Prevalence of oral mucosal lesions/conditions in 35-44 years age group of adults of Patna city, Bihar, India

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Abstract
Background: To study the prevalence of oral mucosal lesions/conditions in the 35-44 age group of adults of Patnacity, Bihar, India.
Aims and Objectives: This study aims to assess the prevalence and describe the epidemiology.
Materials and Methods: A Hospital based survey was carried out among patients attending the outpatient Department of Oral Medicine & Radiology in Buddha Institute of Dental Sciences & Hospital, patients aged 35-44 year age group as per the index age group as per the World Health Organization's Basic Oral Health Survey's Criteria.
Result: The present study was designed on 1200 subjects to assess the prevalence of oral mucosal lesion who visited our department seeking dental treatment. The result showed that leukoplakia was the most prevalent in our population. More subjects with leukoplakia of 40-44 years in our population were males. Lesion was more prevalent in buccal mucosa and lichen planus had female predeliction in the age group of 35-40 years of age. The lesion was more prevalent in buccal mucosa.

Keyword: Leukoplakia, Lichen planus, ANUG, OSMF.

Introduction
The oral mucosa serves as a protective barrier against trauma, pathogens and carcinogenic agents. It can be affected by a wide variety of lesions and conditions, some of which are harmless while others may have serious complications. Identification and treatment of these pathologies are an important part of total oral health care.[1]

Although the terms dental health and oral health are used almost synonymously when stating the goals for oral health, such statements are usually valid only for dental health. This may lead to severe underestimation of the need for total health care. When planning measures for improving oral health, the lack of data may lead to a risk of overlooking diseases of the soft tissues in, and adjacent to, the oral cavity. Prevalence data of oral mucosal lesions are available from many countries, but the information is usually restricted to very few lesions in each survey.[2] Epidemiological studies can provide an important vision for understanding the prevalence, extent and severity of oral disease in population. There are relatively few systematic studies of the prevalence of such lesions in children and youth.[3]

Nowadays the importance of oral health to life quality is not in our world. Oral lesions can interfere with daily social activities in involved patient through impacts on mastication, swallowing and speech and symptoms like xerostomia, halitosis or dysesthesia. Epidemiological assays declare a wide variety in the prevalence and most common types of oral lesions in various regions of the world.[4]

It is important to know the prevalence of oral mucosal lesions/conditions in the general population as it has a significant negative effect on the oral health, irrespective of the etiology, which will effect the quality of life.[5] Proper management of a patient with an oral lesion starts with an accurate diagnosis. There are lesions whose diagnosis can be made based on data gathered during the history.[6]

Oral diseases are major public health problem. Among them oral cancer is at the top of the list. Oral Cancer is the 6th most common cancer in the world which accounts for 350,000 new cases and 128,000 death annually. The most common oral precancerous lesions are oral leukoplakia, erythroplakia, nicotinapalati and oral sub mucous fibrosis. Other include candidiasis, recurrent herpes labialis, hairy tongue, lichen planus etc. The overall prevalence of pre cancerous lesion among patients attending hospital in certain places of India range between 2.5% to 8.4%. Screening of apparently healthy individuals discloses cancer in early and precancerous stage and treatment will be most effective. Precancerous lesions and conditions are seen in healthy individual and hence can be identified by screening. Hence the present study is proposed to screen the oral cavity to identify the precancerous lesions/conditions.[7]

Aims and Objectives
This study aims to establish the prevalence and describe the epidemiology. To assess the prevalence of oral mucosal lesions/conditions in the 35-44 age group of adults of Patna, Bihar, India.

Materials and Methods
A Hospital based survey was carried out among patient attending the outpatient Department of Oral Medicine & Radiology in Buddha Institute of Dental Sciences & Hospital, patients aged 35-44 year age group as per the index age group as per the World Health Organization's Basic Oral Health Survey's Criteria.
Sample Size: 1200 outpatients

Method and Collection of Data: Outpatients from Department of Oral Medicine & Radiology in Buddha Institute of Dental Sciences & Hospital**,** were screened and patient with the following criteria were excluded from the study

1. Patients with any systemic disease.
2. Patients having any malignant oral lesions.
3. Patient in whom an intra oral examination is not possible due to inadequate mouth opening.

After ethical committee review oral examination was done by type III mouth mirror and adequate illumination. The oral clinical examination was carried out by single examiner. The data was recorded by an assistant who accompanied the examiner. The collection data was tabulated and sent for statistical analysis.

Result

The data obtained from the study was compiled, tabulated and subjected to statistical analysis. A total of 1200 patient were evaluated. These 1200 subjects were divided into 2 age groups, 35-40 years and 40-44 years. The prevalence of oral mucosal lesion in our study was based on WHO oral health survey criteria. The gender wise distribution and location of the mucosal lesion in the study specimen was observed. Table 1, shows the prevalence of oral mucosal lesions/ conditions in 35-44 years of age group of subjects. Prevalence of oral mucosal lesions / conditions was classified according to age & gender. No abnormal condition was detected in 866(72.16%) of the subjects. The most prevalent variant was leukoplakia which was 74(6.1%). The second most prevalent was lichen planus was 53(4.42%). Aphthous ulcer was reported in 69(5.75%) subjects, herpetic ulcer 39(3.25%), traumatic ulcers 22(1.83%) of subjects. Table 2 shows gender wise distribution of Oral Mucosal Lesion /Condition in 35-44 years age group of subjects. Out of 1200 patients 600 were males & 600 were females in the range of 35-44 years of age group. In the present study out of 74(6.1%) leukoplakia was more prevalent in males 67(5.58%) than females 7(0.58%). In the study group the prevalence of Lichen Planus in which out of 53(4.42%) subjects, males were 21(1.75%) & females were 32(2.67%). In the present group of subjects the prevalence of variants of ulceration was detected, aphthous ulcer out of 69(5.75%), males were 25(2.08%), females were 44(3.7%), herpetic ulcer out of 39(3.25%), males were 10(0.83%), females were 29(2.42%), traumatic ulceration out of 22(1.83%), males were 13(1.08%), females were 9(0.75%). ANUG was observed in male 1(0.08%) and female 1(0.08%) out of 2(0.17%). In our population Candidiasis was observed in 35(2.92%) males. In our study other conditions (OSMF) were more prevalent in females 24(2.0%) than males 16(1.33%) out of 40(3.33%). Table 3 shows age group of study specimen: a total of 1200 subjects in the age range of 35-44 years were included. Since the minimum age of individuals in the study group was 35 years & the maximum aged individual was 44 years, the study age group was divided in two groups as Group A age range from 35-40 & Group B more than 40. The different age group & number of subjects in each group were as follows, Malignant tumour had 0(0%), subjects in both the groups, leukoplakia had 22(1.83%) subjects in the age range group of 35-40 were 52(4.33%) in the age group of> 40 years. Lichen Planus 31(2.58%) was in the age between 35-40 & 22(1.83%) was above the age range of 40-44 of age. In our study presence of aphthous ulceration was detected in 41(3.42%) in the age range of 35-40 & 28(2.33%) in the age range of 40-44, herpetic ulceration 25(2.08%) in the age range of 35-40 & 14(1.17%) in the age range of 40-44, traumatic ulceration 15(1.25%) & 7(0.58%) in the age range of 35-40 & more 40-44 simultaneously. 1(0.8%), 1(0.08%) were in the age group of 35 to 40 & > 40 in ANUG. Candidiasis had 19(1.53%) in the age range between 35-40 & 16(1.33%) in the age of 40-44. Other conditions (OSMF) were prevalent 28(2.33%) in the age range of 35-40 & 12(1.00%) in the age range of 40-44. (Table 3). Location of oral mucosa lesion of study specimen in the present study the prevalence of oral mucosal lesion & conditions were distributed according to location of the lesion. The prevalence of oral mucosal lesion was 93(27.84%) in the buccalmucosa, gingiva 56(16.77%), tongue 72(21.56%), junction of the hard &soft palate 19(5.69%), labial vestibule 37(11.08%), buccal vestibule, palate, lip had a similar prevalence of 19(5.69%).

Table 1: Prevalence of oral mucosal lesion/ condition in 35-44 years age group of subjects

Oral Mucosal Lesion	Total
No abnormal condition	866 (72.16%)
Leukoplakia	74 (6.1%)
Lichen Planus	53 (4.42%)
Ulceration- aphthous	69 (5.75%)
Ulceration- herpetic	39 (3.25%)
Ulceration- traumatic	22 (1.83%)
Acute necrotizing ulcerative gingivitis (ANUG)	2 (0.17%)
Candidiasis	35 (2.92%)
Other condition (OSMF)	40 (3.33%)
Total	1200 (100%)

Table 2: Gender wise distribution of Oral Mucosal Lesion/ Condition in 35-44 years age group of subjects

Oral Mucosal Lesion	Male (N=600)	Female (N=600)	Total
No abnormal condition	412(34.33%)	454(37.83%)	866(72.16%)
Leukoplakia	67 (5.58%)	7 (0.58%)	74 (6.1%)
Lichen Planus	21 (1.75%)	32 (2.67%)	53 (4.42%)
Ulceration- aphthous	25 (2.08%)	44 (3.7%)	69 (5.75%)
Ulceration- herpetic	10 (0.83%)	29 (2.42%)	39 (3.25%)
Ulceration- traumatic	13 (1.08%)	9 (0.75)	22 (1.83%)
Acute necrotizing ulcerative gingivitis (ANUG)	1 (0.08%)	1 (0.08%)	2 (0.17%)
Candidiasis	35 (2.92%)	0 (0%)	35 (2.92%)
Other condition (OSMF)	16 (1.33%)	24 (2.0%)	40 (3.33%)
Total	600 (50%)	600 (50%)	1200 (100%)

Chi-square, df = 104.8, 7, P value = 0.0001 (Significant, $p<0.05$)

Table 3: Age group of study specimen

Oral Mucosal Lesion	Age (Years)		Total
	35-40	>40	
No abnormal condition	418 (34.83%)	448 (37.33%)	866 (72.16%)
Leukoplakia	22 (1.83%)	52 (4.33%)	74 (6.1%)
Lichen Planus	31 (2.58%)	22 (1.83%)	53 (4.42%)
Ulceration- aphthous	41 (3.42%)	28 (2.33%)	69 (5.75%)
Ulceration- herpetic	25 (2.08%)	14 (1.17%)	39 (3.25%)
Ulceration- traumatic	15 (1.25%)	7 (0.58%)	22 (1.83%)
Acute necrotizing ulcerative gingivitis (ANUG)	1 (0.8%)	1 (0.08%)	2 (0.17%)
Candidiasis	19 (1.53%)	16 (1.33%)	35 (2.92%)
Other condition (OSMF)	28 (2.33%)	12 (1.00%)	40(3.33%)
Total	600 (50%)	600 (50%)	1200(100%)

Chi-square, df = 104.8, 7, P value = 0.0001 (Significant, $p<0.05$)

Discussion

Our study was conducted to estimate the prevalence of disease in our population at Patna in Bihar and identifying the mucosal lesion. In the present study total of 1200 subjects were included from the Outpatient of department of Oral Medicine & Radiology. This study was consistent with the findings of Kovac et al who conducted the study on total of 1190 subjects.[8]

In our study no abnormal conditions were seen in 866 (72.16%) subjects. Our study was similar to Cebeci et al[9] who concluded that no mucosal lesion was detected in 84.5% of population. The prevalence of leukoplakia in our population was 74(6.1%), which is consistent with the finding of Axell T[10] who reported prevalence of 4.76%. Lichen Planus was found in 53(4.42%) in our population which is comparable with the Hegde M N.[11]

In present study aphthous ulceration was 69(5.75%), herpetic ulceration 39(3.25%), traumatic ulceration 22(1.83%) of the total subjects. This study was similar to Muhaidat ZH[4] who stated the prevalence of oral ulceration in 55.78% of subjects**.** In our study ANUG was reported in 2(0.17%) subjects which was similar to Al –Attas SA[12] that is 0.2%. Candidiasis was reported in our population 35(2.92%); this finding was consistent with Dundar N[13] Similar study was conducted by Mathew A L in 2008,[1] Ikeda B[14] who reported the prevalence of oral candidiasis in there population was 3.07%.

In our study the prevalence of OSMF was 40(3.33%) which was comparable with studies done by Rajendran R[5] (2.73%) and, Patwardhan N[6] (2.5%).

In our study the most prevalent oral mucosal lesion was Leukoplakia 74(6.1%), Lichen Planus 53(4.42%), followed by aphthous ulceration 69(5.75%), herpetic ulceration 39(3.25%), traumatic ulceration 22(1.83%), ANUG 2(0.17%), candidiasis 35(2.92%) & other condition (OSMF) 40(3.33%) were reported. This study is similar to Dagli R J.[14] In our study gender wise distribution of oral mucosal lesion/condition in 35-44 years age group of subjects were done. Out of 1200 study group 600 were males & 600 were females. Leukoplakia was more prevalent in male 67(5.58%) than females 7(0.58%) in the total of 74(6.1%). Similar study was also conducted by Kovac–Kovacic M[8] who stated that leukoplakia was more prevalent in men than in women 4.6% & 1.7% respectively, 2.7% & 1% for men & women respectively by N Ikedia in 1991.[15]

In our study out of 53(4.42%), lichen planus observed in male was 21(1.75%) & female 32(4.26%) which is consistent with Kovac –Kovacic M (women (3.0%) & men (1.5%) and N Ikedia in 1991.[8,15]

In the present study aphthous ulceration 69(5.75%) out of which 25(2.08%) male & 44(3.7%) female, herpetic ulceration 39(3.25%) in which male 10(0.83%) & female 29(2.42%), traumatic ulceration total of 22(1.83%) 13(1.08%) were male & 9(0.75%) female the study was similar to Chattopadhyay Ain 2007. In the present study ANUG was 1(0.08%) in male & 1(0.08%) in female of

2(0.17%). This result is also consistent with the study of Al –Attas S Ain 2014.[12]

In the present study candidiasis was 35(2.92%) in male, 0(0%) in female out of 35(2.92%), these results are similar to Hegde et al[11] (male 1.3%, female 0.56%).

In our study OSMF was 16(1.33%) in male, 24(2.0%) in female out of 40(3.33%) this study is consistent with Saraswathi TR.[16]

In the present study 1200 subjects enrolled, site distribution was done on the basis of location of oral mucosal lesion of study specimen.

The buccal mucosa was found to be most frequently involved site 93(27.84%) followed by gingiva 56(16.77%) & tongue 72(21.56%). The involvement of the lesion at the junction of hard and soft palate was 19(5.69%), labial vestibule 37(11.08%), site distribution of buccal vestibule, palate, lip were more equal 19(5.69%) each.

The most common site of involvement of oral mucosal lesion was buccal mucosa, followed by tongue and gingiva. This was compared by similar study done by Gaphor S M[17] who reported that buccal mucosa was found to be most frequently involved site 41.1% and tongue 23.5% and gingiva 12.5% this study was also similar to Bratic Marija B.[19] who reported that buccal mucosa was involved in 82% and tongue 25.6% of cases respectively. Mathew AL[1] reported that the main site of involvement was buccal mucosa and tongue and Gambhir R S[2] reported 17 cases (16.8%) involving buccal mucosa.

In the present study with the sample size of 1200 subjects, the results clearly indicate that in our population prevalence of oral mucosal lesion, leukoplakia is the most prevalent. Male are commonly affected at the age group of 40-44 and buccal mucosa is the most common site observed.

Conclusion

The present study was designed on 1200 subjects to assess the prevalence of oral mucosal lesion who visited our department seeking dental treatment.

Results showed that leukoplakia was the most prevalent in our population. More subjects with leukoplakia of 40-44 years in our population were males and the lesion was more prevalent in buccal mucosa. The results in our study suggested that lichen planus had female predeliction in the age group of 35-40 years of age. The lesion was more prevalent in buccal mucosa. It was observed that among ulceration, apthous ulceration was more prevalent. The lesion showed female > male. ANUG had equal predilection of male and female. It was observed that the prevalence of oral candidiasis in our population was more in 35-40 years of age group. Males were predominantly affected more than females. The result of our study showed prevalence of other condition (OSMF) was higher in female than male in the age group of 35-40 years of age.

In conclusion, the result of present study provides information on the prevalence of oral mucosal lesion in our population and the result of this study showed that the prevalent oral mucosal lesion is leukoplakia. It is observed that males of higher age are affected more than female. Buccal mucosa is the most common location of the oral mucosal lesion. Hence it is important that preventive effort be carried out by the concerned dental professional in establishing tobacco cessation education in masses. Therefore the findings of this study possibly provide important information about the types and prevalence of oral mucosal lesions among our population and this can served as base line data for future studies on the prevalence of different oral lesions in the general population.

Conflict of Interest: None.

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