

Prevalence of Oral Lesions in Patients with Psoriasis

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Abstract

Background: Psoriasis is a common chronic inflammatory condition that affects mainly skin and joints which has a genetic and immunological background with unknown etiology.

Objective: To determine the prevalence of oral findings and possible association with disease severity in psoriatic patients attending the Erbil Dermatology Teaching Center in Erbil city, Kurdistan Region-Iraq.

Patients and Methods: This cross-sectional study was conducted on 120 cases of psoriasis attending Erbil Dermatology Teaching Center in Erbil city, Kurdistan Region-Iraq. Psoriasis Area and Severity Index (PASI) scored was used for each patient and all participants were examined for observing oral lesions. The Statistical Package for Social Sciences (SPSS, version25) was used for analyzing the data. Chi-square test and Fisher's exact tests were applied as descriptive statistics tests. A p-value of ≤ 0.05 was considered statistically significant.

Results: Among the 120 cases, 50 cases were males and 70 were females, their mean age \pm SD was 30.24 ± 14.82 years, and the age range was 6-65 years. Oral lesions were detected in 50 (41.7%) cases, and the most common oral findings were fissured tongue 39 (32.5%) cases and geographic tongue 5 (4.2%). The Psoriasis Area and Severity Index (PASI) score for the majority of the cases were mild and the oral manifestations were strongly associated with the disease severity ($p = 0.001$).

Conclusion: Both fissured tongue and geographic tongue are the two most frequent oral findings in psoriatic patients in this study, the prevalence of these findings increased with the disease severity. Routine examinations of the oral cavity are necessary for all psoriatic patients.

Keywords: Psoriasis, oral manifestations, oral lesions, PASI score

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Introduction

Psoriasis is a common multisystemic disease that affects mainly the skin and joints. Its course is chronic and is of inflammatory, genetic, and immunological background [1,2]. The etiology of this disease is yet unknown [3, 4]. Psoriasis prevalence in the world is about 1-3%, with geographic and ethnic variations favorably affecting white people of both sexes. Common clinical features of psoriasis in the skin are erythema, desquamation, and skin surface elevation [2,5,6,7].

Although there is a lack of consensus regarding the association of oral lesions with a certain clinical type of skin psoriasis and involvement of the oral mucosa is considered to be rare [8-11]. However, some studies suggest that it is more related to pustular, plaques, and erythrodermic types of psoriasis. Oral mucosal lesions associated with psoriasis are generally divided to specific and nonspecific mucosal lesions. Among specific mucosal lesions been identified to be associated with psoriasis are white, yellowish, grey or translucent plaques, annular forms, or diffuse areas of erythema and geographic tongue [10,12].

The prevalence of fissured tongue (FT) and geographic tongue (GT) among psoriatic patients are ranging from 9.8% - 47.5% and 5.6% - 18.1% respectively [13]. Nonspecific tongue lesions have also been reported frequently in psoriatic patients [14,15]. Additionally, a study suggested that there is a positive correlation between the prevalence of oral lesions and the severity of psoriasis when assessed using the Psoriasis Area and Severity Index (PASI) [10].

The aim of this study was to identify the prevalence of oral lesions and to detect possible associations between psoriasis severity and oral lesions in patients with psoriasis who had been referred to the Erbil Dermatology Teaching Center in Erbil city, Kurdistan Region-Iraq.

Patients and Methods

A cross-sectional study conducted, including 120 psoriatic patients randomly among those who were attending the “Erbil Dermatology Teaching Center” in Erbil city, Kurdistan Region-Iraq, in the time period from July 2019 to January 2020. Patient’s data was obtained through a case sheet containing sociodemographic data, history of the disease, and clinical examination of the patient’s skin by a dermatologist and finally, the examinations of the oral cavity were carried out by an oral and maxillofacial medicine specialist. The diagnosis of psoriasis and oral conditions was mainly based on the clinical bases. Patients with a history of antibiotic intake over the last two months, regular use of antiseptic mouthwash, wearing a removable dental prosthesis, pregnancy, and history of dermatological conditions other than psoriasis were all excluded from this study. The (PASI) score was used to assess the severity of psoriasis and it was categorized as “mild” when the total score calculated was < 10 , “moderate” when the total score was within the range of 10-20 and “severe” when the total score was > 20 [16]. All clinical findings were recorded in the mentioned case sheet.

The study protocol was approved by the ethical committee of the Kurdistan Board of Medical Specialties (KBMS).

Statistical analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS, version 25). Chi-square test of association was used to compare proportions. Fisher's exact test was used when the expected count of more than 20% of the cells of the table was less than 5. A p-value of ≤ 0.05 was considered statistically significant.

Results

The study sample included 120 patients with psoriasis. Their mean age \pm SD was 30.24 ± 14.82 years. The median was 30 years, and the age range was 6-65 years. Table (1) shows that the majority of the patients are young adults aged less than 40 years. More than half (58.3%) of the sample were females. The largest proportion (37.5%) of the sample is students and 23.3% housewives. The majority (74.2%) were of moderate socioeconomic status, and more than half (53.3%) were married Table (1).

Table (1): Socio-demographic characteristics of the studied sample

	No.	(%)
Age (years)		
< 20	33	(27.5)
20-29	24	(20.0)
30-39	32	(26.7)
40-49	14	(11.7)
≥ 50	17	(14.2)
Gender		
Male	50	(41.7)
Female	70	(58.3)
Occupation		
Housewife	28	(23.3)
Student	45	(37.5)
Government employee	23	(19.2)
Private employee	21	(17.5)
Retired	3	(2.5)
Socio-economic status		
Poor	17	(14.2)
Moderate	89	(74.2)
Good	14	(11.7)
Marital status		
Married	64	(53.3)
Unmarried	56	(46.7)
Total	120	(100.0)

It was evident in Table (2) that 25% of the cases had a family history of psoriasis, and the most common types were plaque type

(51.7%), scalp (28.3%), or a combination of plaque and scalp (9.2%). The other types are rare and presented in the mentioned table.

Table (2): Family history, prevalence and types of psoriasis

	No.	(%)
Family history of psoriasis	30	(25.0)
Types of psoriasis		
Plaque type	62	(51.7)
Scalp	34	(28.3)
Plaque and scalp	11	(9.2)
Palmo-plantar	4	(3.3)
Guttate	2	(1.7)
Nail psoriasis	2	(1.7)
Plaque and joint	2	(1.7)
Plaque, scalp and joint	1	(0.8)
Scalp and joint	1	(0.8)
Plaque and nail	1	(0.8)

The prevalence of the oral manifestations in psoriatic patients was (41.7%), the most common oral manifestations was fissured tongue, which was present in around one third (32.5%) of the whole sample. The next oral manifestation in frequency was geographic tongue (4.2%). The other

manifestations (the combination of fissured tongue, geographic tongue, frictional keratosis, oral lichen planus, and ulcer) were less common and are presented in Table (3). Therefore, the percentage of oral findings was (41.7%) while (58.3%) revealed no finding.

Table (3): Prevalence and types of oral manifestations

	No.	% (n = 120)
Fissure tongue	39	(32.5)
Geographic tongue	5	(4.2)
Combination of FT and GT	2	(1.7)
Frictional keratosis	2	(1.7)
Angular Cheilitis	1	(0.8)
Traumatic ulcer	1	(0.8)
lichen planus	1	(0.8)

It is evident in Table 4 that the more severe the disease, the more the prevalence of the oral manifestations. The prevalence of oral manifestations among those with moderately

severe psoriasis is 88.9%, and it is 100% among those with severe disease ($p = 0.001$).

Table (4): Prevalence of oral manifestations by severity of psoriasis as assessed by PASI scores

Severity of psoriasis (PASI)	Oral manifestations				Total		p
	Yes		No.		No.	(%)	
	No.	(%)	No.	(%)			
Mild	40	(36.7)	69	(63.3)	109	(100.0)	
Moderate	8	(88.9)	1	(11.1)	9	(100.0)	
Severe	2	(100.0)	0	(0.0)	2	(100.0)	0.001*
Total	50	(41.7)	70	(58.3)	120	(100.0)	

*By Fisher's exact test

Discussion

The first reported case of oral manifestation of psoriasis was described by Oppenheim in 1903, but the occurrence of specific oral lesions nowadays remains rare. The controversy and variability in the clinical features of oral psoriasis making the diagnosis difficult for clinicians [8,10,17,18,19]. In addition to that, oral psoriasis may be missed by the clinicians because of the asymptomatic nature of oral lesions along with a significant increase of epithelial turnover in psoriatic plaques which may be as rapid as 3-7 days, whereas normal epithelial turnover is 28 days. That abnormal increase in turnover time is close to that of normal regenerative time of the oral epithelium [14].

The current study could not find any true white, yellow, or grey lesions of psoriasis, however none specific oral lesions were present in 41.7% of the cases, which was similar to the results of Darwazeh et al, and Daneshpazhooh et al, but lower than those reported by Ehsani et al, and Costa et al [8,10,20,21]. The most significant oral findings in this study were fissured tongue and geographic tongue.

The fissured tongue is also known as lingual plicata, scrotal tongue, and grooved tongue is a mostly asymptomatic condition characterized by grooves and fissures of varying depth on the dorsal surface of the tongue. Reports estimated a prevalence of about 10-20% of the population to have a fissured tongue. Most authors believe it to be an inherited trait, and it has been associated with insulin-dependent diabetes mellitus,

Down's syndrome, and the Melkersson-Rosenthal syndrome [10,22,23,24].

In the present study, the most common oral finding of psoriatic patients was fissured tongue, accounting approximately for one-third of the study group (32.5%), consistent with recent studies published. Taleae et al and Ehsani et al found fissured tongue in 28.2% and 35% of psoriatic patients in two different cross-sectional studies [21,25]. On the other hand, a number of recent case-controlled studies showed various reports of fissured tongue between 9.8-47.5% in psoriatic patients compared to 9.5-20% of controlled groups [9,10,13,20,26].

Geographic tongue or benign migratory glossitis is an immune-mediated chronic condition of unknown etiology. Its incidence is 1-3% of the general population [27,28]. Development of red patches with elevated white or yellow serpiginous margins is the characteristic features of this condition. A number of systemic conditions have been associated with GT including anemia, diabetes mellitus, hormonal disturbances, stress, Down's syndrome, and psoriasis. Lesions resembling GT could be seen in Reiter's syndrome [10,27,29].

According to the current study GT is the second most common finding but less frequent than FT in a rate of 4.2%, compatible with other studies, Talee et al, Singh et al, and Ehsani et al were reported 4.5%, 5.6%, and 6% respectively in three different studies [15,21,25]. On the contrary, other studies observed a higher rate of this finding ranging from 12-18% [8,10,13,20,30]. This could be due to the fact

that the majority of our participants were suffering from a mild form of psoriasis, as it has been suggested by Daneshpazhooh et al that the incidence of GT has increased with the severity of psoriasis [10].

The study also reveals that the prevalence of oral manifestations was significantly increased with the severity of psoriasis, 88.9% of the moderate cases had oral findings, and it was 100% among those with severe disease ($p = 0.001$). Although the majority of our psoriatic patients had a mild form of psoriasis, likewise Daneshpazhooh et al., also found a strong correlation between oral findings (FT and GT) and severity of psoriasis [10]. Therefore, oral findings could be used as a predictor for the severity of psoriasis.

Conclusions

Generally, oral manifestations among psoriatic patients of the current study sample were present in 41.7% of patients. Fissured tongue (32.5%) and geographic tongue (4.2%) were the two common oral manifestations among psoriatic patients in our study. The psoriasis severity was significantly associated with the presentation of oral lesions ($p=0.001$).

Recommendations

Both dental practitioners and dermatologists should be familiar with these findings and thorough intra-oral and extra-oral examinations were necessary for psoriatic patients. Because the study period allowed for us is limited, we suggest doing a multicenter study to observe more patients and have better results. Whether these lesions could be used as a marker of the disease

severity or not requires further studies including larger size and control groups.

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Conflict of Interest

No conflicts of interest

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