

Clinical study of Oral Lichen Planus for a selective sample in Basrah City south of Iraq between 2017-2019

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ABSTRACT

Objectives: the study investigates the clinical appearance of oral lichen planus (OLP) in a selective sample in Basrah city and compare with other studies.

Materials and Methods: The study included 45 patients with clinically and histopathologically confirmed OLP collected from Oral Diagnosis Department, Oral Medicine Clinic at the College of Dentistry, Basrah University during the period between October 2017 and October 2019. Registered authors regarding age, gender, clinical type, site and the presence of dysplasia.

Results: Of 45 patients with OLP, 27(60%) were females, and 18(40%) were males. The predominance of patients was in the fourth to sixth decades of age. Buccal mucosa was the leading site of contribution 23(51.1%). The erosive structure was the regular clinical sort found in 18(40%), trailed by reticular in 17(37.7%), atrophic in 5(11.1%) and plaque-like in 5(11.1%). The disease caused pain and other symptoms in 25(55.6%) patients. Histopathological study shows Dysplastic changes of OLP was in 4 (8.9%) of the cases.

Conclusions: OLP is a chronic disease with diverse clinical manifestation and multiple site involvement. In almost half of the cases were symptomatic with the erosive form experience significant discomfort—few cases presented with dysplasia. Periodic follow-up examination of all patients with OLP recommended.

Keywords: Oral lichen planus, Clinical features, Histopathological finding, Dysplastic change

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INTRODUCTION

Lichen planus is one of the most generally perceived dermatological diseases considered being a moderately chronic inflammatory mucocutaneous[1,2]. The prevalence of oral lichen planus is between 0.1% and 2.2%[3]. The oral variant, Oral lichen planus (OLP) most habitually influences women somewhere in the third to sixth decades of life[4]. (OLP) affecting the oral mucosa with distinct relapses and remissions[5]. Furthermore, OLP occurs more frequently than cutaneous form, and it is of a more persisting and more resisting to treatment[6]. The particular purpose behind OLP is not clear, although the immunologic system expects the principal function in its pathogenesis, where auto-cytotoxic T lymphocytes trigger apoptosis of epithelial cells provoking chronic inflammation[7,8]. OLP consider as a multifactorial process containing occasions that may occur at the various time point[9]. Haematological anomalies are present in patients with OLP. Nutrient vitamins B12 and folic acid are significant elements for the exact capacity of the human immune system [10,11]. Mental factors, for example, stress; may likewise be of significance to establish the inflammatory process and proposed a relationship with the lack of nutrient vitamins B1, B6, C and OLP[11,12].

Starting late a connection between oral lichen planus and hepatitis C infection and this association related to a hereditary inconstancy between nations; this maintained by the discernment that specific alleles of the massive histocompatibility complex (HLA-DR6)[13].

Oral lichen planus disease affecting the various site of the oral cavity with the buccal mucosa, usually bilateral, being the most typical site followed by the tongue and gingiva. The clinical variations of OLP incorporate reticular, erosive, atrophic, bullous, papular, and plaque-like, with the reticular variation being the commonest

one[14]. It is not remarkable for a similar patient to give different types of OLP[2].

Diagnosis of OLP made on the clinical and histopathological basis. Histopathology described by lopsided epidermal/epithelial thickness, basal cell degeneration and a band-like infiltrate, involving mononuclear cells at the dermo-epidermal junction. Because of the expanded danger of squamous cell carcinoma in an ulcerative type, ordinary follow up ought to be done, and change in symptoms should be reported[15].

The danger of malignant change varies between 0.4 – 5% of times of perception from 0.5 to 20 years[16], rely upon the clinical sort of OLP, or the treatment utilized. However, the remaining parts some stress overtreatment with the immunosuppressive drugs that could theoretically weaken defences[17].

The current investigation done to examine the histopathologically analyzed instances of OLP as far as age, sexual orientation, clinical variation, site, and the presence of dysplastic changes in a particular example in Basrah city.

MATERIALS AND METHODS

This study carried out during the period between October 2017 and October 2019 in Basrah city; Oral Diagnosis Department, Oral Medicine Clinic at the College of Dentistry, Basrah University. A total of (45) patients were in cooperated in this study, the female constitutes 27 (60 %), while the male 18 (40 %). An educated assent structure got for every patient, after giving definite and portrayal the point of the examination for all patients. The diagnosis of OLP done by documented data of the patient (personal information, past medical and dental history, signs and symptoms, onset and duration of the complaint). Extraoral and intraoral examination (site and size of the lesions) by oral medicine specialist. In the oral

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- maxillofacial department, an Incisional biopsy taken for all patient from a specific region of the lesion. All biopsies examined in the histopathological laboratory in the college. The histologic rules for analysis included hyperorthokeratosis or parakeratosis, degenerative changes of basal cells, the presence of Civatte bodies and a band-like subepithelial invasion of lymphocytes. The information got were Statistically analyzed utilizing the (SPSS) programming for windows version 20.

RESULTS

Among 45 patients had OLP; 27 (60%) were female, and 18 (40%) were male (Figure 1). In this study, most cases were at age group 46- 65 years 18(40%) females and 10(22.2%) male, while the age group between 25-45 years represented about 8(17.8%) females and 3(6.7%)males, above 65 years represented only (13.3%) as shown in (Table 1), (Figure 2).

Buccal mucosa considers as a predominant site 23(51.1%) distributed 13(28.9%) in females and 10(22.2%) in males. Regarding multiple locations, the predominant was buccal mucosa - tongue 14(31.1%), seen in female10(22.2%) and 4(8.9%) in male, 4(8.9%), in buccal mucosa - gingiva 4(8.9%) and only 2(4.4%) for both buccal mucosa-floor of the mouth and buccal mucosa-tongue-gingiva (Table 1).

About 25(55.6%) has Painfull symptom 17(37.8%) seen in females and 8(17.8%) in male (Figure 3). Most of the patients were healthy, forming 39(86.7%), only 5(11.1%) were diabetic and one with chemotherapy. Smoker patient was 10(22.2%) patients , males 8(17.8%) and 2(4.4%) females. Only 4(8.9%)of patients have dysplasia, 3(6.7%)in females and 1(2.2%) in male, shown in (Table 1).

Table. 1: Demographic characteristic of sex groups for the study sample.

		Sex		Total	P-value
		Male	Female		
Age	25-45	3 6.7%	8 17.8%	11 24.4%	0.067
	46-65	10 22.2%	18 40.0%	28 62.2%	
	above 65	5 11.1%	1 2.2%	6 13.3%	
Site	buccal mucosa	10 22.2%	13 28.9%	23 51.1%	0.405
	buccal mucosa & Tongue	4 8.9%	10 22.2%	14 31.1%	
	Buccal mucosa & gingiva	3 6.7%	1 2.2%	4 8.9%	
	Buccal mucosa & Floor of the mouth	1 2.2%	1 2.2%	2 4.4%	
	Buccal mucosa, Tongue & Gingiva	0 0.0%	2 4.4%	2 4.4%	
symptom	painful	8 17.8%	17 37.8%	25 55.6%	0.179
	Asymptomatic	10 22.2%	10 22.2%	20 44.4%	
Healthy patients		16 35.6%	23 51.1%	39 86.7%	0.890
Diabetic		2 4.4%	3 6.7%	5 11.1%	
Chemotherapy		0 0.0%	1 2.2%	1 2.2%	
Smoker	No	10 22.2%	25 55.6%	35 77.8%	0.005
	Yes	8 17.8%	2 4.4%	10 22.2%	
Dysplasia	negative	17 37.8%	24 53.3%	41 91.1%	0.471
	Positive	1 2.2%	3 6.7%	4 8.9%	

No significant difference between the types of OLP, Erosive OLP was 18(40%), in female 11(24.4) and 7(15.6%) in male. Reticular OLP was 17(37.7%) in females 11(24.4%) while in male 6(13.3%) and 5(11.1%)

for both Atrophic and plaque OLP. Most of OLP type 28(62.2%) seen in age groups between 46-65 years as follows; 11(24.4%) reticular, 9(20.%) erosive, 5(11.1%)atrophic and 3(6.7%) plaque, (Table 2).

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Symptomatic complaint associated with erosive type 18(40%), atrophic 5(11.1%) and just 2(4.4%) recorded with reticular type, and it is statically significant (Figure 4). Only 10(22.2%) patients was smoker, 4(8.9%) has a reticular type, 3(6.7%)with erosive type, 2(4.4%) atrophic and 1(2.2%)plague types. Dysplastic changes

found in 3(6.7%) patients with reticular OLP, and only 1(2.2%) in erosive type (Figure 5). The distribution of the lesion 23(51.1%) bilateral, 10(22.2%) erosive and 8(17.8%) reticular, 10(22.2%) seen in the left side and 12(26.7%) seen in the right side, see (Table 2).

Table. 2: Demographic characteristic of OLP groups for the study sample.

		Type				Total	P-value
		Erosive	Reticular	Atrophic	Plague		
Sex	Male	7	6	1	4	18	0.291
		15.6%	13.3%	2.2%	8.9%	40.0%	
	Female	11	11	4	1	27	
		24.4%	24.4%	8.9%	2.2%	60.0%	
Age	25-45	5	5	0	1	11	0.375
			11.1%	11.1%	0.0%	2.2%	
	46-65	9	11	5	3	28	
			20.0%	24.4%	11.1%	6.7%	
above 65	4	1	0	1	6		
		8.9%	2.2%	0.0%	2.2%	13.3%	
Dysplasia	Negative	17	14	5	5	41	0.469
			37.8%	31.1%	11.1%	11.1%	
	Positive	1	3	0	0	4	
		2.2%	6.7%	0.0%	0.0%	8.9%	
symptom	Painful	18	2	5	0	25	0.001
			40.0%	4.4%	11.1%	0.0%	
	Asymptomatic	0	15	0	5	20	
		0.0%	33.3%	0.0%	11.1%	44.4%	
Smoker	No	15	13	3	4	35	0.698
			33.3%	28.9%	6.7%	8.9%	
	Yes	3	4	2	1	10	
		6.7%	8.9%	4.4%	2.2%	22.2%	
Bilateral		10	8	3	2	23	0.319
		22.2%	17.8%	6.7%	4.4%	51.1%	
Left side		3	5	0	2	10	
		6.7%	11.1%	0.0%	4.4%	22.2%	
Right side		5	4	2	1	12	
		11.1%	8.9%	4.4%	2.2%	26.7%	

This study show dysplasia in 4(8.9%) patients only, 2(4.4%) in both age group 25-45 years and 46-65 years, 3(6.7%)in female and only 1(2.2%) in male, all of the dysplastic changes reported were in the buccal mucosa, 3(6.7%) seen in the left side and only 1(2.2%) in the right

side. Two patients with dysplastic changes were smokers, and only two patient with dysplastic changes has a complaint all dysplasia associated with healthy patients (Table 3).

Table. 3: Demographic characteristic of dysplasia for the study sample.

		Dysplasia		Total	P-value
		Negative	Positive		
Age	25-45	9	2	11	0.520
			20.00%	4.40%	
	46-65	26	2	28	
			57.80%	4.40%	
above 65	6	0	6		
		13.30%	0.00%	13.30%	
	Male	17	1	18	0.471

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Sex		37.80%	2.20%	40.00%	
	Female	24	3	27	
		53.30%	6.70%	60.00%	
Site	buccal mucosa	19	4	23	0.461
		42.20%	8.90%	51.10%	
	buccal mucosa & Tongue	14	0	14	
		31.10%	0.00%	31.10%	
	Buccal mucosa & gingiva	4	0	4	
		8.90%	0.00%	8.90%	
Buccal mucosa & Floor of the mouth	2	0	2		
	4.40%	0.00%	4.40%		
Buccal mucosa, Tongue & Gingiva	2	0	2		
	4.40%	0.00%	4.40%		
Side	Bilateral	23	0	23	0.096
		51.10%	0.00%	51.10%	
	Left side	7	3	10	
		15.60%	6.70%	22.20%	
Right side	11	1	12		
	24.40%	2.20%	26.70%		
Smoker	no	33	2	35	0.162
		73.30%	4.40%	77.80%	
yes	8	2	10		
	17.80%	4.40%	22.20%		
Symptoms	Painful	23	2	25	0.815
		51.10%	4.40%	55.60%	
	Asymptomatic	18	2	20	
40.00%		4.40%	44.40%		
Healthy patients		35	4	39	
		77.80%	8.90%	86.70%	

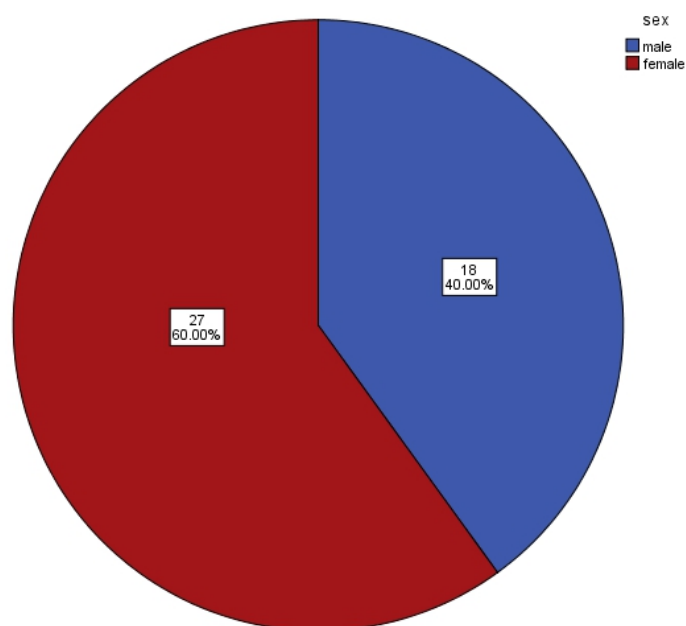


Figure 1: Sex distribution in the study.

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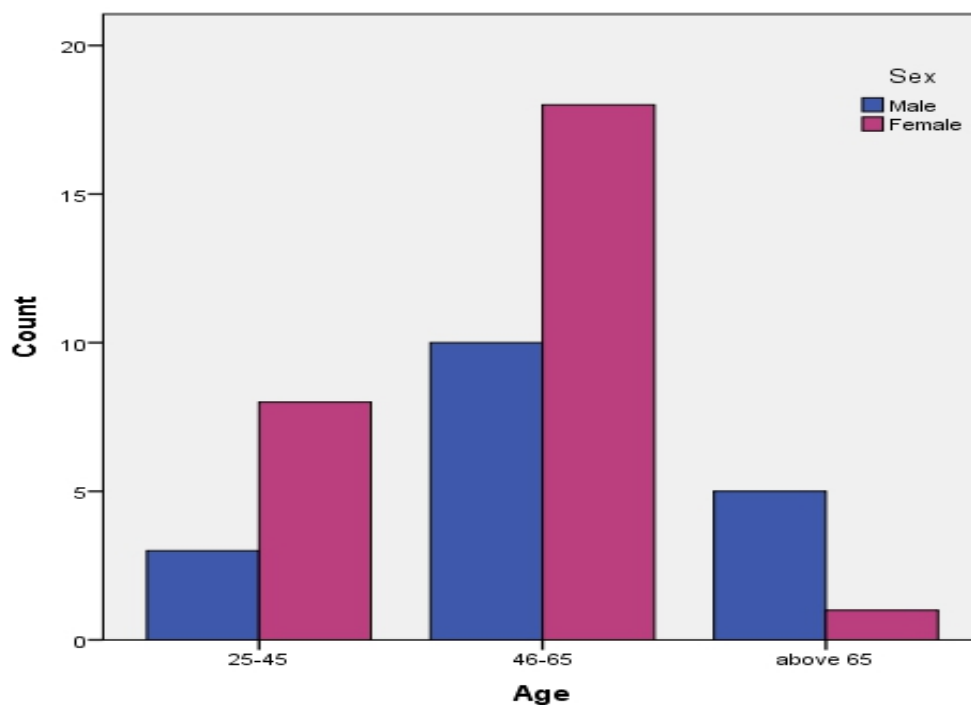


Figure 2: Age groups concerning sex.

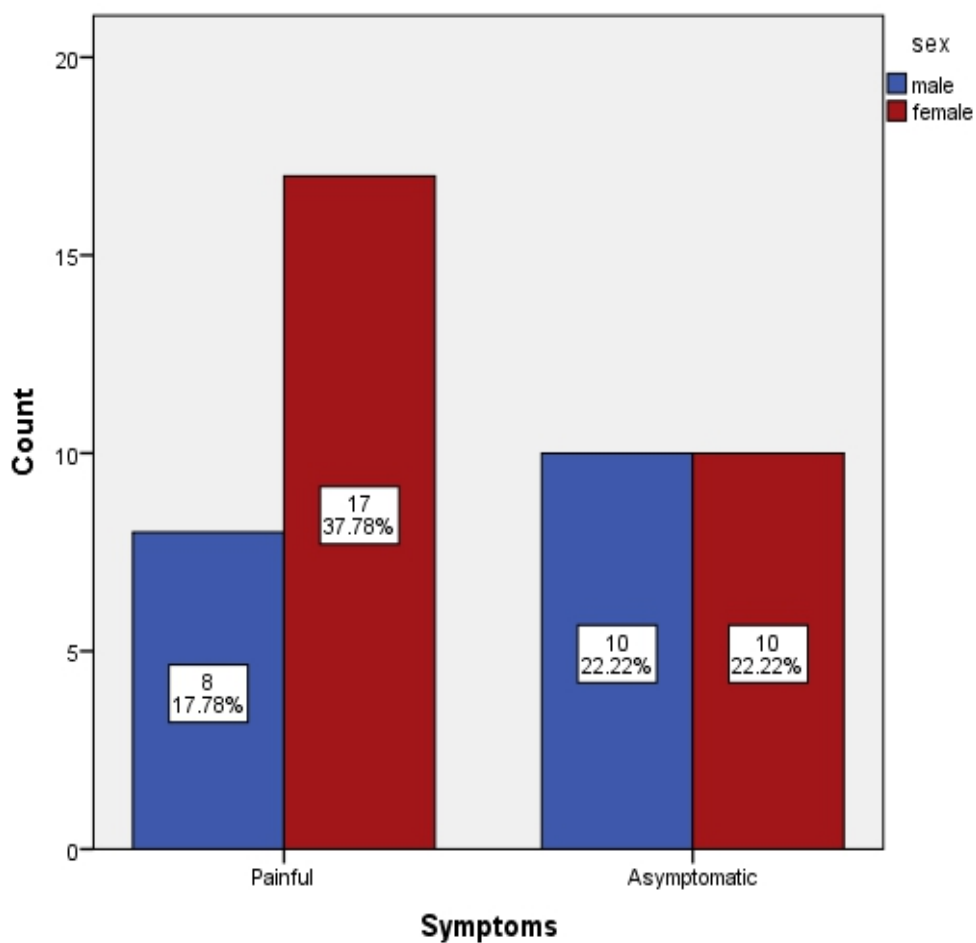


Figure 3: Distribution of symptoms in sex.

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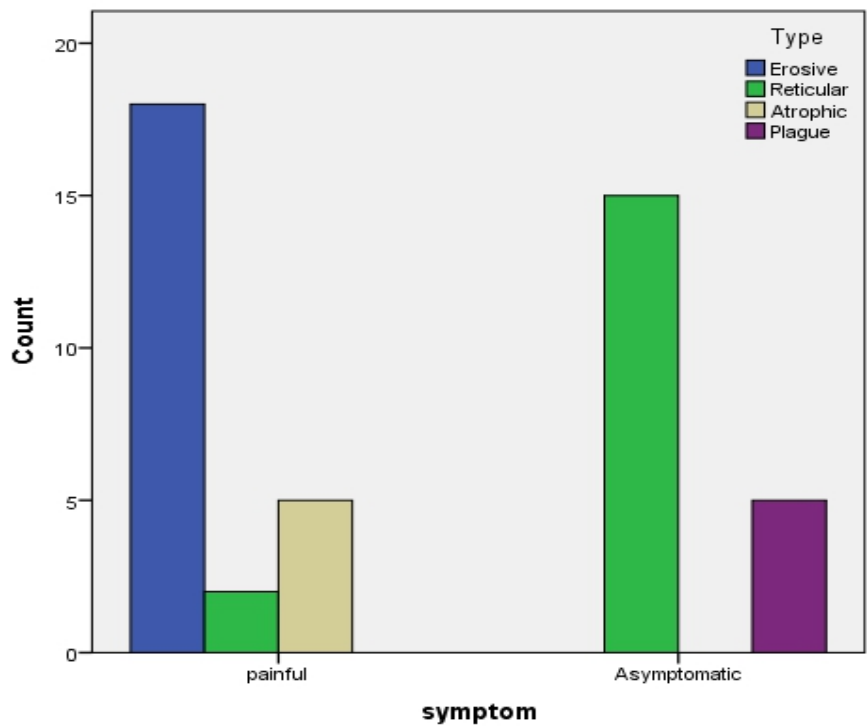


Figure 4: Symptoms concerning the types of OLP.

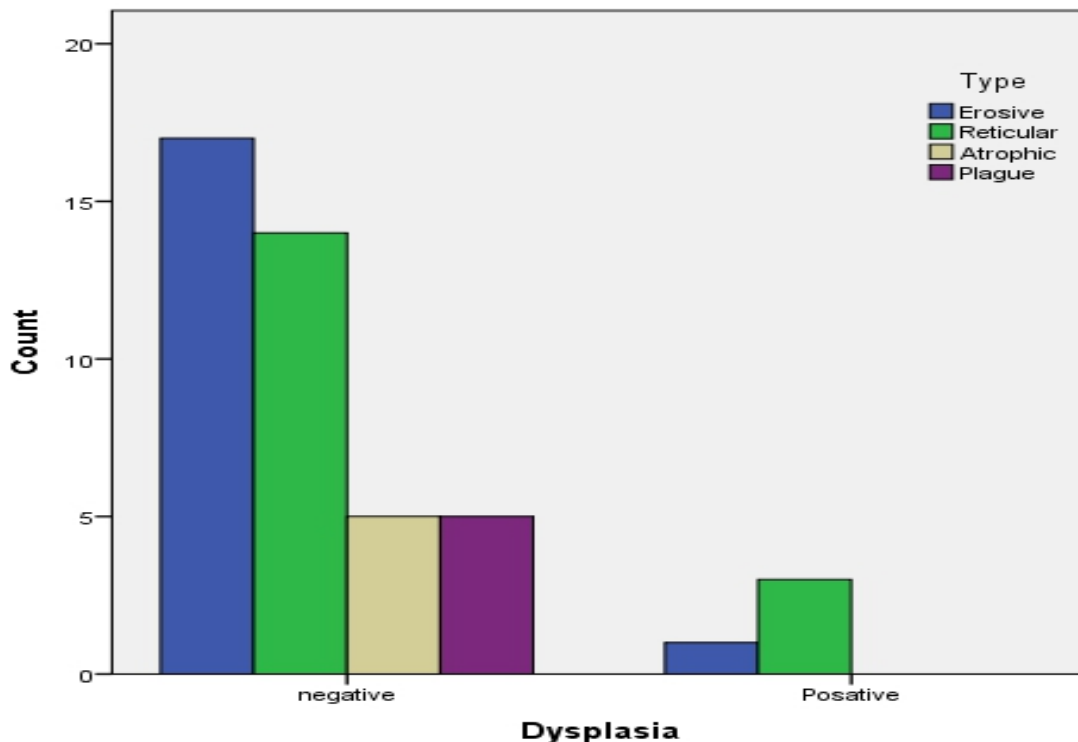


Figure 5: Dysplasia concerning the types of OLP.

DISCUSSION

The present study involved 45 OLP patients diagnosed based on both clinical and histopathological criteria. In the current examination, The predominance of OLP in female patients 27(60%) saw in the fourth to sixth decade 28(62.2%) agree with other studies reports[1,8,18-24]. Sex hormones are known to assume a

role in the immune reaction of females; estrogens support the humeral insusceptibility yet differently affect cell-mediated immunity which represents the principal part in the[25]. Estrogen has appeared to adjust all subsets of T-cells that incorporate CD4+ (Th1, Th2, Th17, and Tregs) and CD8+ cells; also, estrogen advances the extension and recurrence of Treg cells, which assume a significant role

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in downregulating immune responses[25]. The relationship of stress or anxiety to the development of lichen planus is dubious, a few investigations that have applied psychological surveys regularly find expanded degrees of nervousness in these patients; in any case, numerous patients who have informed that they have lichen planus know that tension has connected to the problem[3]. Iraqi people suffered from problematic situations like a sharp ascent in neediness, poor sanitation and water supplies; around 66% of families not associated with working sewage frameworks, helpless sustenance, a decrease in instructive enrolment and participation, undesirable ways of life, significant levels of smoking, unfortunate eating routine, absence of activity, the disintegration of preventive health programs and a severe decrease in the availability and nature of health administrations, every one of these variables will expand the OLP and other oral sores in Iraq[26].

In all studies, the reticular type is more predominant than other types[1,19,21,27-33], while in this study the erosive type is 18 case (40%) while the reticular type was 17 case (37.7%), agree with[34,35], because the erosive form is symptomatic and, therefore, the patient is more likely to be referred to an academic centre for evaluation. The explanation of awkward during eating and drinking in people with erosive lichen planus identified with pain or burning sensation, especially with limits of temperature, acidic, coarse, or spicy foods which can influence any mucosal surface, including the buccal mucosa, tongue, and gums[36].

The most typical site is buccal mucosa (51.1%) as in other studies[1,18-21,36]. The buccal mucosa is non-keratinized, and there are several oral mucosal diseases of uncertain aetiology, such as recurrent aphthous stomatitis, lichen planus, and erythema multiforme, where antigens derived from the local oral flora or food have implicated as possible causes of immunologically mediated mucosal damage[37]. Similarly, the concept of a standard mucosal immune system in which antigens that penetrate the surface can transport to mucosa-associated lymphoid tissue for processing and presentation to antibody-secreting cells, raises the question of the importance of oral mucosal permeability to proteins[37]. The mechanism of mucosal damage in patients with conditions such as lichen planus and those mentioned above may involve complexing of food or bacterial-derived antigens by antibodies that would lead to activation of complement, causes chemotaxis of polymorphonuclear leukocytes and release of activated lysosomal enzymes that bring about tissue damage[38].

As had been reported in other studies[8,39], some of the patients showed multiple sites of oral involvement with OLP, shown in (Table 1).In our research, bilateral presentation of OLP 23 (51.1%) was half of the cases, the unilateral occurrence of lichen planus observed on right side 12 patients (26.7%) and 10 cases (22.2%) on left side unlike accordance with the studies done by[19,40,41].

OLP lesions are symptomatic in nearly half of the cases (55.6%), and the erosive form was the most painful lesions (40%), with a statistically significant difference. It caused pain, burning sensation and soreness in almost all of the patients agree with[1,42].

About (86.7%) of the patients in this study did not show any associated systemic illness. Diabetes mellitus most common systemic disease encountered (11.1%), this agrees with[41,43], followed by one case of female

treated by chemotherapy. No measurably marked contrasts could distinguish among OLP and diabetes; the reason may be due to small sample size. Study in 1998 proposed may be related to immunologic changes to the endocrine dysfunction in diabetes mellitus; also contributes to the development of OLP; however, this association has not proved in other investigations[44].

Some of our studied patients, 10(22.2%) reported a dominant habit of smoking, agree with[32]. The relationship of tobacco smoking with OLP not perceived, It conjectured that the warmth and irritation of smoking might exasperate indicative OLP lesions, and the risk of malignant transformation-related with tobacco use may assume a part in patients stopping tobacco use that explain the fewer smokers in patients with OLP[35]. Other study showed no statistically significant difference in clinical and pain scores between the smoker and non-smoker groups. However, there was a considerable difference immuno-expression between the smoker and the non-smoker groups, (TLR-2 and CD34) articulation in OLP which are considered as inflammatory mediators and are contributing components in the pathogenesis of oral lichen planus[45].

In our study, of 45 patients, 4 (8.9%) showed evidence of dysplasia (three females and one male) which was higher than other studies 7%[41] and 3.13%[46] reports in India, while less than study in Iran reported dysplastic changes in (10.71%) of their cases[47]. The higher rate of dysplasia could be associated with the possible more time exposure to the carcinogenic causative factors. Most of the dysplastic changes (6.7%) were associated with the reticular OLP, agree with study in the UK but with a low rate of dysplasia (1.9%)[30] and (2.9%) in the review in Switzerland[48], but disagree with other studies that reported dysplasia in the erosive OLP[2,4,8,19,21-23]. No significant degree of epithelial atypia expected in oral lichen planus, although lesions having a superimposed candidal infection may appear especially with reticular lichen planus typically produces no symptoms, in which case they may complain of a burning sensation of the oral mucosa, these cases should be reevaluated histopathologically after the candidal infection treated[3]. Moreover, this study reported that there was not a statistically significant difference between patients with dysplastic changes and gender, and the buccal mucosa is the more general site that affected with dysplastic modifications [33].

However, the long-term follow up of the disease is needed for a proper evaluation for malignant potential.

CONCLUSION

OLP is a chronic mucosal disease with diverse clinical manifestations. It affects females between the fourth and sixth decades of age. OLP mostly affects buccal mucosa, but multiple site involvement is frequent. Erosive lesions were the most frequent, followed by the reticular type. Dysplastic changes occurred mainly in the reticular form. Long -term follow up is recommended to assess the malignant potential.

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