Original Article

Evaluation of Dysplasia in Oral Lichen Planus Patients of Oral Medicine Department of Semnan University of Medical Sciences from 2013 to 2018

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ABSTRACT

Background and Aim: Oral lichen planus (OLP) is a chronic mucocutaneous disease, which is considered a precancerous condition. OLP is a multifactorial disease with no conclusive treatment. Timely diagnosis and treatment of oral lesions are necessary steps to prevent malignant transformations and severe complications of oral cancer. This study aimed to evaluate the frequency and severity of malignant transformations in OLP.

Materials and Methods: In this study, 2400 files of patients who presented to the Oral Medicine Department of the Dental School of Semnan University of Medical Sciences from 2013 to 2018 were evaluated. Data were statistically analyzed using SPSS.

Result: Forty patients (9 males and 31 females with the mean age of 45.2 years) were diagnosed with OLP (1.6%). The most common type of OLP was reticular (75%), and the least common was the ulcerative type. Since toluidine blue staining was positive for 4 patients (10%), a biopsy was done. The histopathological examinations showed one case with dysplasia (2.5%) and one case of carcinoma (2.5%).

Conclusion: According to the results, carcinoma and dysplasia can develop in OLP patients. Regular follow-ups are strongly recommended for timely diagnosis and treatment of malignant transformations.

Keywords: Lichen Planus, Oral, Squamous Cell Carcinoma, Mouth Neoplasms

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Introduction:

Oral lichen planus (OLP) is a chronic mucocutaneous disease, which frequently affects the oral mucosa with a wide spectrum of clinical manifestations.

It is more common in middle-aged women. OLP has been reported in other parts of the body, such as the flexor areas of the skin (elbows and groin), nails, and esophageal and genital mucosa.

There are different concepts regarding the main etiology of OLP, such as immune system involvement, T cell activation, and stress. Nevertheless, studies show that OLP is a multifactorial process. [1-5]

Clinically, OLP presents as white and red components with different subtypes, such as reticular, papular, plaque-like, bullous, erythematous, and ulcerative types.[6] The presence of reticular and papular components is essential for the clinical diagnosis of OLP. Due to its unknown etiology, OLP has no definitive treatment. Palliative treatments are used to subside the symptoms. Also, physicians may prescribe drugs, such as steroids, for patient comfort.[7] In addition to side effects such as pain, burning, mucosal irritation, and the possibility of involvement of other mucous membranes and skin, many researchers consider OLP as a precancerous condition. The percentage of OLP malignant transformations has been reported to be between 0% and 10% in previous studies.[8,9] A study performed in Iran showed a significant rate of dysplastic changes in OLP (10.7%); therefore, it is rational to periodically follow-up the patients, not only to monitor the development of the disease but also to avoid possible initial misdiagnoses.[10]

Timely diagnosis and treatment of oral lesions are necessary steps to prevent malignant transformations and severe complications of oral cancer. This study aimed to evaluate the frequency and severity of malignant transformations in OLP patients who presented to the Oral Medicine Department of the Dental School of Semnan University of Medical Sciences.

Materials and Methods:

In this cross-sectional study (ethical approval code: IR.SEMUMS.REC.1396.251), the archived files of patients who presented to the Oral Medicine Department of the Dental School of Semnan University of Medical Sciences were reviewed, and the patients were clinically examined. The demographic data, medical history, medications, and the intraoral soft tissue characteristics were recorded in datasheets. Incomplete files and patients with severe oral mucosal diseases other than OLP were excluded. IL, USA).

Result:

Written consent forms were received from all patients. Data were statistically analyzed using SPSS (SPSS Inc., Chicago,

The examination of 2400 cases showed a prevalence rate of 1.6% (40 cases) for OLP (31 females (77.5%) and 9 males (22.5%) with the mean age of 45.2 years). In terms of the educational level, 26 patients had a diploma (65%) while 11 patients had not (27.5%); three patients had a bachelor's degree (7.5%). Reticular subtype affected most patients. The least common form of OLP was the ulcerative type (Table 1).

Table 1:Frequency of different types of oral lichen planus (OLP) among patients

OLP type	Frequency	Percentage
Papular	3	7.5
Reticular	30	75.0
Plaque-like	3	7.5
Erosive	3	7.5
Ulcerative	1	2.5
Total	40	100

OLP was mostly reported in housekeepers and least reported in workers. Twenty-three patients were housekeepers (57.5%), 6 were employees (15%), 6 were self-employed (15%), 3 were students (7.5%), and 2 were workers (5%).

In terms of the underlying disease, five patients had hypertension (12.5%), and one patient was diabetic (2.5%). Two patients were (5%) smokers, and cutaneous involvement was reported in only one patient (2.5%). Three patients were taking levothyroxine (7.5%), and 3 patients were on propranolol (7.5%).

Toluidine blue staining was positive for four patients (10%). The histopathological examinations revealed dysplasia in one patient (2.5%) and carcinoma in another patient (2.5%).

The frequency of OLP based on the location of the lesion is presented in Table 2.

Table 2:Frequency of oral lichen planus (OLP) according to the location of the lesion

Lesion site	Frequency	Percentage
Labial mucosa	1	2.5
Buccal mucosa	32	80.0
Lateral border of the tongue	1	2.5
Gingiva	1	2.5
Cheek and tongue borders	3	7.5
Lips and cheek	1	2.5
Pharynx	1	2.5
Total	40	100

Discussion:

Despite its significance, few studies have been conducted concerning OLP in different parts of Iran, and therefore, there is a lack of accurate statistics of its risk of malignant transformations.
In this study, the prevalence of OLP among patients who presented to the Oral Medicine Department of the Dental School of Semnan University of Medical Sciences from 2013 to 2018 was reported to be 1.6%. Other studies have reported the prevalence of OLP to be between 0.22% and 0.7%. [11-13] This difference is probably due to different sample sizes and statistical populations, as well as various risk factors in different societies.

Similar to other studies that have reported a higher prevalence of OLP in women, in the current study, women were 3.44 times more likely to develop the disease than men were. [12-14] In the present study, the mean age of OLP patients was 45.2 years. Pakfetrat et al (16.41 years), Oliveira Alves et al (08.54±13.14 years), Fitzpatrick et al (52 years), and Mardani et al (54.3 years) also reported most patients to be middle-aged. [11-13,15-17] The rate of cutaneous involvement was 2.5% in our study but Fitzpatrick et al reported a rate of 25%. [15]

The most common OLP site was the buccal mucosa, which was similar to the reports of previous studies.[12-14] The most common OLP subtype in the present study was the reticular form, which was similar to the findings of previous studies. [12,13] Mardani et al reported erosive OLP as the most common form since they biopsied and further examined red lesions.[11]

From the samples, 10% required toluidine blue staining; the results indicated a 5% rate of malignant transformation as dysplasia was detected in one patient (2.5%) and carcinoma was observed in another (2.5%). Fitzpatrick et al (1.09%), Mardani et al (1.03%), Tovaru et al (0.95%), and Guan et al (0.6%) have reported lower rates of malignant transformations compared to the present study.[11,14-16] Aghbari et al and Idrees et al found a higher incidence of malignant transformations among smokers, alcoholics, and hepatitis C virus (HCV)-infected patients;[17,18] nevertheless, such associations need further research. This discrepancy shows the need for supplementary studies as to why the risk of OLP malignant transformations in the current study is higher than that reported by previous studies. Since stress plays a significant role in malignant transformations, future studies should focus on examining stress as an etiologic factor in the development of squamous cell carcinoma (SCC) in OLP.

In a study conducted on an Iranian population, the prevalence of dysplasia was reported to be 10.7% among 112 OLP cases studied.[10] The high prevalence of dysplasia in the cited study (in comparison with the present research) emphasizes the importance of monitoring OLP patients.

Conclusion:

According to the results, the incidence rate of carcinoma and dysplasia in OLP patients is 2.5%. It is essential to monitor the patients regularly for malignant transformations. Timely and non-invasive treatments are necessary to improve the quality of life of these patients.

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