

Prevalence of Recurrent Aphthous Ulceration in the Diyala Population

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Abstract

Background: Recurrent aphthous stomatitis (RAS) are an inflammatory condition and most the common ulceration of the oral cavity of the patients that make them to ask dental practitioner consultation. most ulcers are associated with pain and heals spontaneously for some days.

Objective: To calculate the prevalence of this type of ulcers in diyala governorate among males and females and its association with stress and evaluate the independent issues correlated to this oral mucosal state.

Patients and Methods: A total of 80 patients who attended to the Baquba teaching hospital from April 2016 - April 2017 and fill the required questioner of this study which including age, gender, site, size of ulcer, stressed condition and smoking status in addition to other questions.

Results: The prevalence of RAS was 17.4%, the third decade of life were the most affected age. Males were affected more than females and the tongue were the most affected sites represents (25 %) of the cases. stress was the most causative factors of this lesions.

Conclusion: In diyala governorate, the Aphthus lesion is the main features of stress among males.

Keywords: Aphthus, Stress, Diyala.

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Introduction

Recurrent aphthous stomatitis (RAS) is an inflammatory condition, which is characterized by recurrent painful, single or multiple ulcers, appearing in the oral mucosa [8]. The prevalence of recurrent aphthous ulceration was reported to be 40% in a sample of children of the United States [14]. Aphthous ulcers were reported to vary from 5 to 66% among different nations [10] [2] and some reports showed up to 60% only of populations depending on several ethnic and socioeconomic states [5]. The term

“aphthous” is derived from a Greek word “aphthae” which means ulceration [9].

Clinically, the recurrent aphthous ulceration present as multiple, small, round, or ovoid ulcers, with circumscribed margins, covered by a yellowish or gray-white fibrinous exudate and surrounded by an erythematous halo, and present first in childhood or adolescence [6]. The pain associated with lesions of ulcer may be sever or moderate depend on several causes like pain threshold of case, and this lesion heals

with in 10-14 days in several types and some others resolved with in more than 2 weeks and addition to that they occur once a year or recurrent more than one in the same year [7].

Regarding the etiology of recurrent Aphthous lesion , several suspected causes have been reviewed in the literatures including genetic and environmental factors such as : stress , trauma , infections , genetic predisposition factors , allergic reactions and nutritional causes and all these illustrated factors and others has not been validated and approved specifically [9], additionally they still affecting the function and cause discomfort to the patients and have negative impact on the oral cavity regardless to the original cause , they act to decrease the quality of life and know , it is important to determine the prevalence of such condition in general populations[4][11].

In diyala governorate, still to date no previous study have been done act to evaluate the prevalence of RAS in the population. This study was planned to estimate and find the occurrence of RAS among Diyala civilians and evaluate the independent issues correlated to this oral mucosal state.

Patients and Methods

The study was designed and prepared in Diyala governorate particularly in the Baquba teaching general hospital / Consultancy clinics / Dental Clinic, the study done and samples collected throughout April 2016 - April 2017. 80 patients attended the clinic with various complaints were examined suffering from oral pain and

lesions, all required Ethical clearance from the Hospital and Consultancy clinics / Dental Clinic was obtained, full written information points from the patients taken. Any patients with suspected malignancy or other systemic conditions with ulcers were based on clinical examinations have been excluded from this study. The clinical examination of the oral cavity was done following the WHO guidelines [7], under artificial illumination on a dental chair, using a mouth mirror. The aphthous included the minor, major and herpiform types, which are characterized by recurrence. A detailed family and medical history and history in relation with any habits of tobacco/smoking/alcohol was recorded. Medical history included any systemic disease, association of ulcers with menstrual cycle, any medication, and any associated ulcers involving organs like skin, vagina, eye or joints. The patients were asked if any treatment was taken to treat the condition or relieve the symptoms or pain. Patients were also enquired about other independent factors related to the condition. For all patients, Lymph nodes were examined, hematological investigations that included Full blood count, blood film, erythrocyte sedimentation rate (ESR), Rheumatoid factor, serum folate, vitamin B12 and ferritin levels, were advised.

Statistical analysis

The observations were entered and analyzed using IBMSPSS version 23 computer software (IBM Statistical Package for Social Sciences) in association with Microsoft Excel.

Results

In this study only 80 of totally 458 cases found with RAS at time of diagnosis, this make the over all prevalence 17.4%. The third decade of age group were the most affected age for this lesion and represents 46.3%, while the less one was the fifth age group Table (1). regarding the gender, males were 53 (66.3%) cases more than females 27(33.8%) with statistically significant ($p < 0.05$) Table (2). For the other related factors, stress was found as the most common cause related to RAS and affect 52(65%) cases of the study samples with statistically

significant correlation ($p = 0.007$) Table(3). Regarding the smoking, 31(38.8%) of the cases were smokers with significant correlation with aphthous lesions ($P = 0.04$) Table (4). In the aspect of presence of pain, 63(78.8%) cases attending to the clinic with pain while 17(21.3%) of the cases without symptoms of pain Table (5). Regarding the size of the lesions 70(87.5%) of them were less than 1 cm and the rest were more , tongue was the most affected site in this study with 20(25 %) cases Table (6).

Table (1): Case distribution of Aphthous lesion according to age groups and their relation.

Site Age	Tongue	Lower Lip	Upper Lip	Buccal mucosa	Floor of the mouth	Labial Mucosa	total	P-value
≤ 20	(5) 6.3%	(1) 1.3%	(1) 1.3%	(1) 1.3%	(0) 0.0%	(3) 3.8%	(11) 13.8 %	0.001
20 -29	(8) 10%	(9) 11.3	(5) 6.3%	(6) 7.5%	(5) 6.3%	(4) 5%	(37) 46.3%	
30-39	(7) 8.8	(8) 10%	(3) 3.8%	(0) 0%	(6) 7.5%	(0) 0%	(24) 30%	
≥ 40	(0) 0%	(3) 3.8%	(2) 2.5	(0) 0%	(3) 3.8%	(0) 0%	(8) 10%	
Total	(20) 25 %	(21) 26.1 %	(11) 13.8 %	(7) 8.8%	(14) 17.5%	(7) 8.8%	(80) 100 %	

Table (2): Case distribution of Aphthous lesion according to Gender groups and their relation.

Site Gender	Tongue	Lower Lip	Upper Lip	Buccal mucosa	Floor of the mouth	Labial Mucosa	Total	P-value
Male	(10) 12.5 %	(15) 18.8%	(8) 10 %	(7) 8.8 %	(13) 16.3 %	(0) 0.0 %	(53) 66.3 %	0.004
Female	(10) 12.5 %	(6) 7.5 %	(3) 3.8 %	(0) 0.0 %	(1) 1.3 %	(7) 8.8 %	(27) 33.8%	
Total	(20) 25 %	(21) 26.1%	(11) 13.8 %	(7) 8.8%	(14) 17.5 %	(7) 8.8%	(80) 100 %	

Table (3): Case distribution of Aphthous lesions and the relation to stress.

Site stress	Tongue	Lower Lip	Upper Lip	Buccal mucosa	Floor of the mouth	Labial Mucosa	Total	P-value
Yes	(11)13.8 %	(12)15%	(7)8.8 %	(4)5 %	(11)13.8%	(7)8.8%	(52) 65%	0.007
No	(8)10 %	(10)12.5%	(4) 5 %	(3)3.8 %	(3)3.8%	(0)0.0 %	(28) 35%	
Total	(20) 25 %	(21)26.1%	(11)13.8 %	(7) 8.8%	(14) 17.5 %	(7) 8.8%	(80) 100 %	

Table (4): The relation between Aphthous lesions and Smoking.

Site smoker	Tongue	Lower Lip	Upper Lip	Buccal mucosa	Floor of the mouth	Labial Mucosa	Total	P-value
Yes	(3)3.8 %	(9)11.3 %	(5)6.3 %	(6)7.5 %	(8)10%	(0) 0.0 %	(31) 38.8 %	0.044
No	(17)21.3 %	(12)15 %	(6)7.5 %	(1)1.3 %	(6)7.5%	(7)8.8 %	(49) 61.3 %	
Total	(20) 25 %	(21)26.1%	(11)13.8%	(7) 8.8%	(14) 17.5%	(7) 8.8%	(80) 100%	

Table (5): The relation between Aphthous lesions and presence of pain.

Site pain	Tongue	Lower Lip	Upper Lip	Buccal mucosa	Floor of the mouth	Labial Mucosa	Total	P-value
Yes	(18)22.5%	(16)20 %	(7)8.8 %	(4)5 %	(13)16.3%	(5)6.3 %	(63)78.8%	0.001
No	(2)2.5 %	(5)6.3 %	(4)5 %	(3)3.8%	(1)1.3 %	(2)2.5 %	(17)21.3%	
Total	(20) 25%	(21)26.1%	(11)13.8%	(7) 8.8%	(14) 17.5%	(7) 8.8%	(80) 100%	

Table (6): The relation between Aphthous lesions and size of the lesions.

Site size	Tongue	Lower Lip	Upper Lip	Buccal mucosa	Floor of the mouth	Labial Mucosa	Total	P-value
> 1 cm	(7)8.8 %	(1)1.3 %	(2)2.5 %	0.0 %	0.0 %	0.0 %	(10)12.5	0.001
< 1 cm	(13)16.3%	(20)25 %	(9)11.3 %	(7)8.8 %	(14)17.5%	(7)8.8 %	(70)87.5	
Total	(20) 25 %	(21)26.1%	(11)13.8%	(7) 8.8%	(14) 17.5%	(7) 8.8%	(80) 100%	

Discussion

The ulceration of the oral mucosa causes a lot of pain in many people specially with function and during mastication [9], RAS considered the most type of ulcerations affecting oral mucosa [1]. previous

researched showed that females were the mostly affecting by this ulcers [11]. The history that taken from the patients in addition to the clinical examinations were the best way to confirm the diagnosis of the

patients. They are usually painful, shallow, round ulcers with an erythematous halo covered by a yellowish-gray fibromembranous layer and not need treatment, some of the cases used topical corticosteroid to decrease the pain and facilitate healing.

A diagnosis of RAS depends mainly on history and clinical examination. It occurs in the non keratinized areas such as lips, tongue, buccal mucosa, and soft palate. They are usually painful, shallow, round ulcers with an erythematous halo covered by a yellowish-gray fibromembranous layer. Patients with mild recurrent aphthous ulceration usually do not require any treatment for the lesion. However, topical corticosteroids therapy may be used to reduce the frequency and severity of attacks [11] [13].

To the best of our knowledge, to date, no previous study in Diyala governorate conducted the prevalence of RAS and its etiology among populations, on other hands, different epidemiological studies performed in several countries in the last years to explain the prevalence of RAS among different regions throughout the world. The prevalence range among differing populations has been documented as 0.5%–66% [3].

In this study the prevalence of RAS was 17.4% and this disagree with other regions like those reported in Iran (25.2%), in Turkey (25.5%), and in Sweden (17.7%) in which the level was more than in our study [11], such results may be due to the different

associated factors like genetic factors, socioeconomic level, life style of individuals of this Diyala region. Regarding the age of the cases, the third age group were the most affected age and the prevalence decreased as the age increased. This result in line with the findings of Davatchi et al. in 1998 and Patil *et al.* in 2014, the highest incidence was in the third decade of age and this study show decrease as the age increase.

From the aspect of gender, males were more than females and represent 66.3% with significant relation with lesion occurrence, such results may be referred to the oral hygiene associated with cases in which, males usually had bad oral hygiene more than females.

The important points that, most researches explain the relation of stress with RAS [9], this study showed that stress affected 52(65%) cases of the study samples with statistically significant correlation ($p=0.007$) and this was in line with Safadi in 2009, who found that stress was presented with most of the cases. Such results explain that the stress may have a main role in the immune system with may affected and increase the incidence of RAS an addition to that, more study samples may need to confirm this results. On other hand, the other point, smoking patients that showed less in number than with non smoking regarding the presence of RAS, and such results may be due to thick mucosa and no study before in Diyala to compare the result with.

Pain still the main reason that make patient to ask for treatment, this study showed that

[63]78.8% of the patient attended to the hospital and clinics to relief pain associated with lesion in spite of the presence of treatment which was corticosteroid, but pain still important point that should be focused on. The size of 70(87.5%) of the cases were less than 1 cm, and these agree with Safadi in 2009. The point of size refers to the severity of the damaged area and if so much large lesion, this may lead to scar formation in some cases, I addition to more function disability.

In our study, among 80 patients, 20 (25 %) patients were affected by RAS on tongue, 21 (26.1%) patients on lower lip, and 13 patients (13.8%) were affected on upper lip. The results of our study were in opposite line with studies conducted by Safadi in Jordanian dental patients, which revealed that lips and buccal mucosa were the most common sites of ulcerations (55%), whereas gingiva or tongue was affected in one-fifth of the patients. Floor of the mouth was the least affected site by recurrent aphthous ulceration (8%) [12].

Conclusion

Based on the results of our study, the prevalence of RAS in Diyala population was 17.4%. Males were more commonly affected than females, and the most common age group affected in our study was the third decades. The most common site was tongue mucosa followed by labial mucosa and tongue.

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