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A Retrospective Analysis of the Prevalence of Distribution of Oral Mucosal Lesions (OMLs) among the People of Delhi NCR

SIMRAN KAUR¹, ASEEM SINGH², RAHUL SINGH³

INTRODUCTION: The presence of Oral Mucosal Lesions (OMLs) in one's oral mucosa can lead to unwanted consequences and mostly are due to tobacco use.

AIM: To document the prevalence of OMLs among patients of Delhi NCR and provide health education counselling to those under the grip of this evil practice.

MATERIAL AND METHODS: We retrospectively analyzed the data of a total of 402 subjects visiting various screening camps in Delhi NCR and recalled a total of 174 patients, out of which 161 reported back to us for further diagnosis and screening of OMLs. The examination of patients in the camp were an ADA type III examination. All patients we given a health education while tobacco users were also given a specialized one-on-one health education regarding the tobacco and its ill effects as well as techniques for cessation. A descriptive analysis of the sample was first performed using means (\pm standard deviation (SD)) for continuous variables and frequencies (proportions) for categorical variables. The chi-square test was used for statistical analysis and to find significant difference, if any.

RESULTS: Among the 402 subjects screened, the mean age was 33.24 ± 6.74 Years and most of the study population belonged to the age group of 25-60 Years [178(44.3%)]. 301(74.8%) of the study population were males. The main chief complaint was periodontal problem [187(46.5%)], while 15 patients (3.73%) came for regular check-up. The prevalence of leukoplakia was found to be 8.70% and OSMF was found to be 6.21%. A significant difference was seen among gingivitis with respect to age and gender ($p < .05$), leukoplakia and frictional keratosis was seen significant in relation to gender. In all significant cases, Males were more prone to get these OMLs as compared to females

CONCLUSION: It is advised that regular Oral Health Drives and counselling sessions be arranged for the people of Delhi NCR to reduce the burden of the OMLs.

KEYWORDS: Oral, Lesion, Mucosal, Leukoplakia

INTRODUCTION

A major challenge and a Public Health Burden across the globe, the ill-effect of tobacco consumption has been ever plaguing all societies across the globe. In India itself, it is estimated that approximately 275 million adults consume some form of tobacco products.¹ This huge number accounts for approximately one fifth of the world's total population and the alarming picture oral pre-cancerous lesions are being seen in the younger generation.^{2,3}

Researchers, from time and gain have been highlighting the fact that tobacco and alcohol consumption are evident risk factors for oral cancer and hence, there is a need to create awareness among these people.^{3,4} While people are aware of the medical effects of consuming such products, a person places little or no emphasis on his/her oral health due to variety of factors (financial constraint, lesser knowledge regarding oral health,

limited resources, etc.) and is at risk of developing various Oral Mucosal Lesions (OML).⁵

Various processed forms of tobacco are available commercially at a very low cost (especially smokeless tobacco) and this increases it reach especially among the younger generation. As per a report of the World Bank, nearly 82,000-99,000 children and adolescents across the globe begin smoking every day and this significantly increases the risk of the presence of OMLs among them.⁶ Among adults, the prevalence of tobacco users is reported as 28.6%.⁷

Since the use of tobacco in India is reaching pandemic levels, it is important that this vulnerable population be regularly screened for any potential OML and be educated regarding its ill effects. Therefore, this study aimed to document the prevalence of OMLs among



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patients of Delhi NCR and provide health education counselling to those under the grip of this evil practice.

MATERIALS AND METHOD

The study was performed by retrospectively analyzing a total of 402 oral examinations of patients visiting various dental screening and treatment camps in Delhi NCR.

After obtaining an informed consent from each participant, and explaining them the objectives of the study and the need to recall them for further examination in the dental clinic for suspected OMLs, a total of 174 patients were recalled for further examination from a total of 190 tobacco consumers. The patients were recalled phone (prior permission taken during consent) and a total of 161 patients reported to the study. Since the remaining 13 patients did not report on the day of appointment(s) (Maximum three appointments given), and in the absence of any confirmatory test, were excluded from the sample of patients with OMLs. Those OMLs not found in the study were excluded from the analysis. There were three examiners who conducted the clinical examinations and all three were duly calibrated prior to the study. All patients 402 patients screened were given health education regarding oral health tips while the 174 suspected OML cases were also provided specialized one-on-one health education regarding the tobacco and its ill effects as well as techniques for cessation.

The examination of patients in the camp were an ADA type III examination under natural/artificial light and the recalled 161 patients were further screened in under artificial lighting on a dental chair and with a mirror. During the clinical examination, the following elements were noted: features of the lesion, anatomical site, extension, etiological or related factors, dental status, trauma, use of prosthesis, and whether or not these were well adapted. Patients who did not provide consent were excluded from the study.

All the obtained data were analyzed statistically by using a Statistical Package for Social Sciences version 21 (SPSS Inc. Chicago, IL, USA).⁸

A descriptive analysis of the sample was first performed using means (\pm standard deviation (SD)) for continuous variables and frequencies (proportions) for categorical variables. Different intraoral and extraoral findings on clinical examination were reported. The chi-square test was used for statistical analysis and to find significant

difference, if any.

RESULTS

The characteristics of the patients is described in table 1. It was observed that of the total 402 subjects examined, the mean age was 33.24 ± 6.74 Years and most of the study population belonged to the age group of 25-60 Years [178(44.3%)]. Most of the people who got themselves examined were males [301(74.8%)]. Approximately half of the population [195(48.5%)] was self-employed. It was revealed that of the total population, 197(49.0%) people reported to be users of tobacco in any form. Most of the tobacco users [80(40.6%)] were found to be users of smokeless tobacco.

Characteristic	Frequency (%)
Age (Mean \pm SD)	33.24 \pm 6.74
<25 Years	155(38.5%)
25-60 Years	178(44.3%)
>60 Years	69(17.2%)
Total	402
Gender	
Male	301(74.8%)
Female	101(25.2%)
Occupation	
Student	129(32.1%)
Employed/Self Employed	195(48.5%)
Housewife/retired	78(19.4%)
Tobacco Users	197(49.0%)
Smokeless	80(40.6%)
Smoked	51(25.8%)
Both	66 (33.6%)

Table 1. Characteristics of the Study Population

Chief Complaint	Frequency (%)
Pain	113(28.1%)
Dental Hard Tissues	51 (45.1%)
Dental Soft Tissues	47 (39.6%)
Other Pain	15(13.3%)
Restorations	58(14.4%)
Required	52 (89.7%)
Faulty	6 (10.3%)
Prosthesis	29(7.3%)
Required	25 (86.2%)
Faulty	4 (13.8%)
Periodontitis	187(46.5%)
Checkup	15 (3.73%)

Table 2. Chief complaint(s) of the Study Population

Table 2 describes the chief complaint of the patients examined. Most of the patient's complained of periodontal problem [187(46.5%)], and 15 patients (3.73%) came for regular check-up. A total of 113 (28.1%) patients complained of pain, out of which, a majority [51 (45.1%)] was in the dental hard tissues.

The prevalence of OMLs and the statistical significance is seen in table 3. The maximum OML seen in the

population was gingivitis [46(28.57%)] while the prevalence of Leukoplakia was found to be 8.70% and OSMF was found to be 6.21%. A significant difference was seen among gingivitis with respect to age and gender ($p < .05$), leukoplakia and frictional keratosis was seen significant in relation to gender. In all significant cases, Males were more prone to get these OMLs as compared to females.

Type of lesion	Frequency (%)	P Value (Lesion * Gender)	P Value (Lesion * Age)
Coated tongue	08 (4.97%)	NS	NS
Leukoplakia	14(8.70%)	NS	0.002*
Gingivitis	46(28.57%)	.01*	0.03*
Linea Alba	15(9.32%)	NS	NS
Tabagic Keratosis	20(12.42%)	NS	NS
Tongue depapillation	06(3.73%)	NS	NS
Traumatic Fibroma	09(5.59%)	NS	NS
Fordyce granules	03(1.86%)	NS	NS
Oral Submucous Fibrosis	10(6.21%)	NS	NS
Frictional Keratosis	12(7.45%)	NS	0.012*
Angular Chelitis	5(3.11%)	NS	NS
Leukoderma	3(1.86%)	NS	NS
Ankyloglossia	7(4.35%)	NS	NS
Mucocele	03(1.86%)	NS	NS
Total	161	--	--

Table 3. Prevalence of OMLs in the Study Population

DISCUSSION

The present study, with the aim to document the prevalence of OMLs among patients of Delhi NCR and also provide a health education to the patients who were a part of the study. A total of 402 patients were screened and Oral Mucosal Lesions were found in 161 (40.05%) people. The results were in agreement with the prevalence rates of Kamble KA et al. (39.1%)⁹, Krishna Priya M et al. (42.4%)¹ and Mathew AL et al. (41.2%).¹⁰ The findings were lesser as compared to

Toum SEL et al. (61.8%)¹¹ and higher as compared to Bhatnagar et al. (16.8%).¹²

The prevalence of male(74.8%) patients in the present study was higher as compared to their female counterparts and the same was seen in the findings of Kamble AK et al. (70.8%)⁹ while on the contrary, Mobeeriek et al. reported 67% and 57.7% female in his conducted study.¹² This could be attributed to the fact

that females do not have much time for their dental check-ups as they are busy with their official duties and/or as a homemaker.

The results of the present study revealed that dental pain was seen among 28.1% of the population and this is in disagreement with the results of Kakoei et al., who reported a prevalence of 55.1% of toothache among their study subjects.¹³ The prevalence of periodontitis in the present study was 46.5% and is lower as compared to Sanjana MK et al. (83.2%)¹⁴ and Greene JC (97%)¹⁵, but in partial agreement to Anil S et al.¹⁶ Rao S et al., in a sharp contrast, only reported a prevalence of 6.83% of people among their study settings to be affected with periodontitis.¹⁷ This is mainly due to differences in culture and oral hygiene maintenance practices which is different in different geographic locations.

The prevalence of OSMF i.e 6.21% is in disagreement to Jha RN et al. (1%)¹⁷ and Mehta FS et al.¹⁸ and Pindborg JJ et al.¹⁹ (0.03% and 3.2%)¹⁹ while the prevalence of leukoplakia in the present study (8.70%) is similar to Krishna Priya M et al. (5.3%)¹ and Mehta FS et al. (2.9 and 5%).²⁰ With difference in geographic location, authors reports difference in prevalence of leukoplakia, which range from 0.59%(Saraswathi et al.)²¹ to 61.2% (Naveen-Kumar et al.)²² This can be attributed to a higher use of tobacco products in different geographic locations.

CONCLUSION

Based on the prevalence rates of the present study, we advise proper counselling sessions and need for targeted oral health drives with emphasis on tobacco cessation in the region of Delhi NCR to reduce the further incidence of such OMLs

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AUTHOR AFFILIATIONS:

1. MDS (Oral Medicine and Radiology), Consultant Dental Surgeon, Delhi NCR
2. BDS, Consultant Dental Practitioner, Faridabad
3. BDS, Consultant Dental Surgeon, Meerut

Corresponding Address:

Dr. Simran Kaur
401, Tower 10
Grand Forte Society
Sigma IV
Greater Noida
uppalsimran94[at]gmail[dot]com