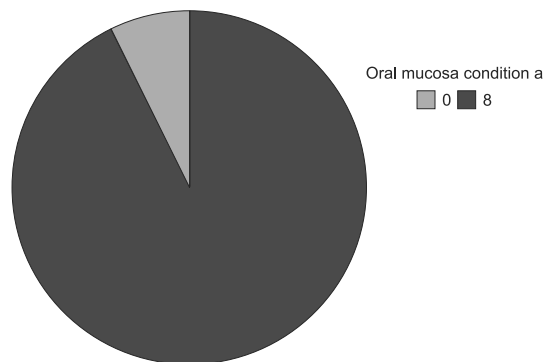


Fig 2: Case distribution of the patients

DISCUSSION

The prevalence of tobacco use and its associated products (50%) in the present study population was higher when compared to studies conducted in India by Saraswathi in 2006 (19.8%) and by Neufled and his co-workers (16.2%).^{15,16}

In Pakistan most of the studies were carried out to prove associations between smokeless tobacco and cancer of the oral cavity and pharynx.^{17,18}

The result of this study showed that 50% of the study subjects were using tobacco and its related products and amongst them 7.4% of Oral Submucous Fibrosis cases were identified as compared to 47% of the study subjects, who were life time users in a study conducted in Multan to find out an association between bladder carcinoma in women and use of smokeless tobacco.¹⁹

The data gathered from this community showed that there was an increase in the use of commercial forms of tobacco and its associated products among urban school going children areas of Karachi. Awareness regarding the ill health effects of tobacco use and its associated products was minimal. The study population is the most susceptible and vulnerable age for initiating tobacco use and its associated products, due to intense peer pressure that lead them to get involved in high risk behavior. Community-based surveys are essential in estimating the prevalence of a risk factor in population and in the identification of high risk sub-population.

It was surprising to observe that the school going children of Karachi were indulging in high-risk behavior (chewing paan, chaalia, gutka, supari, mainpuri, mawa, niswar, seesha, etc). More studies are needed in other urban parts of Karachi to corroborate the results from the present study. A study published in 1982 from a population in Karachi reported that 21% of the people used betel quid paan.²⁰ A recent study from Karachi slum areas (squatter areas), reported 40% prevalence of use of smokeless tobacco.²¹

Usage of tobacco and its associated products by the parents, teachers and friends produces harmful effects on young people. Various studies in Pakistan and in India have shown that the use of smokeless tobacco is inversely related with the level of education.^{21,22,23,24}

In a study, on oral submucous fibrosis among gutka chewers of (Patna) Bihar, India, the youngest patient

was 11 years of age whereas the oldest patient was 54 years.²⁵ In an another study, smokeless tobacco was more common among males because it is socially more acceptable for males than females.²⁶

A study from Delhi, reported the prevalence of areca nut use to be 11.74% amongst the high school students.²⁷ Zhonghua et al, findings of OSF cases amongst elementary and middle school students in China were 12% with prevalence of betel nut chewing involvement in 12.4% cases.²⁸ Similar results were obtained from a project in school children of Baba Island Karachi (74%), and in Asian immigrant school students aged between 11 and 15 years in the United Kingdom (77%).^{29,30}

In a study conducted in Mahmoodabad and Chanesar Goth, Karachi the frequency of Chaalia use was 94% and most of them were daily users and it was found that about 50% users started the habit with their families.^{29,30,31,32} Bringing areca nut products into the domain of tobacco products; steps are absolutely essential to decelerate the rapid evolving epidemic of oral submucous fibrosis and oral cancer among young individuals in the country.³³ Student population should be properly educated on this topic and health awareness should be included in the school curriculum.

CONCLUSION

Findings of the present study indicate that:

- a) Tobacco and its related products are one of the root causes of the precancerous lesions, particularly oral sub-mucous fibrosis that can finally lead to carcinoma of the oral cavity.
- b) The onset of the disease is early because of easy access to the above mentioned products at an early age.
- c) Lack of awareness amongst the population and youth in particular.
- d) Dental health education programme about the hazards of tobacco and its related products must be included in the school curriculum.

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