

**ORIGINAL RESEARCH**

# Prevalence And Distribution Of Oral Mucosal Lesions Among Dental Patients In Patna, Bihar - A Hospital Based Retrospective Study

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**ABSTRACT**

**Introduction-** The oral mucosa is subject to numerous lesions and variants. Understanding the incidence of oral mucosal lesions in a certain region facilitates improved evaluation, diagnosis, and management of these lesions. Hence the present study was done to assess the prevalence and distribution of oral mucosal lesions among dental patients in Patna, Bihar. **Material and methods-** The present retrospective hospital based study was conducted among 450 OPD record files of patients attending the Department of Dentistry, Patna Medical College & Hospital, Patna, Bihar during the period of 02 years. Clinical and demographic data of patients was noted. All collected data was statistically evaluated using the Statistical Package for Social Sciences version 25.0. **Results-** Maximum patients were in the age group of 41-50 years (24.8%) followed by 51 -60 years (20%), 31-40 years (18%). Most of the subject were male 293 (65.1%) and 157 (34.9%) were females. 86% (387) patients had oral mucosal lesion and 14% (63) had normal variant of oral mucosal lesion. Most of the oral mucosal lesions were in the age group of 41-50 years and among males but there was no significant association found between them. **Conclusion-** The high prevalence of oral mucosal lesions requires sufficient awareness and care of these conditions within the general population. Dental practitioners must possess expertise in the etiopathogenesis, clinical manifestation, diagnosis, and treatment of these lesions.

**Keywords-** epidemiology, dental, oral mucosal lesion, prevalence, tobacco, treatment

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**INTRODUCTION**

An oral mucosal lesion (OML) refers to any atypical change in color, surface texture, swelling, or disruption of the integrity of the oral mucosal surface.[1] The prevalence of oral mucosal alterations varies from 10.8% to 61.6% across different groups [2-6]. India has one of the highest rates of oral cancer varying from over 20 per 100,000 people as compared with 10 per 100,000 in USA and less than 2 per 100,000 in the Middle East. Oral cancer accounts for almost 30% of all cancers in India. Variations in the stated prevalence can be attributed to study protocols, individual participant selection, genetics, age, sex, and both local and global risk factors within the studied community. [2,3]

In recent years, the public and health professionals have increased their awareness of the significance of oral mucosal lesions (OML). In addition to assessing

oral health for dental caries and periodontal disorders, there is an increasing emphasis on the necessity for epidemiological studies of oral cancer and other oral mucosal problems, particularly those associated with human immunodeficiency virus (HIV) or hepatitis B virus (HBV) infections. [7]

The oral mucosa is specifically impacted by seven potentially malignant illnesses.[8] Other oral mucosal lesions (OMLs) encompass various cysts, both benign and malignant tumors, inflammatory lesions, and those linked to tobacco, areca nut, and betel nut consumption. Additionally, immune-mediated conditions such as recurrent aphthous stomatitis (RAS) and oral pemphigus present management challenges and may become life-threatening if not diagnosed promptly.[9,10] These lesions disrupt daily activities by hindering food consumption, resulting in pain, burning sensations, facial asymmetry, and other

symptoms. Conversely, other benign varieties of oral mucosa are harmless yet may be erroneously classified as a potentially life-threatening illness.[11] The examination of OML prevalence in particular regions is essential for comprehending its scope and attributes, and it is also crucial for enhancing oral health promotion and prevention initiatives tailored to specific age cohorts, as advised by the World Health Organization (WHO) [12,13].

Epidemiologic studies yield critical data regarding the prevalence, incidence, and severity of oral diseases within certain populations; nevertheless, the dissemination of such findings globally has been infrequent, resulting in significant variability in the outcomes.[14] Hence the present study was done to assess the prevalence and distribution of oral mucosal lesions among dental patients in Patna, Bihar.

### MATERIAL AND METHODS

The present retrospective hospital based study was conducted among OPD record files of patients attending the Department of Dentistry, Patna Medical College & Hospital, Patna, Bihar during the period of 02 years from February 2022 to February 2024. Ethical clearance was taken from the institution.

Through consecutive sampling a total of 450 patients who had visited to OPD were selected on the basis of inclusion and exclusion criteria.

**Inclusion criteria-** Patients having clinically or histologically diagnosed as any of the oral mucosal lesions, along with data of the location/site of the lesion.

**Exclusion criteria-** Patients record with incomplete demographic or clinical data.

Each clinical examination record file documents the patient's civil status, primary complaint, both extraoral and intraoral clinical examinations.

Civil status encompasses age, gender, current and prior occupation, and address. The chief issue and its anamnesis prompted the individual to consult the dental out-patient department. An extraoral assessment of facial disharmony, skin condition, temporomandibular joint, and lymph node palpation was conducted. Furthermore, the intraoral examination revealed the existence of lesions or anatomical variations in the oral mucosa. Clinical examinations were conducted in accordance with the WHO guidelines [8].

The factors to assess in the questionnaire were overall condition, age, gender, systemic illnesses, medications utilized, and prosthetic or other devices employed. During the clinical examination, the following aspects were observed: characteristics of the lesion, anatomical location, extent, etiological or associated variables, dental condition, history of trauma, usage of prosthetics, and their degree of adaptation.

All collected data were statistically evaluated using the Statistical Package for Social Sciences version 25.0 (SPSS Inc., Chicago, IL, USA). A descriptive analysis of the sample was initially conducted utilizing means ( $\pm$ standard deviation (SD)) for continuous variables and frequencies (proportions) for categorical variables. The chi-square test and Fisher's exact test were employed to examine the proportions of OMLs between genders and age groups. A p-value below 0.05 was considered statistically significant.

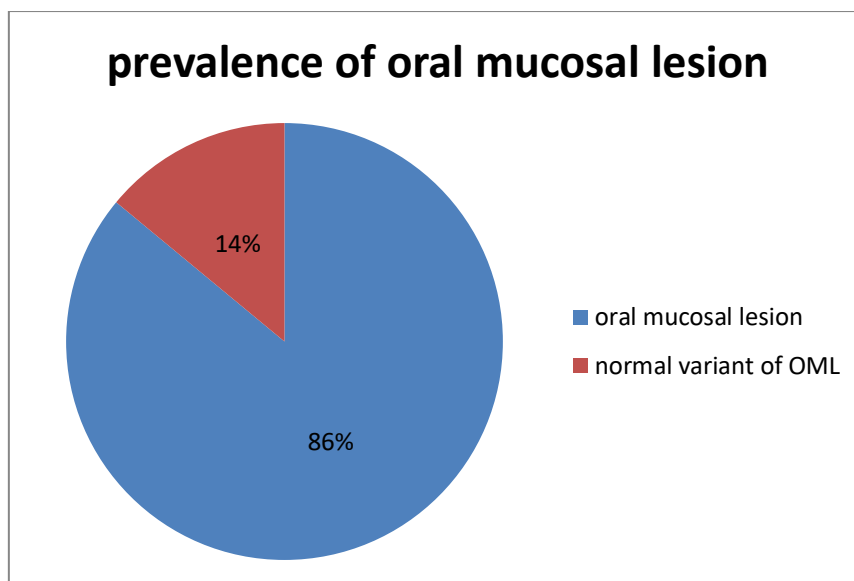
### RESULTS

Maximum patients were in the age group of 41-50 years (24.8%) followed by 51 -60 years (20%), 31-40 years (18%), 21-30 years (15.1%), 11-20 years (12%), 61 and above (7.8%) and 0-10 years (2.3%). Most of the subject were male 293 (65.1%) and 157 (34.9%) were females as shown in table 1.

**Table 1 Demographic data of patients**

Demographic data		Frequency (%)
Age (in years)	0-10	10 (2.3)
	11-20	54 (12)
	21-30	68 (15.1)
	31-40	81 (18)
	41-50	112 (24.8)
	51-60	90 (20)
	61 above	35 (7.8)
Gender	Male	293 (65.1)
	Female	157 (34.9)

Out of 450 patients 86% (387) patients had oral mucosal lesion and 14% (63) had normal variant of oral mucosal lesion (figure 1).



**Figure 1 Prevalence of oral mucosal lesion**

The most common oral mucosal lesion was tobacco associated (35.6%) followed by tongue lesions (23.3%), oral potentially malignant lesions (10%), ulcers (8.9%), infectious (7.7%), soft tissue lesions (5.6%) gingival lesions (2.3%), bony lesions (1.1%), salivary gland lesions (1.1%), mucocutaneous lesions (1.1%) and malignancy (1.1%) as shown in table 2.

**Table 2 Type and prevalence of oral mucosal lesions**

Type of oral mucosal lesion	Frequency (%)
Tongue lesions	91 (23.3)
Oral potentially malignant lesion	39 (10)
Ulcers	34 (8.9)
Infectious	30 (7.7)
Soft tissue lesions	22 (5.6)
Tobacco associated lesions	138 (35.6)
Gingival lesions	9 (2.3)
Bony lesions	4 (1.1)
Salivary gland lesions	4 (1.1)
Mucocutaneous lesions	4 (1.1)
Malignancy	4 (1.1)
Others	8 (2.2)

Most of the oral mucosal lesions were seen in the age group of 41-50 years, followed by 51 -60 years, 31-40 years, 21-30 year, 11-20 years, 61 and above and 0-10 years as shown in table 3.

**Table 3 Association of oral mucosal lesions with age**

Oral mucosal lesion	0-10	11-20	21-30	31-40	41-50	51-60	61 above	P value
Tongue lesions	5	10	9	10	37	15	5	0.110
Oral potentially malignant lesion	0	3	4	5	13	12	2	0.214
Ulcers	0	0	3	5	14	12	0	0.078
Infectious	2	3	3	4	12	5	1	0.057
Soft tissue lesions	0	0	4	3	10	5	0	0.211
Tobacco associated lesions	0	0	1	3	107	17	10	0.167
Gingival lesions	0	0	1	1	4	2	0	0.189
Bony lesions	0	0	0	0	4	0	0	0.121
Salivary gland lesions	0	0	0	0	3	1	0	0.059
Mucocutaneous lesions	0	0	0	0	4	0	0	0.079
Malignancy	0	0	0	0	3	1	0	0.145
Others	0	0	0	0	5	3	0	0.127

All the oral mucosal lesions were more common in male as compared to female except ulcers but no significant association was found between oral mucosal lesion and gender ( $p>0.05$ ) as shown in table 4.

**Table 4 Association of oral mucosal lesions with gender**

Oral mucosal lesion	Male	Female	P value
Tongue lesions	65	26	0.120
Oral potentially malignant lesion	25	14	0.234
Ulcers	22	12	0.076
Infectious	18	12	0.087
Soft tissue lesions	13	9	0.065
Tobacco associated lesions	90	48	0.129
Gingival lesions	6	3	0.121
Bony lesions	4	0	0.210
Salivary gland lesions	4	0	0.050
Mucocutaneous lesions	4	0	0.081
Malignancy	4	0	0.156
Others	5	3	0.134

## DISCUSSION

The prevalence of oral and maxillofacial illnesses fluctuates based on the region, nation, and data source [11]. An oral lesion is any atypical change in colour, texture, puffiness, or integrity of the oral mucosal surface. While some OMLs are benign and necessitate no active intervention, others may exhibit considerable disease. Moreover, OMLs can disrupt the daily quality of life for affected patients [15]. Oral lesions often have an unclear aetiology, which may be viral, fungal, bacterial, associated, or even indeterminate. Comprehending the prevalence of oral mucosal lesions may enhance the prevention, accurate diagnosis, and timely treatment of the condition [16].

In the present study the prevalence of oral mucosal lesion was found to be 86% among the dental patients of Patna, Bihar who visited the hospital during the study period of 2 years. Epidemiological studies have shown significant variability in the incidence rates of oral lesions across different populations attributable to diverse behaviours. OMLs may impact 4.9% to 64.7% of individuals with diverse habits, contingent upon the examined community [17-19]. Andreason [20] identified a prevalence of OMLs at 9.9%. Patil et al. [17] demonstrated that 64% of patients exhibited one or more oral lesions.

In our study the highest prevalence of lesions was found in males as compared to females and this was in accordance to study done by Avcu et al,[21] Chung et al,[22] Castellanos et al [23] and Mehrotra et al,[24] while in the study done by Mobeeriek et al [25] the prevalence of oral lesions in females was higher than males, but in the Corbet et al study in [26] there was no difference in the prevalence between men and women. The elevated incidence of lesions in males may be ascribed to the greater number of individuals examined, the higher prevalence of tobacco consumption among males, and their increased access to tobacco retail outlets. Conversely, due to cultural constraints, women are compelled to uphold a specific image, rendering them less inclined to adopt the detrimental habit of smoking.[7]

In our study population, children aged 0-20 years exhibited a markedly reduced prevalence of OMLs compared to the findings of Nair et al. (64.4%), however greater than those reported by Jahanbani et al. (28%).[27,28] OMLs were predominantly observed in the 41-50 age range, followed by the 31-40 age group, consistent with the findings of Bajracharya et al. (31-40 years). [8] The tobacco usage, whether by chewing or smoking, was observed in this group, potentially contributing to their heightened risk from exposure.

The prevalence of OMLs was notably greater in research based on biopsy records compared to those utilising screening samples from routine dentistry patients, as observed in our investigation. In comparison to our study, discrepancies in the prevalence of certain OMLs have been observed. This may be ascribed to the distinct geographical location, and no studies have been conducted in proximity to our study sample, which is comparatively higher than previous studies in other geographical areas. Several research focused exclusively on young children, middle-aged individuals, or the elderly, and none encompassed a comprehensive spectrum of age groups. The variations in mucosal lesions may also be ascribed to diverse dietary choices, cultural practices, and living conditions.

The limitation of our study was that the population was sourced from a single hospital, resulting in region-specific data. We recommend a multicenter nationwide research to obtain a more precise prevalence estimate. A further weakness of this study was its retrospective design, and the absence of histological evidence for all lesions.

## CONCLUSION

The study concluded that there is significant variability in the prevalence and distribution of oral mucosal lesions globally, with prevalence being region-specific. Our research indicates that the patients exhibits a diverse array of oral mucosal lesions, providing baseline data for this phenomenon.

Oral mucosal lesions were predominantly observed in males, particularly within the 41-50 age demographic, with the most prevalent category associated with tobacco use which emphasises the importance of risk factors involved, routine inspections and follow-ups of OMLs

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