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RESEARCH ARTICLE
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RECURRENT APHTHOUS STOMATITIS AND ITS PREDISPOSING FACTORS AMONG UNDERGRADUATE DENTAL STUDENTS

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ABSTRACT

One of the most common mucosal conditions in the oral cavity is aphthous stomatitis, often known as aphthous ulcers (AU). Recurrent aphthous stomatitis (RAS) is a frequently seen oral ulcerative lesion, manifesting as multiple, recurrent, shallow, irregular ulcers encircled by an erythematous halo. A recurrent occurrence of one or more painful ulcers with a well-defined erythematous margin and a Yellowish-Gray pseudomembranous centre. The mean prevalence of RAS ranges from 10 to 70%. The three-month recurrence rate is as high as 61% as well. Environmental variables and the prevalence of AU investigated can be influenced by the population

Objective: The aim of this study is to assess the prevalence of Recurrent Aphthous Stomatitis (RAS) and identify its predisposing factors among undergraduate dental students.

Methodology: Between March and November of 2024, 250 dental students from Abbottabad International Medical and Dental College took part in this cross-sectional survey. Patients of both sexes, aged between 15 and 65 years, with a documented history of recurrent aphthous ulcers (minor, major, or herpetiform, as per Stanley's classification) for a minimum duration of one year were included in the study

Results: Out of 250 students, 125 (50%) were males while 125 (50%) were female students. Out of 250 subjects only 148 (59.2%) had Aphthous ulcer, 60 (48%) were male while 88 (70.4%) were female. Participants' average age was 21.14 ± 1.65 years, and 98 (49%) of them reported having RAS. RAS was substantially more common in women than in men (70.4 versus 48, P=0.01) and was linked to a history of family involvement (P<0.001) and a propensity to consume spicy foods (P=0.03).

Conclusion: The study's findings demonstrated a strong correlation between aphthous stomatitis and overall health. Therefore, enhancing overall health and quality of life in relation to oral health may help avoid aphthous stomatitis.

Key Words: Aphthous Ulcers, Dental Students, Recurrent Aphthous Ulcers, Smoking, Spicy food, Oral Ulcers, Prevalence, Etiopathogenesi.

INTRODUCTION

One of the most common mucosal conditions in the oral cavity is aphthous stomatitis, often known as aphthous ulcers (AU).[1] A recurrent occurrence of one or more painful ulcers with a well-defined erythematous margin and a Yellowish-Gray pseudomembranous centre, as well as a non-specific histological presentation that can affect multiple oral mucosal regions, are the hallmarks of this inflammatory disorder of the oral movable mucosa.[2] The mean prevalence of recurrent aphthous ulcers (RAS) ranges from 10 to 70%. The three-month recurrence rate is as high as 61% as well. Environmental variables and the prevalence of AU investigated can be influenced by the population. According to studies, this illness is more common in women, nonsmokers, white persons, and those from lower socioeconomic backgrounds.[3] RAS can affect up to 40% of children, and 85% of them have parents who carry the virus. The initial sign of RAS is a burning feeling that lasts for two to forty-eight hours before an ulcer appears. The depth, number of episodes in a single episode, location, and length of aphthous stomatitis all affect its clinical characteristics.[4]

These characteristics allow for the classification of aphthous ulcers into three primary groups: minor, major, and herpetiform recurrent aphthous stomatitis ulcers. The soft palate and tonsillar faucets are the primary sites of significant ulcers, which are deep, usually single lesions that are larger than 1 cm in diameter (1 to 3 cm) and heal in 2 to 6 weeks with scarring.[5] In contrast, minor ulcers are painful, shallow lesions that are typically smaller than 1 cm in diameter (between 3 and 10 mm) and have yellow fibrinopurulent pseudo membrane on them. These lesions primarily affect non-keratinized mucosa and commonly affect the buccal and labial mucosa.[6] There are no more than ten lesions each flare-up, and the healing process takes seven to fourteen days without leaving any scars. The most common type of aphthous lesions, known as herpetiform lesions, have the greatest incidence rate and manifest as many, shallow, and tiny lesions, ranging in diameter from 1 to 3 mm.[7] Some of these lesions will eventually combine to create large, irregular lesions. erosions that mimic herpetic ulcers in clinical terms The differential diagnosis is since HSV lesions mostly affect keratinized mucosa and recover in two to six days, whereas RAS invariably occurs in non-keratinized mucosa.[8] These three variants are surrounded by an erythematous halo on an oedematous backdrop.[9] One of the most important symptoms in individuals with oral aphthous lesions is severe intraoral discomfort. Chronic pain that lasts a long time will inevitably have a psychological consequence. Patients with RAS frequently experience depression, anxiety, and aggressive behaviour as psychological effects of their ulcers' discomfort.[10] Using the well-validated technique, one must first acquire sufficient knowledge about the psychological symptoms of RAS to successfully regulate these manifestations.[11] Due to small sample sizes and disparate assessment methods, the findings of earlier research on psychological symptoms of RAS are debatable.[12]

Therefore, the aim of this study is to assess the prevalence of Recurrent Aphthous Stomatitis (RAS) and identify its predisposing factors among undergraduate dental students.

METHODOLOGY

Between March and November of 2024, 250 dental students from Abbottabad International Medical and Dental College took part in this cross-sectional survey. According to Cheng et al.[5], the sample size was determined to be 250 students, considering a type 1 error of 0.05 and a type 2 error of 0.2 Patients of both sexes, aged between 15 and 65 years, with a documented history of recurrent aphthous ulcers (minor, major, or herpetiform, as per Stanley's classification) for a minimum duration of one year were included in the study. Before the questionnaires were distributed, written explanations of the significance of research, photographs of various aphthous ulcer kinds, and descriptions of the types of aphthous and its differential diagnoses were given to assure the correctness of the students' responses. While the subjects were not allowed to participate in the study if the wounds were caused by a sharp tooth edge, a broken repair, orthodontic equipment, or partial prosthesis. In SPSS 26.0, the

independent t-test, Pearson correlation test, chi-square, or Fisher's exact test were employed, with a significance threshold of 0.05 applied to each test.

RESULTS

Out of 250 students, 125 (50%) were males while 125 (50%) were female students. Out of 250 subjects only 148 (59.2%) had Aphthous ulcer, 60 (48%) were male while 88 (70.4%) were female. Participants' average age was 21.14 ± 1.65 years, and 98 (49%) of them reported having RAS. RAS was substantially more common in women than in men (70.4 versus 48, P=0.01) and was linked to a history of family involvement (P<0.001) and a propensity to consume spicy foods (P=0.03). Additionally, students with a history of RAS had a substantially lower OHIP score (7.06 ± 7.22 versus 3.11 ± 3.09, P=0.002) as shown in Table 1.

Table 1: Comparing the clinical and demographic characteristics of individuals with and without RAS

Variable		Aphthous Ulcer		*P*-value
		NO	YES	
Age		21.17 ± 1.7	21.1 ± 1.6	0.04**
OHIP		3.11 ± 3.09	7.06 ± 7.22	0.002*
Gender	Male	65 (52)	60 (48)	
	Female	37 (29.6)	88 (70.4)	
Mean Annual Recurrence Rate	4-14	---	121 (81.8)	---
	>30	---	27 (18.2)	
Ulcers Frequency	1-5	---	119 (80.4)	---
	5-10	---	29 (19.6)	
Ulcer size	<10 mm	---	100 (67.6)	---
	>10 mm	---	29 (19.6)	---
	1-2 mm	---	19 (12.8)	---
Ulcer Type	Minor	---	141 (95.3)	---
	Major	---	6 (4.02)	---
	Herpetiform	---	1 (0.68)	---
Mean Ulcer Healing Duration	4-14	---	145 (98)	---
	>30	---	3 (2)	
Family Involvement History	Yes	15 (32.6)	127 (85.8)	<0.001*
	No	31 (67.4)	21 (14.2)	
Tendency to eat spicy foods	Yes	22 (47.8)	145 (98)	0.03*
	No	24 (52.2)	3 (2)	
Smoking	Yes	5 (10.9)	65 (44)	0.18*
	No	41 (89.1)	83 (56)	
Location of ulcer	Lip, Cheek, Mouth floor	---	111 (75)	---
	Lip, Cheek, Palate, Pharynx	---	24 (17)	
	Lip, Cheek, Palate, Pharynx, Gingiva, Mouth floor	---	13 (8)	

*chi-square test
**independent t test

DISCUSSION

Compared to earlier studies by Manoj et al. (2023)[13] (18%), Aga et al. (2025)[14] (25.2%), and Taheri et al. (2022)[15] (39%), the current study's prevalence of RAS positivity was greater at 59.2% of patients. The demographic, sample size, and study methodology would all affect the disparity in results. It is recommended that future research employ clinical assessment in addition to questionnaires to determine RAS prevalence, as the high prevalence in this study may have been caused by evaluating prevalence using both clinical examination and questionnaire, which led to errors in other lesions with RAS.

Similar to our findings, other research[16,17] found that RAS was more common in women. Additionally, in contrast to earlier research, older age was linked to a greater incidence of RAS. The disparity in the measuring instrument and population ethnicity of the research may be the source of the dispute. In line with other research[18,19], smoking did not significantly contribute to the incidence of RAS in this study. According to research by Verma et al. (2023)[20], smoking influences mucosal keratinization, which in turn has a significant preventative effect on the onset of RAS. In contrast to the findings of Manoj et al. (2023)[13] and Rahmadhany et al. (2023)[21], the individuals with a history of RAS were substantially older than the other patients. The disparity in ethnic traits may be the cause of the different outcomes. One of the research's limitations was that it was only conducted at two health facility and had a small study population. Additionally, this study was limited by the fact that it was carried out on dentistry students. We advocate for multicentric research on broader communities, particularly the general population.

CONCLUSION

The findings demonstrated a strong correlation between aphthous stomatitis and overall health. Therefore, enhancing overall health and quality of life in relation to oral health may help avoid aphthous stomatitis.

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