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Original Research Article

Prevalence of oral soft tissue lesions in alcohol and tobacco users in slums of Jammu city

Deepshikha Sumbria[1]*, Waqar Ul Hamid[2], Aamir Yousuf[3], Rauf Ahmad[2]

[1]Department of Health and Family Welfare, [2]Department of ENT HNS, GMC, SGR, Kashmir, India
[3]Department of ENT HNS, GMC, Anantnag, Kashmir, India

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***Correspondence:**
Dr. Deepshikha Sumbria,
E-mail: aqua10deepshikha@gmail.com

ABSTRACT

Background: There is a range of negative consequences on the oral mucosa caused by the tobacco and alcohol from inceptive light mucosal changes to a full-blown malignancy. The purpose of this study was to assess the risk of oral lesions resulting from the habits of addiction and prevalence of oral soft tissues changes with alcohol consumption, smoking, chewing and both type habits in individual residing in slums.
Methods: This cross-sectional study was carried out in the slums of Jammu city. A questionnaire was used to obtain the information on substance abuse habits followed by oral clinical examination in selected population of 1200 individuals >15 years of age. The data collected were statistically analysed using chi-square test.
Results: Of the 1200 study population, 816 were males and 384 were females and 72% were addicted to one or the other form of tobacco and alcohol. 32.6% showed oral mucosal changes, out of these, smoker's melanosis was found in 10.4%, leukoplakia in 9.1%, oral submucus fibrosis in 6.6%, oral lichen planus in 2.8%, chewer's mucosa in 2%, lichenoid oral lesion in 1.2%, erythroplakia in 0.5%.
Conclusions: The increased production and use of tobacco in India have led to increased prevalence of oral mucosal lesions. Community preventive and control programmes should be aimed at high risk individuals based on the epidemiological data gathered through such studies to reduce the burden of illness caused due to substance abuse.

Keywords: Slums, Substance abuse, Oral mucosal lesions

INTRODUCTION

Presence of the slum is a global phenomenon. Some social scientists believed that slum is the by-product of modern era. According to UN habitat, a slum is considered by lack of durable housing, insufficient living area and lack of access of clean water, inadequate sanitation and insecure tenure.[1]

Jammu city is one of the largest cities and winter capital of union territory of Jammu and Kashmir. It is also famously called as city of temples. According to census data 2011, the number of households in the slum of Jammu city is 17,986.[1]

India is the second largest producer and consumer of tobacco next to china.[2,3] More than one-third 34.6% of Indians use tobacco in one or other form. Amongst the tobacco users, 20.6% consumed only smokeless tobacco, 8.7% smoked only and 5.3% used both smoked as well as consumed smokeless tobacco.[4] In India, 4.5% of the population use alcohol regularly.[5]

There is a range of negative consequences on the oral mucosa caused by the tobacco from inceptive light

mucosal changes to a full-blown malignancy. These mucosal changes depend on the type of tobacco used whether it is smoking or smokeless form.[6] Alcohol use often coexist with tobacco consumption. Epidemiological studies associate alcohol with tobacco as a significant risk factor for oral precancer and cancer lesions.[7-9] One-third of the global burden of oral cancer is attributed to high prevalence of tobacco consumption within India.[10,11]

The purpose of this study was to assess the risk of oral lesions resulting from the habits of addiction and prevalence of oral soft tissues changes with alcohol consumption, smoking, chewing and both type habits in individual residing in slums.

METHODS

This cross-sectional study was carried out in the slums of Jammu city from January to December 2019. In this study we selected population >15 years of age, risk habit such as tobacco users (gutka, tobacco chewer and smokers), non-tobacco substance like betel nut, paan masala, alcohol, etc and both type habits (alcohol, smoking, tobacco users), duration in years that starts habits were recorded. Individuals not willing in our study, on antibiotics, steroids, non-steroidal anti-inflammatory medications and antifungal or medication inducing xerostomia for the past 6 months, immunocompromised subjects, local trauma or irritation, a systemic disease that causes oral lesions were excluded from the study. Informed consent was obtained from all the subjects included in the study. Permission from ethics committee was obtained for this study. WHO standardised questionnaire was used to obtain the information on substance abuse habits followed by oral clinical examination. The data collected were statistically analysed using chi-square test. Based on the baseline data on prevalence and incidence rates from various reference studies an absolute precision of 0.3% and a confidence interval of 90%, the sample size n=1195. Sample size was calculated using open epi (http://www.openepi.com/v37/samplesize/sspropor.htm).

RESULTS

Of the 1200 study population, 816 were males and 384 were females. 864 (72%) were addicted to one or the form in which 592 (68.5%) were males and 275 (31.5%) were females whereas 336 (28%) were without habits. The age of starting habit was divided into 4 age groups at 10 years intervals as shown in Table 1.

Table 1: Age of starting habit.

Age group (years)	N	%
15-24	555	64.2
25-34	262	30.3
35-44	34	4
>44	13	1.5

15-24 years old (n=555, 64.2%), 25-34 years old (n=262, 30.3%), 35-44 years old (n=34,4%) and >45 years old (n=13, 1.5%). Educational status of 864 people with history of substance abuse showed illiterate 816, middle school 42 followed by high school 6 as depicted in (Table 2).

Table 2: Educational status.

Educational status	Total	Substance abusers
Illiterate	966	816
Middle school	136	42
High school	98	6
high secondary	Nil	Nil
Graduate and PG	Nil	Nil

Table 3 shows occupational status, most of the people were labourer 505 followed by house wives 199, student 86, unemployed 41, businessman (shopkeeper) 21 and private services 12.

Table 3: Occupation.

Occupation	N
Labourer	505
House wives	199
Business (shopkeeper)	21
Student	86
Unemployed	41
Private services	12

In the present study, out of 864 subjects with habits, 32.6% showed oral mucosal changes, out of these, smoker's melanosis was found in 10.4%, leukoplakia in 9.1%, oral submucus fibrosis in 6.6%, oral lichen planus in 2.8%, chewer's mucosa in 2%, lichenoid oral lesion in 1.2%, erythroplakia in 0.5% as depicted in Table 4.

Table 4: Oral lesions.

Oral lesions	%
Smoker's melanosis	10.4
Leukoplakia	9.1
Oral submucus fibrosis	6.6
Oral lichen planus	2.8
Chewer's mucosa	2
Lichenoid oral lesion	1.2
Erythroplakia	0.5
Total	32.6

DISCUSSION

Of the 1200 people participated in study, 72% of the population is addicted to one or the other form. Out of which 68.5% were males and 31.5% were females which is in accordance with study done by Lodha.[12] Illiterate and middle school people were more tobacco users which is also a similar finding in study done by Lodha.[12] There

was a trend observed in the prevalence of oral mucosal lesions with age. 92% of the age group above 60 years had one or the other oral lesions. These results were in accordance to the results of Patil et al, who also reported that the most commonly affected age group was above 44 years.[13] An association is reported between aging and oral mucosal disorders.[13,14] There are number of causes leading to changes observed in the oral mucosa in the ageing due to infections, medications, metabolic changes, nutritional factors, prosthetic use, deleterious habits of tobacco or alcohol, and when the habit is present for longer the duration more the time for oral lesions to develop.[13]

There was a significant association observed between duration of tobacco use and the presence of oral lesions. The more the number of years of habit more the prevalence. 69.7% of subjects with more than 26 years of tobacco habit had oral lesions, whereas only 24.1% of the subjects with less than a year of habit had lesions. The long-term exposure of tobacco to the oral mucosa instigates various changes which could the rationale for developing oral lesions with longer duration of habits.[14]

In this study smoker's melanosis 10.4% was the most prevalent oral mucosal lesion in accordance with studies by Hedin et al and Saraswati et al.[15,16]

The overall prevalence of leukoplakia in the present study is 9.1% which is similar to the previous studies done by Bhowate et al that reported 11.5% prevalence of oral leukoplakia in rural population and in India.[17] Similarly, Campisi et al reported one of the highest 13.8% incidences of leukoplakia in men who drank alcohol and had the habit of smoking.[18] It was also seen that leukoplakia was more frequently observed in men with smoking and mixed habits than in females which further supports an association between smoking habits and leukoplakia as seen in many other studies.[18,19] The prevalence of oral submucus fibrosis in present study is 6.6% which was similar to the prevalence reported by Patil.[13]

The prevalence of oral lichen planus in the present study is 2.8% in subjects with habits and 0.8% among individuals with none of these habits, a finding which is similar to that in previous studies done by Saraswati et al and Chung et al.[16,20]

Chewer's mucosa was found in 2.0% of the subjects with the habits, a finding which is similar to 1.7% reported by Axel et al.[21] Among Malaysian and Thai dental patients and was predominantly noted in men with chewing habits in this study.

In the present study the lichenoid oral lesion was observed in 1.2% of subjects with the habit and the lesion was found mostly in gutka chewers and subjects who chewed betel quid with tobacco and were found at the site identified by the subjects as their primary site of quid placement. The prevalence of erythroplakia was 0.5% in the study population investigated which is similar to the 0.6% prevalence reported by Patil et al.[13] All the lesions were reported in men with the habits of smoking, chewing of betel quid with tobacco and mixed habits. Most affected site was buccal mucosal palate.

CONCLUSION

The result of the present study provides information on the prevalence of oral soft tissue lesions in slum areas of Jammu, Jammu and Kashmir, India. The increased production and use of tobacco in India have led to increased prevalence of oral mucosal lesions. Baseline data on the prevalence and incidence rates over the time are essential for planning preventive programmes. Community preventive and control programmes should be aimed at high risk individuals based on the epidemiological data gathered through such studies to reduce the burden of illness caused due to substance abuse.

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