

# TEN YEAR PRESENTATION PATTERN OF ORAL PREMALIGNANT & MALIGNANT LESIONS AT A TERTIARY CARE HOSPITAL OF LAHORE PAKISTAN

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## ABSTRACT

**Objective:** The aim of the present study to review the reporting frequency of oral premalignant lesions and tumors reporting to tertiary care hospitals of Lahore, Pakistan, during the last ten years to be better informed regarding the burden of local disease.

**Materials and Methods:** 10-year data (2008-2018) about oral premalignant lesions and tumors were collected from medical records of the Oral and maxillofacial surgery department, Services institute of medical sciences, Lahore. The demographic data, along with histopathological diagnosis, were recorded and analyzed using SPSS 20.

**Results:** Out of 256 oral lesions reported, 144 were premalignant lesions, and 112 were oral tumors. The mean age range of patients with premalignant lesions was  $44 \pm 17.6$ , while the mean age range of patients presenting with oral tumors was  $39 \pm 17.4$ . In malignant tumors, the overall male to female ratio was 1.6:1.

**Conclusion:** Among premalignant lesions, maximum cases were of oral submucous fibrosis followed by oral lichen planus. Among oral tumors, epithelial tumors were the commonest with the highest frequency of oral squamous cell carcinoma.

**Keywords:** Oral Premalignant lesions, Oral Squamous cell carcinoma, Frequency, Pakistan.

## INTRODUCTION

Oral premalignant lesions are referred to as any condition or lesion affecting oral mucosa with the potential of malignant transformation. This term encompasses both histological and clinical conditions with malignant potential. These include leukoplakia, erythroleukoplakia, oral submucous fibrosis, oral lichen planus.<sup>1,2</sup> Oral cancer/squamous cell carcinoma is the most common malignant condition preceded by oral premalignant conditions. The 2-step process of oral cancer development by the presence of initial precursor premalignant lesion is well established.<sup>1,3</sup>

Malignant transformation rates (MTR) of each premalignant lesion varies from 0%-50%.<sup>3</sup>

Oral squamous cell carcinoma is 6th leading cancer with high global incidence.<sup>4</sup> Overall, all incidence of oral cancer is high among the Pakistani population due to the use of pan, gutka, and smoking.<sup>5-7</sup> This study is carried out to review the prevalence of oral premalignant lesions and tumors reporting to tertiary care hospitals of Lahore during the last ten years.

## MATERIALS AND METHODS

A hospital-based descriptive study of patients with premalignant conditions, benign and malignant tumors of the oral cavity was planned. The 10-year data from 2008-2018 were collected from medical records of the Oral and maxillofacial surgery department, Services institute of medical sciences, Lahore.

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Age, gender, and histopathological diagnosis were retrieved manually. The data was recorded and analyzed using SPSS 20.

**RESULTS**

In the 10-year duration, among all the patients reporting to the OMFS department, 256 were diagnosed with oral premalignant lesions and tumors. Out of these, 144 were premalignant lesions, 112 were oral tumors (fig 1).

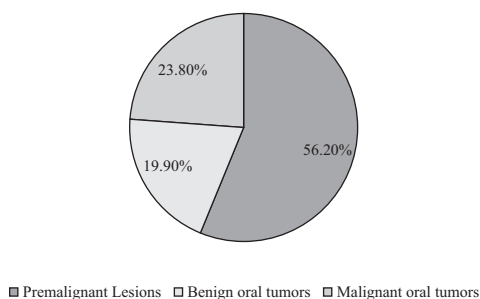
Among premalignant lesions, maximum cases were of oral submucous fibrosis followed by oral lichen planus, leukoplakia. The mean age range of patients with premalignant lesions was 44 ±17.6. Out of 144 premalignant lesions, 83 were male, and

61 were females. The male population was seen to affect more by OSMF while the females presented more with oral lichen planus (fig 2).

The mean age range of patients presenting with oral tumors was 39 ± 17.4. In the group of 112 patients, 51 presented with benign oral tumors, and 61 were malignant. Amongst the benign ones, tumors of soft tissue were more frequent, while epithelial tumors mostly squamous cell carcinoma was the most common one among malignant oral tumors. The male to female ratio was 1.6:1, and the male population was seen to affect more by a malignant epithelial tumor that was squamous cell carcinoma (Table 1).

**Table: 1** Frequency distribution of benign and malignant oral tumors among both genders

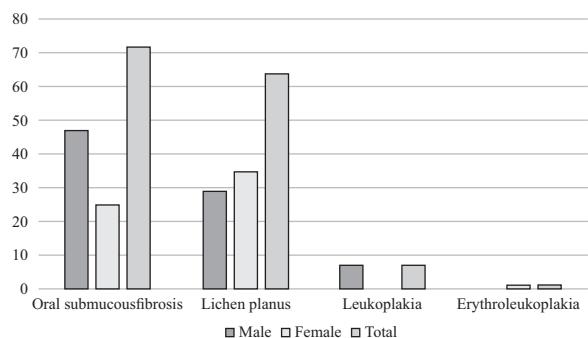
TUMORS	Benign				Malignant				Total
	Epithelial	Salivary glands	Soft tissue	Hard Tissue	Epithelial	Salivary glands	Soft tissue	Hard Tissue	
Male	0 (0%)	6 (8.6%)	11 (15.9%)	6 (8.6%)	42 (60.8%)	4 (5.7%)	0 (0%)	0 (0%)	69 (100%)
Female	3 (6.9%)	6 (13.9%)	12 (27.9%)	7 (16.2%)	15 (34.8%)	0 (0%)	0 (0%)	0 (0%)	43 (100%)



**Fig 1:** Percentage of premalignant, benign, and malignant oral tumors

**DISCUSSION**

In the present study, oral premalignant lesions (OPML) were found to be the most common. Oral submucous fibrosis (OSMF) was found to be one of the most common OPML, mostly affecting the male population. Most patients diagnosed with OSMF were in the 3<sup>rd</sup>-4<sup>th</sup> decade of their life. A study conducted at Dr. Ishrat-ul-Ibad Institute of Oral Health Sciences (DIKIOHS), Karachi. In 2012 reported OSMF to be commonest<sup>8</sup> amongst premalignant oral white lesions Two of other studies carried out at DI-KOHS in 2017<sup>9</sup> and Dow International medical col-



**Fig 2:** Frequency distribution of premalignant lesion as per gender

lege Karachi in 2018 also reported high prevalence of OSMF in the male population.<sup>10</sup> Another 3-year study carried out in Pakistan institute of Medical Sciences (PIMS) Islamabad also found the same results.<sup>11</sup> The use of areca nut has been suggested to be the main causative factor of OSMF by IARC in the south Asian population. In Pakistan, the use of areca nut is widespread, especially in the form of a pan, gutka, supari, which might be the leading cause of increased cases of OSMF.<sup>10</sup> A study conducted at the Armed force institute of dentistry reported OSMF to be the second most common premalignant lesion

preceded by Oral Lichen planus.<sup>12</sup> They also reported predilection of lichen planus among females and the middle age group, which supports the outcome of our study.<sup>11</sup> The study conducted at PIMS reported oral lichen planus to be the second most prevalent OPML, which was also similar to the findings of this study. Another 5-year retrospective study on lichen planus at the University of Lahore revealed that most patients affected by OLP were middle-aged and females.<sup>13</sup>

Tumors affecting the orofacial region are either benign or malignant. Pakistan is considered to be the 7<sup>th</sup> most populated country with maximum cases of oral malignancies. 90% of oral malignancies are epithelial in origin and diagnosed as Squamous cell carcinoma.<sup>7</sup> In the present study, all the malignant tumors reported during this 10-year duration were diagnosed as squamous cell carcinoma. Annual Cancer Registry Report-2016 of Shaukat Khanum Memorial Cancer Hospital (SKH&RC)<sup>14</sup> and Karachi Cancer registry Pakistan also reported SCC to be a common malignant lesion affecting oral region.<sup>15</sup> A five-year study (2005-2009) conducted at Mayo hospital Lahore<sup>16</sup> and a six-year study (2007-2012) carried out at Railway hospital Rawalpindi,<sup>17</sup> also reported OSCC to be most prevalent among all malignant tumors diagnosed. Similar findings were observed in two different studies conducted at Jinnah postgraduate medical training center Karachi, found the same results.<sup>18,19</sup> The prevalence of OSCC was also found to be 95% in a 5-year hospital-based study at Bahawalpur Institute of Nuclear Medicine and Oncology (BINO) and the Multan Institute of Nuclear Medicine and Radiotherapy (MINAR).<sup>20</sup> In the present study, patients presenting with OSCC were

Mostly from the 4<sup>th</sup>-5<sup>th</sup> decade of life and showed a male predominance. These findings are similar to various studies reported in Pakistan.<sup>7,21-24</sup> The likely reason for elderly patients to be affected more can be related to the accumulation of mutations and a decrease in efficiency of DNA repair mechanism over time owing to reduced immune surveillance against cancer cells. The male predominance can be owed to their more use of tobacco products, alcohol, and sun exposure due to outdoor occupation as compared to females.

The various institutional-based studies throughout different cities of Pakistan have given a good

insight into the prevalence Of OSCC within Pakistan. Still, there are very few studies that have reported the prevalence pattern of premalignant lesions among the Pakistani population. To the best of knowledge, it is only studied which has published the prevalence pattern of the premalignant lesion, also adding more data about the prevalence of OSCC. This single institutional-based study has a limitation as data reflects the patient population reporting to the hospital and not the entire community. The inability to investigate the associated risk factors and patient outcome overtime was also the limitation of the study. Further studies reporting prevalence pattern from different parts of Pakistan should be done while also taking into account the missed factors will help us devise effective strategies regarding prevention, early diagnosis, and treatment of these lesions.

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