

Original Research

Effect and assessment of oral mucosal lesion in tobacco patients in Lucknow population

¹Gaurav Singh, ²Sharad Singh, ³Abhigyan Kumar, ⁴Piyush Kumar Chaudhary

¹MDS (Oral and Maxillofacial Surgery), Fellowship in Head and Neck Onco Surgery, Associate Professor & Head, Department of Oro Maxillofacial Onco Surgery, Super Speciality Cancer Institute and Hospital, Lucknow, India;

²Associate Professor, Department of Radiation Oncology, Super Speciality Cancer Institute and Hospital, Lucknow, India;

³MDS (Oral and Maxillofacial Surgery), Assistant Professor, Department of Oral and Maxillofacial Surgery, Babu Banarasi Das College of Dental Sciences, Lucknow, India;

⁴MDS (Public Health Dentistry), Assistant Professor, Department of Public Health Dentistry, Babu Banarasi Das College of Dental Sciences, Lucknow, India

ABSTRACT:

Background and Aim: Tobacco has many negative health effects. The harmful effects of tobacco products are dose dependent, that they depend more on abuse than on simple use. The aim of this study is to assess the effect of tobacco habits on oral health of patients. The objectives is to relate the tobacco habits with oral mucosal lesions, diseases prevailing in the subject population. **Material and Method:** The proposed study was a cross-sectional hospital based study conducted to assess the various effects of different forms of tobacco on oral health. The study population had two groups. The first group comprised of people having the tobacco habits (either chewing or smoking) and the second group not consuming tobacco in any form. Total sample size was 650 out of which 600 patients were examined based on inclusion and exclusion. **Result:** The total prevalence rate of the oral mucosal lesions came out to be 21.16% with more lesions observed among the habituated subjects. The prevalence rate was 40% amongst the habituated subjects. Oral submucous fibrosis was found to be the most prevalent lesion with a prevalence rate of 10.83% and it was found in 28.94% of chewers. Whereas, among smoker's leukokeratosis nicotina palate was the most prevalent. **Conclusion:** Prevalence of oral mucosal lesions and other oral conditions prevalence and severity were much higher when compared with non-habituated subjects.

Key word: Tobacco Habits, Oral Health, Oral Cancer, Oral Mucosal Lesion

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Corresponding Author- Abhigyan Kumar, MDS (Oral and Maxillofacial Surgery), Assistant Professor, Department of Oral and Maxillofacial Surgery, Babu Banarasi Das College of Dental Sciences, Lucknow, India

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INTRODUCTION

An individual is judged as an individual by his culture, behaviour, character and habits. All these factors throw a positive or negative light on the personality of an individual. For maintaining a good health, an individual has to develop and implement good habits in day to day life. Harmful and bad habits do create physical and mental health problems depending on the frequency and longevity of the specific habits.¹ The concerned person also loses social acceptability. Good habits can contribute to establish healthy society. Whereas bad habits of a community may send a wrong message to a society.

One of the most harmful habits which is universal and specifically in India causing health problems is usage of tobacco in various forms.² Tobacco is derived from nicotiana plants belonging to potato family Nicotiana Rustica and Nicotiana Tobacum. Tobacco was first used by the people of the pre - Columbian Americas. Native Americans apparently cultivated the plant and smoked it in pipes for medicinal and ceremonial purposes. Tobacco was introduced into India by Portuguese traders in about 1600. It was first enjoyed in the capital city of Bijapur in the Adil Shahi kingdom in South India along the trading route of the Portuguese. Although initially tobacco was only

smoked, it was later chewed as well.³ Various groups ascribed special virtues to tobacco, and within a short period it took deep roots in the socio - cultural milieu of the country. In the course of time, diverse methods of smoking and chewing tobacco were devised. The various forms of tobacco devised were beedi, chillum, chutta, cigar, dhumti, hookah, hookli as smoke tobacco whereas, gutkha, khaini, snuff, mawa, mishri, paan, zarda and mainpuri as smokeless tobacco. Currently, 1.1 billion persons use tobacco in the world. Tobacco continues to be the second major cause of death in the world. Half of today's tobacco users will eventually be killed by tobacco and most of them will be in developing countries.⁴ Currently, 4.9 million people die every year globally from tobacco use, out of the number 1.1 million people die from South East Asian region. By 2030, if present smoking trends continue, this number will rise to 10 million deaths per year globally.⁵ According to the National Sample Survey Organisation report, overall in India in the population aged 10 years and above, 43% of rural males and 28% of urban males are regular tobacco users. Among females the prevalence in rural areas was 11% and in urban areas it was 5%. Uttar Pradesh, the largest state of India has alone many tobacco users. According; to National Sample Survey Organization, 2017-2018 there are 54.6% rural tobacco users among males and 38.5% urban males as tobacco users. Whereas, 14.7% females in the rural area and 10.0% females in the urban areas use tobacco.⁶ Lucknow, the capital city of Uttar Pradesh, commonly called as "City of Nawabs" has a population of 43,00,000 as per the Census Enumeration Data 2001.³ The literacy rate is 77.29% of Lucknow population.⁷ Keeping all the statistical data in mind, regarding the use of tobacco among Lucknow population and its severe ill effects; the present study was undertaken to evaluate "Tobacco habits and its effects on oral health on Lucknow population"

AIM & OBJECTIVES

The intended aim was to assess the effect of tobacco habits on oral health of patients attending the Outpatient Department. The objectives were to assess and compare the oral health of patients having tobacco habits with those not having the tobacco habits by examining both type of patient.

METHODOLOGY

The proposed study was a cross - sectional hospital based study conducted to assess the various effects of different forms of tobacco on oral health. The study population had two groups. The first group comprised of people having the tobacco habits (either chewing or smoking) and the second group not consuming tobacco in any form. Thus the size of sample comes out to be 650. Initially 650 OPD screened for the eligibility out of which 600 patients were screened for the study following strict inclusion and exclusion criteria. Inclusion Criteria 1.

Individuals aged 15 years and above, 2. The individuals should be having the habit for atleast 3 years in group 1, 3. Individuals of both genders not having the tobacco habit were examined in group 2. Exclusion Criteria, Individuals below 15 years. The informed consent from each individual was taken before examination and the signatures of each individual examined were undertaken in the survey form. The purpose of the study was to examine each participant on their arrival. They were informed that neither the personal interview nor the examination would cause them any harm or injury, but that they would receive direct benefit from the study. No one declined to take part in either the interview or examination portion of the study. Data collection comprised of two parts, recording personal details & habits and clinical assessment. Clinical examination: The clinical examination was done by using various indices for assessment of the oral health status of the patients. The indices used was Oral mucosal assessment. (Guide to epidemiology and diagnosis of oral mucosal disease and conditions, World Health Organization, 1980). The study was conducted for a period of nine months commencing from the month of June 2018 at the Outpatient. The data was collected on four days a week from morning 9:30 AM - 1.00 PM and 2.00 - 4.00 PM. Daily ten patients were examined with each examination lasting for 15 minutes, which was pre-decided during the training schedule of the examiner. A single examiner had conducted the study. The examiner was accompanied by a: The daily review of the survey forms were done each day for completeness and accuracy of the recordings by the examiner itself.

SURVEY PROCEDURE

Type of examination: According to the American Dental Association specifications the type of examination implied in this study was Type III examination using mouth mirror, explorer and adequate illumination. Kappa statistic was used to assess the intraexaminer reliability which was 0.84. Cronbach's alpha was applied for the reliability of the questionnaire, which was 0.82. SPSS 13 version was used. MS Excel was used for data entry and MS Word to generate table and graph. Statistical tests used were: Oral mucosal assessment: (Guide to epidemiology and diagnosis of oral diseases and conditions, World Health Organization, 1980). The oral mucosa and soft tissues in and around the mouth should be examined in every subject. The examination should be thorough and systematic, and performed in the following sequence: 1. Labial mucosa and labial sulci (upper and lower), 2. Labial part of the commissures and buccal mucosa (right and left), 3. Tongue (dorsal and ventral surfaces, margins), 4. Floor of the mouth Hard and soft palate, 5. Alveolar ridges/gingiva (upper and lower). Either two plane mouth mirrors or one mirror and the handle of the periodontal probe can be used to retract the tissues should be used to record

the absence, presence, or *suspected* presence of the conditions coded 0-9 (Table 1). Oral Mucosal Assessment (Guide to epidemiology and diagnosis of oral mucosal diseases and condition, World Health Organization, 2013).

Table 1: Code 0-9 with Reference

0	No Abnormal Condition
1	Malignant tumour (oral cancer)
2	Leukoplakia
3	Lichen planus
4	Ulceration (aphthous, herpetic, traumatic)
5	Acute necrotizing ulcerative gingivitis (ANUG)
6	Candidiasis
7	Abscess
8	Other condition (specify if possible)
9	Not recorded

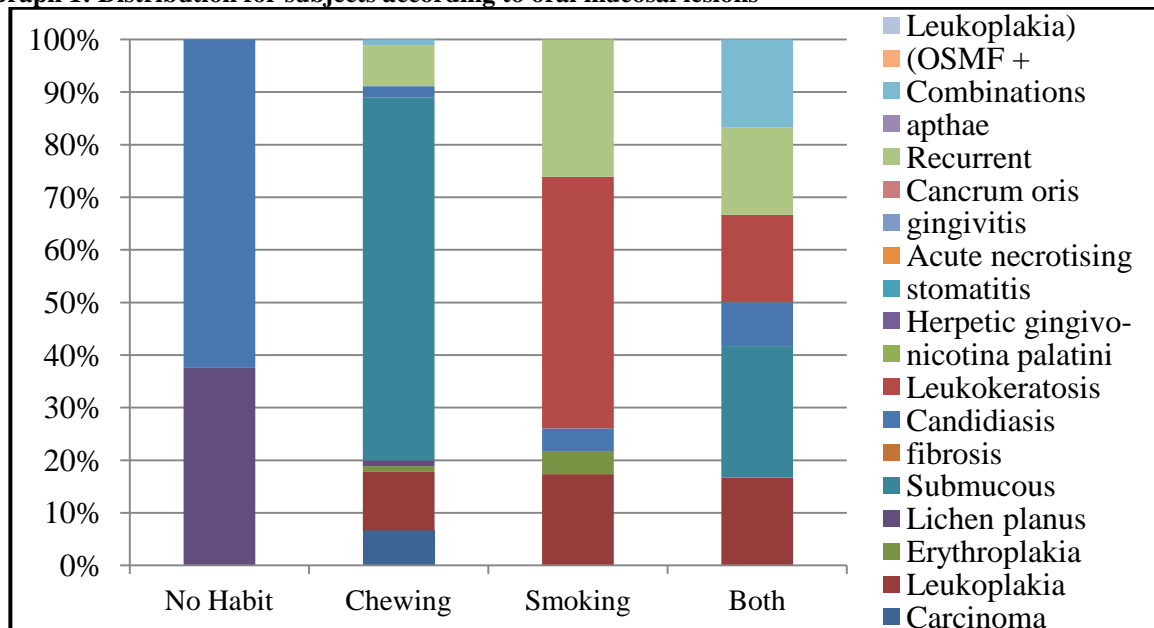
RESULT

Table 2 & Graph 1 show the distribution of subjects examined according to the prevalence of oral mucosal lesions present. The total prevalence rate of the oral mucosal lesions came out to be 21.16% with more lesions observed among the habituated subjects. The prevalence rate was 40% amongst the habituated subjects. Oral submucous fibrosis was found to be the most prevalent lesion with a prevalence rate of 10.83% and it was found in 28.94% of chewers. Whereas among smoker's leukokeratosis, nicotina palate was the most prevalent.

Table 2: Distribution for subjects according to oral mucosal lesions

Oral Mucosal Lesions	No Habit		Chewing Tobacco Only		Smoking Tobacco Only		Both Smoking & Chewing Tobacco		Total	
	n	% Out of 300	N	% Out of 213	n	% Out of 57	N	% Out of 30	n	% Out of 600
Carcinoma	0	0	6	2.81	0	0	0	0	6	1
Leukoplakia	0	0	10	4.69	4	7.01	2	6.6667	16	2.66
Erythroplakia	0	0	1	0.46	1	1.75	0	0	2	0.33
Lichen planus	3	1	1	0.46	0	0	0	0	4	0.67
Submucous fibrosis	0	0	62	29.10	0	0	3	10	65	10.83
Candidiasis	5	1.66	2	0.93	1	1.75	1	3.33	9	1.5
Leukokeratosis nicotina palatini	0	0	0	0	11	19.29	2	6.66	13	2.166
Herpetic gingivostomatitis	0	0	0	0	0	0	0	0	0	0
Acute necrotising gingivitis	0	0	0	0	0	0	0	0	0	0
Cancrum oris	0	0	0	0	0	0	0	0	0	0
Recurrent apthae	0	0	7	3.28	6	10.52	2	6.66	15	2.5
Combinations (OSMF + Leukoplakia)	0	0	1	0.46	0	0	2	6.66	3	0.5
Total	8	2.66	90	42.25	23	40.35	12	40	133	22.16
	0	0	6	2.81	0	0	0	0	6	1

Graph 1: Distribution for subjects according to oral mucosal lesions



DISCUSSION

According to World Health Organization, Oral health means being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) diseases, tooth decay and tooth loss and other diseases and disorders that affect the mouth and oral cavity. Prevalence of tobacco use has declined in some high - income countries but continues to increase in low - income and middle - income countries, especially among young people and women. Undoubtedly, the increasing number of smokers and smokeless tobacco users among young people in some parts of the world will considerably affect the general and oral health of future generations. The prevalence of tobacco use in most countries is highest amongst people of low educational background and among poor and marginalized people which was also noted in the present study.⁸ Tobacco use and its association with oral diseases is a major contributor to the global oral disease burden, responsible for upto half of all periodontitis cases among adults. Some of the most common diseases and problems are oral cancer, leukoplakia, erythroplakia, oral mucosal conditions like smoker’s palate, smoker’s melanosis, tobacco associated effects on the teeth and supporting tissues like periodontal diseases, premature tooth loss, acute necrotizing ulcerative gingivitis, staining, halitosis etc. Chewing tobacco and snuff contain 28 potential carcinogens. The most harmful carcinogens in smokeless tobacco are the tobacco specific nitrosamines (TSNAs). They are formed during the growing, curing, fermenting and aging of tobacco. Tobacco specific nitrosamines have been detected in some smokeless tobacco products at levels many times higher than levels of other types of nitrosamines that are allowed in foods. Other cancer causing substances in smokeless tobacco include N-

nitrosamino acids, volatile N-nitrosamines, benzo a pyrene, volatile aldehydes, formaldehyde, acetaldehyde, crotonaldehyde, hydrazine, arsenic, nickel, cadmium, benzopyrene and polonium - 210.⁹ 43 carcinogenic agents are found in tobacco smoke. Some of the deadly carcinogenic chemicals found in tobacco smoke are N-Nitrosanomicotine (NNN), 4-Methylnitrosamino-1-3-pyridyl-1-butanone (NNK), N-Nitrosoanatabine (NAT) and N-Nitrosoanabine (NAB), all are formed from natural components of tobacco plant. Oral mucosal lesions prevalence rate in this study is 40%. This higher prevalence rate is contrary to many studies done by Taiyeb Ali T.B *et al.*¹⁰, Zain Rosnah Binti *et al.*¹¹. This higher prevalence rate of oral mucosal lesions could be due to an increased incidence of chewing habits in this part of the country and also as it was a hospital based study only patients prevailing with the oral mucosal lesions came to the hospital. The immediate benefits of tobacco control can be seen in those who quit tobacco. Tobacco Cessation is a relatively new area in tobacco control in India. World Health Organization in collaboration with the Government identified 13 Tobacco cessation centers in 2002 in diverse settings (cancer treatment centres, psychiatric centres, medical colleges and NGOs) to help people to stop tobacco use. Most of these clinics were operationalized on the 31st of May, 2002 on the occasion of World No Tobacco Day. The World Health Organisation Oral Health Programme aims to control tobacco - related oral diseases and adverse conditions through several strategies. Within World Health Organisation, the Programme forms part of the World Health Organisation tobacco - free initiatives, with fully integrated oral health - related programmes. Externally, the Programme encourages the adoption and use of WHO tobacco - cessation and control policies by international and national oral health

organizations. Primary partners are WHO Collaborating Centres in Oral Health and NGOs that are in official relations with WHO i.e. the International Association for Dental Research (IADR) and the FDI World Dental Federation. A number of projects have been initiated in Canada, European Union countries, Japan, New Zealand and the USA and more programmes are being considered in China and India. The aim of cancer control is a reduction in both the incidence of the disease and is associated morbidity and mortality. This requires not only knowledge of the natural history of the disease but also an understanding of the underpinning social, economic and cultural factors. Screening and early detection can save lives. Several developed and developing countries are in the process of implementing cancer prevention programmes, including oral cancer prevention. It is essential to educate people to recognize the early signs and symptoms of oral cancer prevention. It is essential to educate people to recognize the early signs and symptoms of oral cancer. Particularly in developing countries, primary health care workers trained in the detection of oral cancer will become a considerable force for prevention through early detection and health promotion to raise awareness in the community.

CONCLUSION

The result of the present study provides some information in tobacco habits and prevalence of dental disease in Lucknow population. The tobacco habits were found more in older age group. As age increased, the prevalence of tobacco usage increased. 44.16% of the subjects without habit had a fair oral hygiene status as compared with 48.33% of their counterparts having habits who had poor oral hygiene status. Tobacco related habits are quite common in Uttar Pradesh in both younger and old age groups especially in males. Special educational and motivational programmes should be conducted to bring awareness of its ill effects along with conduction of screening programmes regularly.

FUNDING

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STATEMENT OF CONFLICT OF INTEREST

In the opinion of the author, there was no conflict of interests.

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