Assessment of Occurrence of RAS in Children and its Association with Oral Hygiene

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Abstract

Objective: To assessing occurrence of minor recurrent aphthous stomatitis (RAS) in children and its association with oral hygiene.

Materials and Method: The present study was conducted on 428 school children of age ranged 6- 13 years of both genders. Complete oral examination for assessment of decayed teeth, missing and filled teeth and DMFT index was done. The data was analyzed using IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp with Chi square test.

Results: In 291 (67.9%) cases, type of RAS was minor, in 85 (19.8%) major and in 52 (12.1%) herpeti form. Most common factors causing RAS in children was food stuffs in 210 (49%) followed by nutritional deficiency in 166(38.7%), stress in 38 (8.8%) and other factors in 14 (3.2%) patients. 312 (72.8%) patients had dmft score >1, 97 (46.1%) patients had intolerance to milk products, 58 (27.6%) had intolerance to egg, 20 (9.52%) to fish and 35 (16.6%) had to gluten. 102 (23.8%) patients had history of coelic disease in family. The difference was significant (P< 0.05).

Conclusion: Recurrent aphthous stomatitis minor was most commonly occurring among children. Maximum number of patients had dmft score >1 and intolerance to food stuff.

Keywords: *Children, dmft, Recurrent aphthous stomatitis.*

Introduction

Recurrent Aphthous Stomatitis (RAS) is a chronic inflammatory condition characterized by multiple ulcerations in the oral cavity. It is painful condition.[1] Aphthous ulcers present as shallow ulcers usually oval or round in shape, measures less than 1 cm in size, having necrotic centres and are covered with yellow of grey pseudomembrane. Surrounding mucosa is erythematous.[2] There are 3 main types of aphthous ulcers such as recurrent aphthous major, recurrent aphthous minor and herpetiform ulceration. Fourth variety is seen associated with Behcet's syndrome. The most common site of occurrence is tongue and soft palate, buccal mucosa, floor of mouth etc.[3]

The prevalence of Recurrent Aphthous Stomatitis varies from 5%- 50% of population. It is considered to be the disease of young adults. It is seen in age group 10-30 years of both genders. A RAS minor present as 2–5 ulcers with a size < 1 cm in diameter. It lasts upto 2 weeks and disappears and heal without formation of scar.[4]

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RAS major form is quite less common than the minor type, with size >1 cm in diameter. It is evident in approximately 7% - 20% of population. It persists more than 2 weeks and can last for month. It heals itself by leaving scars.[5]

The herpetiform form manifests as pinpoint ulcers with size 0.1- 0.2 cm in maximum dimensions. It is seen in 5% - 10% of RAS cases. It occurs in clusters and number may range from 5 to 100.[6]

It is multifactorial in nature. Aetiology can be allergy, stress, trauma, anxiety, genetic predisposition and endocrine disorders. Children oral healthy can play an important role in development of RAS. Thus monitoring of children's behavioural attitudes, habits and oral hygiene practice become importance.[7] Considering this, the present study aimed in assessing occurrence of RAS in children and its association with oral hygiene.

Materials and Method

The present study was conducted in the department of Oral health, College of Applied Health Sciences in Al-Rass, Kingdom of Saudi Arabia. It comprised of 428 school children of ager ranged 6- 13 years of both genders. General information such as name, age etc. was recorded. Complete oral examination for all patients was done. It comprised of assessment of decayed teeth, missing and filled teeth and DMFT index. All were subjected to psychosocial interview and asked about their habits.

Data analysis: The obtained data was analyzed using IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp using Chi Square test, at Significance of $P < 0.05$.

Ethical aspect: Ethical approval was obtained from institute prior to the study. All parents of children were informed regarding the study and written consent was obtained.

Results

Table I shows that age group 6 years had 35 male and 32 female, 7 years had 32 male and 30 female, 8 years had 26 male and 24 female, 9 years had 27 male and 25 female, 10 years had 23 male and 21 female, 11 years had 25 male and 20 female, 12 years had 40 male and 36 female and 13 years had 12 male and 20 female.

Table II shows that in 291 (67.9%) cases, type of RAS was minor, in 85 (19.8%) major and in 52 (12.1%) herpetiform. The difference was significant ($P< 0.05$).

Table III shows that most common factors causing RAS in children was food stuffs in 210 (49%) followed by nutritional deficiency in 166(38.7%), stress in 38 (8.8%) and other factors in 14 (3.2%) patients.

Table IV shows that 312 (72.8%) patients had dmft score >1, 97 (46.1%) patients had intolerance to milk products, 58 (27.6%) had intolerance to egg, 20 (9.52%) to fish and 35 (16.6%) had to gluten. 102 (23.8%) patients had history of coelic disease in family. The difference was significant ($P< 0.05$).

Table I: Distribution of patients

Age (Years)	Male	Female	Total
6	35	32	67
7	32	30	62
8	26	24	50
9	27	25	52
10	23	21	44
11	25	20	45
12	40	36	76
13	12	20	32
Total	220	208	428

Table II: Different types of RAS in patients

Type	Number	P value
Major	85 (19.8%)	0.01
Minor	291 (67.9%)	
Herpetiform	52 (12.1%)	

Chi Square test, Significance, $P< 0.05$

Table III: Factors responsible for recurrent aphthous stomatitis in children

Type	Number	P value
Food stuff	210 (49%)	0.001
Nutritional deficiency	166(38.7%)	
Stress	38 (8.8%)	
Other factors	14 (3.2%)	

Chi Square test, Significance, $P< 0.05$

Table IV: dmft score and RAS

Parameters	Score	RAS	P value
Dmft score	0	116(27.1%)	0.01
	>1	312 (72.8%)	
Food stuff	Milk products	97 (46.1%)	0.01
	Egg	58 (27.6%)	
	Fish	20 (9.52%)	
	Gluten	35 (16.6%)	
Coelic disease in family	Yes	102 (23.8%)	0.001
	No	326(76.1%)	

Chi Square test, Significance, P< 0.05

Discussion

Recurrent aphthous stomatitis is a multifactorial disease of young adults. Among various forma, minor RAS is commonly seen in all age groups. However, the occurrence of RAS in children is not uncommon.[8] The present study aimed in assessing occurrence of RAS in children and its association with oral hygiene.

In present study we included 428 children which were found to positive for RAS of both genders. In present study, maximum patients were of age 12 years (76) of which male were 40 and female were 36. Age group 6 years had 35 male and 32 female, 7 years had 32 male and 30 female, 8 years had 26 male and 24 female, 9 years had 27 male and 25 female, 10 years had 23 male and 21 female, 11 years had 25 male and 20 female and 13 years had 12 male and 20 female.

Tecco et al[9] included 401 school-children age ranged 5–10 years old. Oral examination showed presence of RAS of minor type. There was statistically significant relation between the presence of decayed teeth and minor RAS and between the decayed missing or filled teeth (DMFT) index and minor aphthous stomatitis. Authors found no systematic association to clinical or psychological/psychosocial indices and RAS.

We found that 291 (67.9%) cases, type of RAS was minor, in 85 (19.8%) major and in 52 (12.1%) herpetiform. Tarakji et al [10] in their study found that family history play an important role in etiopathogenesis of disease.

The role of environmental risk factors in the etiology of RAS is not fully understood.[11] It is found that patients of RAS have iron, folic acid and vitamin B12 deficiency. RAS found to be associated with bacterial or viral aetiology. RAS is also seen in HIV/AIDS patients.[12]

Studies have mentioned the increased levels of salivary cortisol or of reactive oxygen species in the saliva in the disease process.[13] It is found that children under school work load stress start parafunctional habits that cause traumatic injuries to the area, resulting to an episode. Thus the role of stress can be considered in RAS. It has also been linked to immune system changes, which may partially explain the role of stress in the etiology of RAS.[14]

We found that common factors causing RAS in children was food stuffs in 210 (49%) followed by nutritional deficiency in 166(38.7%), stress in 38 (8.8%) and other factors in 14 (3.2%) patients. Table IV shows that 312 (72.8%) patients had dmft score >1, 97 (46.1%) patients had intolerance to milk products, 58 (27.6%) had intolerance to egg, 20 (9.52%) to fish and 35 (16.6%) had to gluten. The difference was significant (P< 0.05). We found recurrent aphthous stomatitis minor was most commonly occurring among children.

Quiroz et al[15] in their study assessed the cases of recurrent aphthous ulcerations on 4895 patients. There was 161 (3.3%) had objection of oral aphthous ulcerations, 76(47.2%) were identified as suffer from recurrent aphthous ulcerations. The tongue was the most affected anatomical region, with 27 individuals (39.7%), followed by the buccal mucosa, with 22 cases (32.3%).

The limitation of study is small sample size. Treatment modality of patients was not discussed. Assessment of RAS stomatitis has not been studied extensively. Large scale studies are required to substantiate the results.

Conclusion

Authors found that recurrent aphthous stomatitis minor was most commonly occurring among children. Maximum number of patients had dmft score >1 and intolerance to food stuff.

Conflict of Interest: Nil

Financial Support: Nil

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