

Prevalence and family history of recurrent aphthous stomatitis among the students of a dental institution in south India

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ABSTRACT

Background: Positive family history is reported to be associated with Recurrent Aphthous Stomatitis (RAS), but the family history of people without RAS is not reported. **Aim:** To find the details of family history of people with and without RAS. **Materials and Methods:** Data regarding the lifetime prevalence and the family history of RAS was collected from 264 female clinical students of a dental institution and analyzed for any correlation. **Results:** The self-reported lifetime prevalence of RAS was found to be 53% among the dental students of our institution. Positive family history was found in 63% of students with RAS and in 22% of the students without RAS. **Conclusions:** RAS is very common among female dental students and the positive family history is an important predisposing factor.

Key words: Aphthous stomatitis, aphthous ulcer, oral ulcer

INTRODUCTION

Recurrent Aphthous Stomatitis (RAS) is defined as recurrent episodes of oral aphthous ulceration where the ulcers heal spontaneously with subsequent recurrence.^[1] RAS is the common oral mucosal disorder affecting non-keratinized mucosa causing much pain and interference with mastication and speech. Based on the size and the number of ulcers, RAS is classified as minor, major, and herpetiform.^[2] Although the exact etiology of RAS is not clear, genetics, trauma,


vitamin deficiency, microbes, and psychological stress are cited as predisposing factors.^[3] A genetic predisposition for the aphthous ulcer is suggested as about 40% of patients having a positive family history.^[4] Many reports are available in the scientific literature about the family history of RAS among the subjects with RAS, but the family history among the subjects without RAS seems to be unexplored. Hence, this study was proposed with an objective to find the details about the family history of both the subjects with or without the RAS. Since the clinical students of a dental institution are assumed to have sufficient knowledge about the RAS, information about the family history of RAS will be reliable. Also, the participants are expected to co-operate well for this study since they are familiar with the investigating dentist.

MATERIALS AND METHODS

Questionnaire-based cross-sectional study was carried out among the 264 undergraduate female dental students of our institution in south India excluding the preclinical students, to collect the data about the life time prevalence of RAS. Most of the study participants belong to the age group of 19-23 years and all of them are hostel inmates having similar diet. The objective of this study was explained and each study

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participant was asked to find the prevalence of RAS among their parents and siblings. This family history of RAS was collected from both the group of students reported with and without the lifetime history of RAS. The data collected on paper forms was entered in a Microsoft Excel spreadsheet and analyzed for any correlation between the prevalence of RAS with family history.

RESULTS

The lifetime prevalence of RAS among the 264 dental students was found to be 53% ($n = 140$). The distribution of positive family history is provided in the Table 1. Among the 140 students with history of RAS, 63% have positive family history, whereas 124 students without the history of RAS, 22% have positive family history. This is statistically highly significant ($P < 0.001$). The details of positive family history are provided in the Table 2. When the association between the positive history among the family members with the prevalence of RAS was analyzed individually, positive history of RAS in father, mother, and brother was found to be statistically highly significant ($P < 0.001$), but positive history of RAS in sisters was found to be not significant ($P > 0.05$).

Table 1: Distribution of positive family history

Group	Number of students	Number of students with positive family history
Students with RAS	140	88
Students without RAS	124	27
Total	264	115

RAS – Recurrent aphthous stomatitis

Table 2: Details of positive family history among the students

Positive family history	Students with RAS $n = 140$	Students without RAS $n = 124$
Father	35	7
Mother	42	15
Brother	22	3
Sister	22	12

RAS – recurrent aphthous stomatitis

Table 3: Findings of similar studies about recurrent aphthous stomatitis^[5-10]

Author, place and year	Study group	Lifetime prevalence of RAS (%)	Family history of RAS (%)
Embil JA, ^[5] Worldwide, 1975	3716 male medical students	36	NA
	1340 female medical students	32	
	1581 male dental students	48	
	728 female dental students	48	
	1480 female nursing students	66	
Miller et al., ^[6] Pennsylvania, 1977	1788 professional students	57	NA
Pratibha et al., ^[7] India, 2012	341 dental students	67	44
Byahatti SM, ^[8] Libya, 2013	500 dental students	30	NA
Our Study India, 2014	264 female dental students	53	63
Safadi RA, ^[9] Jordan, 2009	684 dental patients	78	66
Abdullah MJ, ^[10] Iraq, 2013	1100 dental patients	28	34

RAS – recurrent aphthous stomatitis, NA – data not available

DISCUSSION

The lifetime prevalence of RAS among the female students of our dental institution was found to be 53%. Findings of similar studies are presented in the Table 3.^[5-10] The prevalence of RAS varies depending upon the method and group of population studied.^[11] However, RAS is the most common oral ulcerative condition found in the clinical practice.^[1] RAS is reported to be more common among the females, among third decade, and among the students.^[6,10] Even though 63% of students with RAS have positive family history, the genetic aspect need not be considered as etiology, but only as a predisposing factor, because 22% of students without RAS also have positive family history. Inheritance of specific genetic polymorphism related to proinflammatory cytokines is suggested for explaining the family history of RAS.^[11] In subjects with RAS, an enhanced immunologic response is assumed to occur due to some trigger factors like mechanical injury, stress, or bacterial and viral antigens. Higher prevalence of aphthous among relatives indicates the genetic background of the condition.^[11] Even though significant association was found between prevalence of RAS and positive family history, further studies are warranted to explain the absence of significant association between prevalence of RAS and positive history among the sisters.

Point prevalence of RAS among the 3,244 patients attending the Jodhpur Dental College was found to be 22% which is different from the lifetime prevalence.^[12] Point prevalence and life time prevalence among the 341 dental students of Manipal was reported to be 7% and 67%, respectively.^[7] The prevalence of RAS among the dental patients or dental students should not be extrapolated for the prevalence of RAS among the general population, because the predisposing factors like age, stress, nutritional status may not be similar. For example, the point prevalence of RAS is found to decrease with age.^[6] One of the limitations of this study is that the clinical examination was not conducted to confirm the RAS among the study participants and their family members resulting in some amount of subjective component in our results. Also, the frequency, the severity, and the point prevalence of RAS were not assessed in this study.

CONCLUSION

The lifetime prevalence of RAS was found to be 53% among the female dental students of our institution. There is significant association between the presence of RAS among the female dental students and positive family history.

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