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## Oral lichen planus: A retrospective study of 420 Iranian patients

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### Abstract

**Objective:** In terms of the demographic and clinical characteristics, this is the one of the largest studies on Iranian patients with Oral Lichen Planus (OLP).

**Study design:** Data was taken from the medical records of 420 consecutive patients referred to the Oral Medicine Department, and who were subsequently found to have clinical and usual histopathology consistent with features of OLP.

**Results:** Seventy percent of the patients had been referred to the Oral Medicine Department by general dental practitioners. 52.6% were referred due to oral mucosal and/or gingival pain or burning sensation. Reticular OLP was the most common presentation (76.9%); about 18% of patients reported symptoms or signs, or had a known history of OLP, or possible Lichen Planus affecting non-oral epithelia. A malignant transformation rate of 0.07% was observed.

**Keywords:** Lichen planus, oral.

### Introduction

Oral lichen planus (OLP) is a relatively common mucocutaneous disorder of middle aged and elderly persons, which seems to represent a spectrum of conditions that share a common background with clinical presentations ranging from mild painless white keratotic lesions to painful erosions and ulceration (1,2). The reported prevalence rates of oral lichen planus (OLP) vary from 1% to 2% of the population (3).

Although relatively frequent, oral lichen planus is the target of much controversy, especially in relation to its potential for malignancy (3).

Furthermore, some of the earlier studies of the demographic and clinical presentations of OLP included only relatively small numbers of patients. The aim of this study was to undertake a retrospective study of the general features and clinical presentation of large patients in Iran with OLP.

## Materials and Methods

### *Patient group*

The study group comprised 420 patients referred to Oral Medicine Department of Mashhad Dental School, Iran, and comprising a 6-year period from 2000 to 2005.

The hematoxylin-eosin (H&E) stained sections of all included cases were reviewed. The diagnosis of OLP was based on the following criteria:

The classical histopathological findings in oral lichen planus are: lichenification of the basement layer, followed by a marked layered lymphocytic infiltrate immediately underlying the epithelium; the presence of numerous eosinophilic colloid bodies along the epithelial-connective tissue interface (Civatte bodies); absent, hyperplastic or more frequently, sawtooth-shaped inter-papillary ridges; variable thickness of the spinous layer; and variable degrees of ortho or parakeratosis. (4)

OLP is classified as reticular (lacelike keratotic mucosal configuration), atrophic (keratotic changes combined with mucosal erythema), or erosive (pseudomembrane covered ulceration combined with keratosis and erythema) and bullous (vesiculobullous presentation combined with reticular and erosive pattern) (5).

All patients were subsequently found to have clinical and usually histopathological features, of OLP. We excluded the lichenoid reaction lesions from our research. The clinical features and distribution of all squamous cell carcinomas confirmed by biopsy were recorded. And risk factors for oral cancer, including tobacco and alcohol use, were ascertained in these patients.

The patients in this study had been clinically monitored for at least 3 months after diagnosis of their OLP. The case records of all 420 patients were reviewed, and relevant retrospective data extracted systematically.

The majority of case files contained the necessary data for analysis.

### *Data analysis*

The records of all 420 patients were reviewed, information regarding age and approximate duration of disease at presentation, gender, sites, clinical forms (reticular, atrophic, and erosive) and symptoms was recorded at the time of diagnosis. A history of systemic illnesses, past medical history and past drug history was obtained from all patients and all medical files of patients were evaluated. Exacerbating factors of OLP identified by either patients or the examiner were also noted.

Descriptive statistical analysis was used to summarize the demographic and clinical features of the study group.

## Results

420 patients with histopathologic-confirmed OLP were identified, from a group of 2025 patients referred to Oral Medicine Department from 2000 to 2005. The prevalence of lichen planus was 18.2%.

### *Patient gender*

Two hundred and seventy-three patients (64.9%) were female, and 147(35.1%) male.

### *Age of onset of oral lichen planus*

The mean age of presenting symptoms or signs for OLP was 41.6 years, with an overall age range of 13 to 75 years.

OLP was most prevalent among women between ages of 30-44 years old. Less than 1% had developed OLP before the age of 13.

### *Source of referral of patients with oral lichen planus*

About 70% of the patients had been referred to Oral Medicine specialists by their general dental practitioners, 1.2% were referred from other specialties, 11.4% were referred by their general medical practitioners, 1.7% by dermatologists from hospitals. Only 16% patients referred themselves to the clinic.

### *Chief symptoms associated with oral lichen planus*

Oral soreness was the chief symptom in 221 (52.6%) patients; the buccal mucosa, tongue and gingiva were the main sites of involvement. Sixteenth percent of patients had asymptomatic oral white patches which were discovered by clinicians on routine oral examination. Patients also described pain (22.4%), itching (2.4%), irritation and ulcer (21%), roughness (5%) and discoloration of oral mucosa (28.6%).

### *Clinical types of oral lichen planus*

Almost 95% of patients had a bilaterally symmetrical distribution of oral lesions. The most common type was reticular lichen planus which was observed in 77% patients (Fig.1): 60% of these lesions were present in combination with other types of OLP (Fig.2).

Atrophic lichen planus was the next most common type, occurring in almost 34.8% of patients.

Although most patients had multiple oral sites of involvement, the buccal mucosa was the single most common site (85.2%), followed by the tongue, gingiva, labial mucosa, and vermilion of the lower lip.

### *Natural history and complications*

Exacerbating factors were stress, foods (most frequently tomatoes, citrus, and spicy items), dental procedures, systemic illnesses.

At least 50% of patients reported one of these factors, with stress identified as the most frequently. 22.9% of patients had the history of psychological disorders, 67.9% of patients were systemic compromised. These data were collected from the patient medical files and past/present medical and drug history.

In most patients, the lesions were persistent during the period of observation. Histopathological examination of the lesions revealed dysplasia in 7.1% of subjects and three (0.07%) patients (two males, one female) developed an oral malignancy.

All malignant transformations occurred in erosive or erythematous types of lichen planus which mild dysplasia had been reported in their first biopsies.



**Fig 1.** Keratotic lichen planus with reticular pattern.



**Fig 2.** Atrophic lichen planus of palate.

#### *Non-oral lichen planus lesions*

83% of our patients had only oral lesions, while 17% had involvement of LP at sites other than the oral cavity, including skin (15.5%) hair (1.9%) and nail (0.7%). The age and gender distribution of the OLP patients had no difference from those without extraoral involvement. The majority of patients with non-oral disease developed mucocutaneous lichen planus following the onset of their oral disease.

#### **Discussion**

In general, the results of the present study about OLP are compatible with previous studies in the China, South America, UK (6-8). Although it seems that OLP is more prevalent in third to fourth decade of life in our study (The mean age was 41.6 years), which is lower than some of other reports (5,8) and perhaps surprisingly could arise in adults as young as 13 years. However, OLP was observed in a child in our study, perhaps reflecting the rarity of OLP in childhood (9).

OLP has previously been reported to be more frequent in females than in males (8). The same finding was shown in the present study.

The majority of our patients reported some degrees of

oral discomfort, which was typically generalized, but as in other studies patients with non-erosive or non-ulcerative OLP often still complained of oral discomfort (9). Over 80% of the present group of patients had some degree of oral soreness. Patients usually had oral discomfort several months prior to referral.

Affirming other studies reticular and atrophic-erosive forms were the most common types of OLP in the present study (6,8,10,11).

The lesions of OLP were typically symmetrical and, in agreement with previous studies, the buccal mucosa and tongue were the most commonly affected sites. Patients often had lesions affecting several oral mucosal surfaces.

Precipitating factors that resulted in an exacerbation of the disease were frequently noted in this study and included stress, foods, dental procedures, systemic illness, and poor oral hygiene.

The majority of individuals with OLP will continue to have signs of disease, and in view of the controversy of the associated malignant potential, will require careful monitoring by an appropriate trained clinician for very many years (1,2,8). At least three studies using strict diagnostic criteria have shown a significant risk of malignant transformation of OLP to squamous cell carcinoma (SCC) (1). Epithelial malignancy has been reported to range from 0% to 6.25% in retrospective and prospective studies (6,12). Histopathological examination of OLP revealed dysplasia in 7.1% of subjects, only 0.07% of our patients (3 patients) subsequently developed oral squamous cell carcinoma, which was lower than malignant transformation rates of other studies by Israeli, Danish, American, Greek, Italy and Chinese studies (1.3%, 1.5%, 1.2%, 0.8%, 1.3%, 2.23%, 2.07%) respectively (13-19).

In view of many patients with OLP having risk activities for potentially malignant and malignant disease of the mouth, it would seem essential that all patients with OLP be informed of the potential for a link between OLP and oral cancer. Nevertheless, none of three patients in this study had a history of tobacco or heavy alcohol use. The site of involvement for oral SCC in two patients was tongue and in one was buccal mucosa. Duration between onsets of OLP to malignant transformation was 6 months, one year and 5 years. All of these 3 patients were under follow up and routine treatment and all had showed dysplasia in their histopathological examination.

Cutaneous and genital involvement of lichen planus can precede, arise concurrently with or appear after the development of OLP (8) and it is estimated that 20–34% of patients with OLP will have cutaneous or other mucosal lesions of LP (8). In the present study 17% patients had a history of symptoms of possible non-oral LP which is lower than the Silverman study in 1998 (25%) (14).

However, it is evident that patients with OLP may have symptoms and, possibly, signs of non-oral LP. There is

thus good reasons for specialists in Oral Medicine to examine the skin of the hands, feet and legs of patients attending such clinics carefully with possible diagnosis of OLP and, when relevant, refer the patient to an appropriate specialist (8).

The results of this study reveal that Iranian patients with OLP are typically middle-aged, usually have complain of variable degrees of oral discomfort and have bilateral lesions affecting the buccal mucosa, tongue and gingivae. The lesions are usually reticular plaque-like and/or atrophic erosive, although patients often have more than one type of OLP. Only a minority of patients develop lichen planus affecting other mucocutaneous regions, typically the skin of the extremities.

Only about 3 patients (0.07%) develop an oral carcinoma, which is lower than some malignant transformation rates have been reported (19,20). Studies of the malignant potential of oral lichen planus (OLP) have been hampered by inconsistencies in the diagnostic criteria used for OLP (21), however, as the majority of patients will have long-standing OLP, and perhaps a risk of malignant transformation, it is essential that such individuals be carefully monitored by a well experienced clinicians in long term (22-24).

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