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Dental Science

# EPIDEMOLOGICAL STUDY OF ORAL PREMALIGNANT LESIONS:- AN INSTITUTIONAL EXPERIENCE.

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ABSTRACT Summary	y Epidemiological studies on Oral Premalignant lesions conducted in different parts of the world			

emphasised variation in incidence. Such epidemiological studies are obscured in Eastern state of West Bengal in India.Present study was conducted at an institutional setup in East Indian population to assess the demographic data of oral Premalignant lesions. The retrospective study, which included all the oral Premalignant lesions from the archives of department of oral pathology, Dental teaching and Research Institution in Eastern part of India. The common premalignant lesions of the oral cavity include leukoplakia, oral submucous fibrosis (OSMF) and oral erythroplakia. These lesions have a very high malignant transformation rate. The exact etiological factors for development of the premalignant lesions of the oral cavity are not fully understood till date. Use of tobacco, alcohol drinking, chewing betel quid containing areca nut and solar rays are important etiological factors for resulting the premalignant lesions of the oral cavity. Early diagnosis is an important step for preventing the malignant transformations of these lesions and can be also life-saving. There are several treatment options including conservative to surgical for eliminating the premalignant lesions of the oral cavity. Cases were selected and the assessment year considered was from 2002 to 2022. Demographic data was analysed for these Oral Premalignant lesions..Results were analysed using Chi-Square Test.Incidence of the lesions was found to be 15.2%. Peak age incidence was recorded highest in third and fourth decade of life. Males were commonly involved [62%] with the male to female ratio of 2.43:1. Posterior Buccal mucosa [58.4%], Lateral border of tongue [32] was the chief anatomical location involved with the lesions. Considering the individual lesions, Leukoplakia [62%] was found to be more frequent, followed by OSMF [22%], Oral lichen planus [10%], Erythroplakia [6%].

# KEYWORDS : leukoplakia, oral premalignant lesion, epidemiology.

## **INTRODUCTION:-**

Premalignant lesion of the oral cavity often presents as an abnormal area on the mucosal lining of the oral cavity and may result in significant anxiety of the patients. The premalignant lesions can be found in any part of the oral cavity and the anatomical landmark for oral cavity includes lips, the mucosal lining of the cheek, floor of the mouth, anterior two third of tongue, upper and lower gingiva (gums) and hard palate.<sup>1</sup> The exact etiology of the premalignant lesions of the oral cavity is often variable which may be associated with betel nut chewing, cigarette smoking and alcohol consumption. The premalignant lesions of the oral cavity are seen in association with and preceding oral squamous cell carcinoma.<sup>1, 2</sup>According to the WHO, the premalignant lesions of the oral cavity which may undergo malignant transformation are called as potentially malignant disorders (PMD).<sup>2</sup> There are five types of lesions of the oral cavity described as potentially malignant disorders such as leukoplakia, erythroplakia lichen planus, OSMF and actinic cheilitis.3 Early diagnosis and prompt treatment of the premalignant lesions of the oral cavity is crucial for preventing the oral cavity squamous cell carcinoma.<sup>4,5,6,7</sup>The clinician often face difficulty for diagnosis of the premalignant lesions of the oral cavity on the basis of the clinical findings only as it may consists of disorderly mixture of the dysplastic and nondysplastic cells. So, the clinicians should not underestimate this difficult situation and always suspect the threat of the malignancy in these benign looking lesions of the oral cavity.

pathology. oral Premalignant lesions were considered from the year 2002 - 2022. common lesions considered are Leukoplakia. OSMF, lichen planus, Erythroplakia. The lesions were assessed for site, distribution, age, gender. The study data was collected by a single observer. The inclusion criteria includes histopathological reports and clinical data. based on clinical findings clinical areas divided into 3 segments. segment one include lesions involved buccal mucosa and segment two include lesions involved lateral border of tongue and segment 3 include lesions involved in other areas in oral cavity. Histopathological assessment of all lesions were performed by 2 separate oral pathologists and final diagnosis achieved after the consensus.

## Satistical Analysis:-

Test used for this study - Chi-square test.

used to find association between age, gender and location of oral Premalignant lesions.

#### **RESULTS:-**

In this institutional study, 350 cases oral Premalignant lesions were considered. Cases were selected and the assessment year considered was from 2002 to 2022. The retrospective study, which included all the oral Premalignant lesions from the archives of department of oral pathology, Dental teaching and Research Institution in Eastern part of India. The prevalence of various oral Premalignant lesions showed in (Table. 1).

Table-1. Incidence and gender distribution of Oral Premalignant
lesions.

MATERIAL AND METHODS:-	 			-	
retrospective study was conducted in the department of oral	Total	Male	Female	Ratio	P-Value
					- 100

GJRA - GLOBAL JOURNAL FOR RESEARCH ANALYSIS ★ 129

#### VOLUME - 11, ISSUE - 02, FEBRUARY - 2022 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Leukoplakia	217(62%)	<b>52(24</b> %)	165(76%)	1: 3.1	0.085
OSMF	77(22%)	50(65%)	27 (35%)	1.8:1	
Oral lichen planus	35(10%)	15 ( 43%)	20 (57%)	1:1.3	
Erythroplakia	21(6%)	9 (43%)	12 (57%)	1:1.3	
Total	350(100%)	126( 36%)	224(64%)		

#### Table-2. Age Distribution of Oral Premalignant lesions.

1-10	11-20	21-30	31-40	41-50	51-60	61-70	P-
yr	yr	yr	yr	yr	yr	yr	value
0	0	35	50	80	42	10	0.000
0	0	2	8	35	22	10	
0	4	8	15	8	0	0	
0	0	0	15	6	0	0	1
0	4	45	88	129	64	20	1
	1-10 yr 0 0 0 0	1-10  11-20    yr  yr    0  0    0  0    0  4    0  0    0  4    0  4	1-10  11-20  21-30    yr  yr  yr    0  0  35    0  0  2    0  4  8    0  0  0    0  0  0    0  4  45	1-10  11-20  21-30  31-40    yr  yr  yr  yr    0  0  35  50    0  0  2  8    0  4  8  15    0  0  0  15    0  4  45  88	1-10  11-20  21-30  31-40  41-50    yr  yr  yr  yr  yr    0  0  35  50  80    0  0  2  8  35    0  4  8  15  8    0  0  0  15  6    0  4  45  88  129	1-10    11-20    21-30    31-40    41-50    51-60      yr    yr    yr    yr    yr    yr    yr      0    0    35    50    80    42      0    0    2    8    35    22      0    4    8    15    8    0      0    0    15    6    0      0    4    45    88    129    64	1-10    11-20    21-30    31-40    41-50    51-60    61-70      yr    yr    yr    yr    yr    yr    yr    yr      0    0    35    50    80    42    10      0    0    2    8    35    22    10      0    4    8    15    8    0    0      0    0    15    6    0    0      0    4    8    15    8    0    0      0    0    15    6    0    0    0

females shows high prevalence (64%) more than in males ( 36%). However there is no significant association was achieved with oral Premalignant lesions. (P<0.085). The average age incidence of these lesions were fourth and fifth decades of life. (Table-2) with significant association between age group and oral Premalignant lesions (p<0.000). The present study shows predominant site of involvement was the oral buccal mucosa (P<0.015). (Table-3)

#### Table-3. Distribution of Oral Premalignant lesions.

	Buccal	Tongue	other	P-
	mucosα		areas	value
Leukoplakia	130(59%)	<b>70(33</b> %)	17(8%)	0.015
OSMF	64(83%)	13(17%)	0	
Oral Lichen Planus	35(100%)	0	0	
Erythroplakia	16(76%)	5(24%)	0	
Total	245(70%)	88(25%)	17(5)	

Leukoplakia was assessed the most common oral Premalignant lesions with 217 cases (62%). Second prominent lesion was Oral submucous fibrosis (OSMF) with 77 cases (22%) followed by oral lichen Planus with 35 cases (10%) and erythroplakia 21 cases (6%).

#### DISCUSSION:-

Oropharyaringeal carcinomas are usually preceded by potentially malignant lesions, but are generally diagnosed quite late. It is estimated that approximately 50% of patients with oral cavity cancer have local or remote metastases at the time of diagnosis, so it is very important to diagnose potential malignant lesionslesions.<sup>8,9</sup>

The most common location where pathological changes occurred were the oral cavity floor, buccal mucosa and the lower lip, while Bokor-Bratie et al found that lesions are more common in the oral mucosa and alveolar ridge. Many authors suggest that smoking and drinking alcohol are the main etiologic factors of emergence of PML.<sup>10,11</sup>

According to recent studies and confirmed by our study, the incidence of potentially malignant diseases is on the rise. The average age of our sample was 69 years and the majority were female, which is in accordance with the findings.<sup>10</sup>

In present study, the relative frequency of oral Premalignant lesions was estimated to be 350 cases (15.2%) out of 2302 cases in the department of oral pathology. These lesions were considered from the year 2002 to 2022.

Leukoplakia was assessed the most common oral Premalignant lesions with 217 cases (62%).Second prominent lesion was Oral submucous fibrosis (OSMF) with 77 cases (22%) followed by oral lichen Planus with 35 cases (10%) and erythroplakia 21 cases (6%). the incidence was similar to studies like Maia, H.C. et al examined the incidence of potentially malignant lesions in a sample of 340 patients, of whom 106 had potentially malignant lesions (31.2%) and 61 (17.9%) underwent a biopsy.<sup>11</sup> The most common malignant alterations were erythroplakia, leukoplakia(19), while the most common PML in the Onofre, M.A. study is leukoplakia, followed by lichen and actinic cheilitis.<sup>12</sup>

The prevalence of various oral Premalignant lesions showed in (Table-1). females shows high prevalence (64%) more than in males (36%). the incidence was similar to studies like Sanja Hadzic et al studies Of the 340 patients who came to the clinic for the first time with a certain problem, there were 40 patients with premalignant or potentially malignant lesions. We treated these 40 patients, 23 of whom were female, while 17 were male.<sup>13</sup>

this present study shows oral lichen Planus cases 35 ( 10%), shows similar in studies like Aghbari, S.M.H. investigated the malignant transformation of lichen and, despite a small percentage of malignant transformation, recommended clinical observation of the lesion and cessation of smoking due to an increased incidence in smokers.<sup>14</sup>

study showed most predominant site of involvement was the oral buuccal mucosa (P<0.015).similar in studies like Bokor-Bratie et al found that lesions are more common in the oral mucosa and alveolar ridge.<sup>15</sup>

#### CONCLUSION:-

the study showed 350 case (15.2%) out of 2302 total number of oral lesions from the year 2002 to 2022. present study has reported demographic data of various oral Premalignant lesions with Leukoplakia, OSMF as the predominant lesions. The results were similar to the studies like studies like Maia, H.C. et al examined the incidence of potentially malignant lesions in a sample of 340 patients, of whom 106 had potentially malignant lesions (31.2%) and 61 (17.9%) underwent a biopsy. The most common malignant alterations were erythroplakia, leukoplakia. knowledge of the relative incidence of oral Premalignant lesions in various parts of world, improves proper understanding and comparison of the lesions which enhance the concept of treatment and prognosis.

#### Funding:-

No funding sources.

**Competing intrests:**-None declared.

# Ethical approval:-

Not Required.

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