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Prevalence of oral mucosal lesions in patients attending college of dentistry – Basrah University

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Abstract

Background: The aim of study was to find out the prevalence of oral mucosal lesions in patients who are attending the oral diagnosis department of the College of Dentistry – Basrah University and compare it with the prevalence rates of these lesions in other parts of Iraq.

Materials and Method: Oral examination of 2318 outpatients, 1202 females (51.8%) and 1116 males (48.2%). The patient's age ranged between 9-74 years. All the patients of this study referred to oral diagnosis department, College of Dentistry, Basrah University seeking for dental treatment (from October 2010-May 2011).

Results: Among the 2318 patients, only 206 patients (8.8%) had oral lesions. 115 males had oral lesion constituted 4.9% of total examined patients, while 91 females had oral lesion constituted 3.9%. The age range of the patients was between 9-74 years.

Oral lesions were more prevalent among males (4.9%) than females (3.9%), and there was significant statistical difference between males and females. Oral lesions were classified according to the following 4 categories: ulcerated lesions (3.84%), benign lesions (2.93%) ,white lesions (1.12%) and candidiasis (0.99%), The most common oral lesion of the studied populations were the ulcerated lesions, which diagnosed in (3.8%).There were a significant statistical difference between males and females in the traumatic ulcer, lichen planus, pyogenic granuloma and peripheral giant cell granuloma.

Conclusions: This study has provided information about the epidemiologic aspects of oral mucosal lesions that may prove valuable in planning of future oral health studies.

Keywords: Oral mucosal lesions, Oral diseases, prevalence.

Introduction

Diseases of the oral mucous membrane comprise one aspect of oral diseases [1] .Oral mucosal lesions pose a major challenge in oral cavity, because they are chronic, painful, and interfere with the daily activities and quality of life of the patients, including disturbing eating, drinking, talking, and personal relationships [2]

Among the broad spectrum of causes leading to changes in the oral mucosa are infections from bacteria, fungi, viruses, parasites, and other agents; physical and thermal influences, changes in the immune system, systemic diseases, neoplasia, trauma and other factors, some of which are issues of aging. [3, 4]

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Diagnosis of wide variety of lesions that occur in the oral cavity is an essential part of dental practice. An important element in establishing a diagnosis is knowledge of the lesions relative frequency, or prevalence at one point in time. [5]

These lesions may range from a single minute ulcer to large malignant lesion. Identifying the lesions at a premalignant stage and rendering treatment could prevent their malignant transformation. Studying the prevalence of oral lesions at a community level helps in understanding the magnitude of problem of particular region. [6]

Few isolated studies on the prevalence of the oral mucosal lesions in Iraq have been reported. No epidemiological studies, and no special attention has been paid to study the prevalence of oral mucosal lesion in Basrah city where the environment is completely different in regarding to the weather, habits, types of food, life style, socioeconomic level and oral hygiene.

Subjects and method

Subjects: A total of 2318 outpatients, 1202 females (51.8%) and 1116 males (48.2%) were used in this study. The patient's age range between 9-74 years. All the patients of this study referred to oral diagnosis department, College of Dentistry, Basrah University seeking for dental treatment (from October 2010-May 2011).

Methods: An interview was conducted to collect information using a questionnaire which was completed by each patient and the examiner. Both dental and general medical histories of the patients were obtained, after which a clinical examination was performed by the researcher using artificial light, mouth mirror and gauze; the diagnosis was made based on history, clinical feature and investigation, according to the WHO guidelines [7].

Some of the mucosal changes where diagnosed solely by clinical examination (e.g. traumatic ulcer, aphthous ulcer, etc.). When clinical feature were not diagnostic, a biopsy or cytology were performed to establish an accurate definite diagnosis.

Results

Among the 2318 patients, only 206 patients (8.8%) had oral lesions. 115 males had oral lesion constituted 4.9% of total examined patients, while 91 females had oral lesion constituted 3.9%. The age range of the patients was between 9-74 years.

Oral lesions were more prevalent among males (4.9%) than females (3.9%), and there was significant statistical difference between males and females as shown in table (1).

Oral lesions were classified according to the following 4 categories: ulcerated lesions (3.84%), benign lesions (2.93%) ,white lesions (1.12%) and candidiasis (0.99%),.

The most common oral lesion of the studied populations were the ulceratd lesions, which diagnosed in (3.8%) including traumatic ulcer were diagnosed in 2.02% patient in which there was a significant statistical difference between males and females ($p< 0.05$), recurrent aphthous ulcer (1.16%), recurrent herpes labials (0.60%) and only single case of herpes zoster infection (shingles) was recorded in old male forming (0.04%) of whole sample, consequently as shown in table (2).

Benign lesions were diagnosed in (2.93%) of the studied population. The most common benign lesions were Fibroma, which seen in (1.12%) of all patients. Other benign lesions include pyogenic granuloma (0.86%) in which

there was a significant statistical difference between sexes ($p< 0.01$), mucoceles (0.51%), peripheral giant cell granuloma (0.17%) in which there was a significant statistical difference between sexes ($p< 0.05$), mucous retention cyst (0.17%) and squamous cell papilloma (0.08%) consequently as shown in table (3).

White lesions were observed in 1.12% of all patients. The most common white lesion was Frictional keratosis which was seen in 0.77% of all patients. Other white lesions include oral lichen planus(0.25%) all lichen planus cases seen in female ,and leukoplakia (0.08%), consequently as shown in table (4).

Candidiasis was observed in 0.99% of all patients. The most common candidal infection was denture stomatitis. Denture stomatitis was seen in 0.47% of all patients. Other candidiasis includes acute pseudomembranous candidiasis (thrush) (0.21%) , angular cheilitis (0.17%),and median rhomboid glossitis (0.12%) and consequently as shown in table(5).

Discussion

Among 2318 0utpatients, 206 patients (8.8%) had one or more oral lesions, a result was comparable to that found by Jabar and Majeed [8] in Missan governorate , south of Iraq (4.6%) , Saraswathi *et al.* [9] in a cross-sectional study in south India (4.1%) .

But less than that found by Gaphor and Abdullah [10] in Sulaimani , north of Iraq (25,4%) , Cebeci et al [11] in a study of adult Turkish population (15.5%) and Rooban *et al.* [12] in Chennai, south India (25%). And extremely less than that found by Mathew et al [13] in Manipal, India (41.2%) and Garcia-pola Vallejo *et al.* [14] among an adult Spanish population (51.1%),

The result of our study was more than that found by Byakodi et al [6] in a study done in Sangli, India (2.5%).

These variations could be explained due to: Racial factor , Geographical factors, , Different of sample size, Sex distribution of the sample, Age distribution of the sample, Specific cultural habits like smoking and use of alcohol, Variation in criteria of examination , Real differences in the prevalence of oral lesions , Socioeconomic factors, Cultural levels, Medication used, Systemic diseases, use of dentures, Food type and the number and type of the lesion included in the study,

Oral mucosal lesions were slightly more prevalent among males (4.9%) than in females (3.9%). This is in agreement with the finding of Gaphor and Abdullah [10] in Sulaimani , north of Iraq , Pentenero *et al.* [15] in Turin area but disagrees with the finding by Jabar and Majeed [8]in Missan governorate , south of Iraq and Al-mobeeriek and Aldosari [16] among Saudi dental patients in which oral lesions where more prevalent in females than in males.

Ulcerative lesions were diagnosed in 3.8% of the studied populations which was similar to that found by Gaphor and Abdullah [10] in Sulaimani , north of Iraq (3.1%) ,But less than that found by Cebeci et al [11] in a study of adult Turkish population (6.6%).

Traumatic ulcer was seen in 2.02%. This prevalence is comparable to the finding by Mathew *et al.* [13] in India (1%), and more than that found by Gaphor and Abdullah [10] in Sulaimani , north of Iraq (0.6%). Traumatic ulcer was more prevalent in males (1.5%) than in females (0.51%).

Recurrent aphthous stomatitis was seen in 1.16%. This is comparable to the finding by Jabar and Majeed [8]in Missan governorate , south of Iraq (0.9%) , Gaphor and Abdullah (10) in

Sulaimani , north of Iraq (1.6%), by Espinoza *et al.* [17] in Santiago, Chile (1.4%),Shulman [18] in the USA (1.64%) and Mathew *et al.* [13]in India (2.1%). Recurrent aphthous stomatitis was more prevalent in females (0.6%) than in males (0.4%). Similar finding has been reported by , Gaphor and Abdullah [10] in Sulaimani , north of Iraq , Lin *et al.* (19) in adult Chinese, and disagrees with the finding of Mathew *et al.* [13] in which RAS was more frequent in males (2.27%) than in females (1.8%).

Recurrent herpes labialis (RHL), diagnosed in 0.60% of the studied sample This is comparable to the finding by Gaphor and Abdullah [10] in Sulaimani , north of Iraq was observed in 0.69% , Jabar and Majeed [8] in Missan governorate , south of Iraq (0.9%) and Mathew *et al.* [13] in India (0.58%) .

The higher prevalence of recurrent herpes labialis infection were seen among males in which (0.34%) than females (0.25%), this in agreement with the finding of Jabar and Majeed (8)in Missan governorate , south of Iraq and disagree with that found by Gaphor and Abdullah [10] in Sulaimani and Mathew *et al.* [13].

Benign lesions were diagnosed in 2.9% of the studied population; this is comparable to the finding by Cebeci *et al.* [11] in Turkish population (1.6%).

Fibroma was seen in 1.12%. This is comparable to the finding by Mathew *et al.* [13] (0.84%), and more than that found by Gaphor and Abdullah [10] in Sulaimani (0.38%), But less than that found by Espinoza *et al.* [17] in Santiago, Chile (9.4%). Fibroma was more prevalent in males (0.6%) than in females (0.5%) this in agreement with the finding of Cebeci et al [11] in a study of adult Turkish population.

Pyogenic granuloma were diagnosed in 0.86% of studied sample and this is comparable to that found by Espinoza *et al.* [17] in Santiago, Chile (0.7%) and Mujica et al [20] in an elderly venezuelan population (1%).

Peripheral giant cell granuloma (PGCG) was diagnosed in 0.17%. This is comparable to the finding by by Gaphor and Abdullah [10] in Sulaimani (0.06%), Chen *et al.* [21] among a population from southern Taiwan (0.1%) .

Mucoceles was observed in 0.51% of the studied population. This is comparable to the finding by Espinoza *et al.* [17] in Santiago, Chile (0.2%).and more than that found by by Gaphor and Abdullah [10] in Sulaimani (0.03%).

Squamous cell papilloma were diagnosed in 0.08% and this comparable to that found by Cebeci *et al.* [11] in Turkish population (0.1%) and Mujica et al [20] in an elderly venezuelan population (1%).

White lesions were diagnosed in 1.12% of all patients, this is comparable to that found by Cebeci *et al.* [11] in Turkey (2.2%)

Frictional keratosis was seen in 0.77% of all patients. This is comparable to the finding of Gaphor and Abdullah [10] in Sulaimani (0.82%), Almobeeriek and Aldosari [16] in Saudi arabia (0.90%), but lowers than that found by Espinoza *et al.* [17] in Santiago, Chile (6%) and Garcia-pola Vallejo *et al.* [14] in an adult Spanish population (7.5%). Frictional keratosis was more prevalent in males (0.56%) than in females (0.21%). this is in agreement with the finding of Gaphor and Abdullah [10] in Sulaimani , Mathew *et al.* [13] in southern India and Al-mobeeriek and Aldosari [16].

Oral lichen planus was seen in 0.25% of all patients.This is similar to that found by Gaphor and Abdullah [10] in Sulaimani (0.25%) and comparable to the finding by Jabar and Majeed (8)in Missan (0.12%) ,Saraswathi *et al.* [9] (0.15%), and Al-mobeeriek and Aldosari [16] (0.35%). But lower than

that found by Mujica et al [20] in an elderly venezuelan population (1%), Mathew *et al*. [13] in southern India (1.26%) and Espinoza *et al.* [17] in Santiago, Chile (2.1%). The high prevalence of oral lichen planus among females than males is in agreement with the finding of Gaphor and Abdullah in Sulaimani, Martinez and Garcia pola [22] , Mathew *et al.* [13] and Cebeci *et al.* [11] in Turkey (0.4%).

Leukoplakia was seen in 0.08%. This is similar to that found by Gaphor and Abdullah (10) in Sulaimani (0.09%) comparable to the finding by Jabar and Majeed [8]in Missan (0.01%). But lower than that of several other studies done by Mathew *et al*. [13] south India (1.26%), Espinoza *et al.* [17] in Santiago, Chile (1.7%) , Mujica et al [20] in an elderly venezuelan population (13%).

Leukoplakia was found only in males (0.09%) however, sex difference was not statistically significant which is in agreement with the finding of by Gaphor and Abdullah [10] in Sulaimani and Lapthanasupkul *et al.* [23] in a Thai population.

Candidiasis was diagnosed in 0.9% of all patients. This prevalence is comparable to the finding by Gaphor and Abdullah [10] in Sulaimani (1.3%)

Denture stomatitis was seen in 0.47%. This is comparable to the finding by Jabar and Majeed [8]in Missan (0.36%) ,Gaphor and Abdullah [10] in Sulaimani (0.73%) and Mathew *et al.* [13] in south of India (0.84%) But lower than that found by Espinoza *et al.* [17] in Santiago, Chile (22.3%). Denture stomatitis was more common among males (0.34%) than in females (0.12%) This is disagreement with the finding of Gaphor and Abdullah [10] in Sulaimani and Mathew *et al.* [13] in south of India.

Pseudomembranous Candidiasis (oral thrush) were seen in 0.21% of the patients , this is comparable to that found by Jabar and Majeed [8]in Missan (0.19%) , Cebeci *et al.* [11] in Turkey (0.2%) and Mujica et al [20] in an elderly venezuelan population (0.5%).But lower than that found by Mathew *et al*. [13] south India (3.07%).

Angular cheilitis was observed in 0.17% of all patients. This prevalence is comparable to that found by study Gaphor and Abdullah [10] in Sulaimani (0.28%) and Mathew *et al*. [13] south India (0.58%). But it is lower than that of several other studies done by Espinoza *et al.* [17] in an elderly people in Santiago, Chile (2.9%) and Mujica et al [20] in an elderly venezuelan population (5%).

Median rhomboid glossitis was seen in 0.12%. This prevalence is comparable to the finding by Gaphor and Abdullah [10] in Sulaimani (0.25%) , Mojarrad and Vaziri [24] in Hamadan, Iran (0.2%), but lowers than that found by Mathew *et al.* [13] (1.5%). The higher prevalence of median rhomboid glossitis among males is in agreement with the finding of Gaphor and Abdullah [10] in Sulaimani and Mathew *et al.* [13].

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Table (1) Number, percentage and statistical difference of examined and affected males and females.

X^2	sex						affected	Patients
	Total 2318		Female 1202		Male 1116			
	%	No.	%	No.	%	No.		
$X^2 = 5.34$	8.88	206	7.57	91	10.304	115	Yes	Examined
$p < 0.05$	91.11	2112	92.42	1111	89.69	1001	No	
d.f = 1	100	2318	51.85	1202	48.14	1116	total	

Table (2) Distribution of ulcerative lesions prevalence according to patient's sex

X^2	sex						affected	Ulcerative Lesion
	Total 2318		Female 1202		Male 1116			
	%	No.	%	No.	%	No.		
$X^2 = 13.3145$	2.02	47	0.51	12	1.50	35	Yes	Traumatic ulcer
$P < 0.05$	97.97	2271	51.33	1190	46.63	1081	No	
d.f. = 1	100	2318	51.85	1202	48.14	1116	total	
NS	1.16	27	0.69	16	0.47	11	Yes	Recu. Aph. Ulcer
	98.88	2291	51.25	1186	47.67	1105	No	
	100	2318	51.85	1202	48.14	1116	total	
NS	0.60	14	0.25	6	0.34	8	Yes	Herpes Labialis
	99.39	2304	51.59	1196	47.79	1108	No	
	100	2318	51.58	1202	48.14	1116	total	
NS	0.04	1	0	0	0.04	1	Yes	Herpes zoster
	99.95	2317	51.85	1202	48.10	1115	No	
	100	2318	51.85	1202	48.14	1116	total	

Table (3) Distribution of benign lesions prevalence according to patient's sex

X^2	sex						affected	Benign lesion
	Total 2318		Female 1202		Male 1116			
	%	No.	%	No.	%	No.		
NS	1.12	26	0.51	12	0.06	14	Yes	fibroma
	98.87	2292	51.33	1190	47.54	1102	No	
	100	2318	51.85	1202	48.14	1116	total	
$X^2 = 6.401$	0.86	20	0.69	16	0.17	4	Yes	Pyogenic granu.
$P < 0.01$	99.13	2298	51.16	1186	47.97	1112	No	
d.f. = 1	100	2318	51.85	1202	48.14	1116	Total	
NS	0.51	12	0.21	5	0.30	7	Yes	mucocele
	99.48	2306	51.63	1197	47.84	1109	No	
	100	2318	51.85	1202	48.14	1116	total	
$X^2 = 3.720$	0.17	4	0.17	4	0	0	Yes	Peri. Gai. Cell gra.
$P < 0.05$	99.82	2314	51.68	1198	48.14	1116	No	
d.f. = 1	100	2318	51.85	1202	48.14	1116	total	
NS	0.17	4	0.08	2	0.08	2	Yes	Mucous Ret. cyst
	99.82	2314	51.76	1200	48.05	1114	No	
	100	2318	51.85	1202	48.14	1116	total	
NS	0.08	2	0.08	2	0	0	Yes	Sq. cell papiloma
	99.91	2316	51.76	1200	48.14	1116	No	
	100	2318	51.85	1202	48.14	1116	total	

Table (4) Distribution of white lesions prevalence according to patient's sex

X^2	sex						affected	White lesion
	Total 2318		Female 1202		Male 1116			
	%	No.	%	No.	%	No.		
NS	0.77	18	0.21	5	0.56	13	Yes	Frictional keratosis
	99.22	2300	51.63	1197	47.58	1103	No	
	100	2318	51.85	1202	48.14	1116	total	
$X^2 = 5.5851$ P < 0.05 D.F. = 1	0.25	6	0.25	6	0	0	Yes	Lichen planus
	99.74	2312	51.59	1196	48.14	1116	No	
	100	2318	51.85	1202	48.14	1116	total	
NS	0.08	2	0	0	0.08	2	Yes	Leukopla.
	99.91	2316	51.85	1202	48.05	1114	No	
	100	2318	51.85	1202	48.14	1116	total	

Table (5) distribution of candidiasis prevalence according to the patient's sex

X^2	sex						affected	Candidal infection
	Total 2318		Female 1202		Male 1116			
	%	No.	%	No.	%	No.		
NS	0.47	11	0.12	3	0.34	8	Yes	Denture Stoma.
	99.52	2307	51.72	1199	47.79	1108	No	
	100	2318	51.85	1202	48.14	1116	total	
NS	0.21	5	0.04	1	0.17	4	Yes	Pseudo. Candid.
	99.82	2313	51.81	1201	47.97	1112	No	
	100	2318	51.85	1202	48.14	1116	total	
NS	0.17	4	0.08	2	0.08	2	Yes	Angular Chelitis
	99.82	2314	51.76	1200	48.05	1114	No	
	100	2318	51.85	1202	48.14	1116	total	
NS	0.12	3	0	0	0.12	3	Yes	Median Rho. Glo.
	99.87	2315	51.85	1202	48.01	1113	No	
	100	2318	51.85	1202	48.14	1116	total	