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Aphthous Ulcer and the Effective Factors on It's Incidence among the Students of Golestan Medical Sciences University in the North of Iran

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Abstract: The aim of this study was to determine the prevalence and probable predisposing factors of Aphthous ulcer among the medical students. This project was a cross-sectional and descriptive study, which was carried out on 485 students of Golestan University of medical sciences in the north of Iran. Data was collected by filling the questionnaire. The gathered informations entered into SPSS software and were analyzed by Chi square method. The mean age of the students was 21.8 years. 36.9% (179 persons) of subjects had positive history and 8.9% (43 persons) of them had present Aphthous ulcer at the time of interview. 70.6% of students with positive personal history of Aphthous ulcer had positive family history of Aphthous ulcer too. Internal labial mucosa was the commonest site of the lesion among the subjects with present Aphthous ulcer. We found that gender, positive family history, the field of study, the form of diet and stress had a major correlation with the incidence of Aphthous ulcer.

Key words: Aphthous ulcer, Medical Sciences University students, incidence, epidemiology

INTRODUCTION

Aphthous Ulcer (AU) is one of the most common oral lesions which occur either in single or multiple forms in oral mucosa (Casiglia *et al*., 2006).

The age of onset for aphthous ulcers is 10-19 years. After childhood and adolescence, it may continue throughout the entire life (Ship *et al*., 2000) these lesions most likely to recur and due to this reason are usually called, Recurrent Aphthous Stomatitis, these lesions are also called canker-sore. The term canker is a derivative of the Latin word cancer, but aphthous ulcers are not a type of cancer (Dental Imaging Services for Dentists, 2000) these lesions cause pain and sometimes the severity of the pain interfere with eating and speaking in affected persons (Odom *et al*., 2000).

In spit of numerous studies, the main cause of these lesions is not clearly understood and the various factors can be responsible for its appearance. Genetic factors, emotional and physical stress, viral and bacterial infections, nutritional deficiencies and food allergy are among the factors which may be responsible for aphthous ulcers. It believes that economical and social status also play a role in this lesion. In US, children from high socioeconomic groups may be affected more than those from low socioeconomic groups (Casiglia *et al*.,2006).

Some believed that AU is associated with a systemic disease such as Behcet syndrome, HIV infection and Gluten-sensitive enteropathy therefore AU can lead to the diagnosis of such disorders (Casiglia *et al*., 2006).

In a study on the dentistry students of Shahid Beheshti medical Sciences University in Tehran showed that, 3.8% of students had AU on the time of examination (Taheri, 2002). The present study was designed to determine the prevalence and Acute Point Prevalence (APP) of the AU among the students and to find out the risk factors related to these lesions.

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MATERIAL AND METHODS

This study was a cross-sectional descriptive study. The sample populations were the students of Golestan university of medical sciences. Four hundred eighty five students of medicine, nursery, midwifery and paramedics were voluntarily included in the study and filled the questionnaire.

The questionnaire had two sections. The first section contained the personal information and the history of AU in students and their families. the second section of the questionnaire was related to the persons whom had positive history of AU, in this section the number and site, time and periods of appearance the lesion and the pre-existing factors, which lead to the lesions was examined.

The sample population was chosen on random sampling. Data were entered into the SPSS and analyzed by χ^2 test.

RESULTS

This study was carried out on 485 students from Golestan university of medical sciences, 331 (68.2%) and 154 persons (31.8%) were female and male, respectively. Mean age was 21.83±2.49 years. One hundred ninety four person (40%) were Para-medical, 144 persons (29.7%) were from nursery and midwifery and 147 persons (30.3%) were from medical schools. One hundred seventy nine cases (36.9%) had a positive history and 43 cases (8.9%) had AU at the time of the study. The difference between history of AU among male and female was statistical meaningful (p = 0.028) (Table 1).

The majority cases with present AU was female (26 persons, 60.5%) and there was a meaningful correlation between the sex and the present of AU. (p-Value = 0.014) 74 persons (41.4%) from subjects with positive history of AU were medical students, which constituted about 50.3% of total students of this faculty, but from 43 persons whom had AU at the time of study; the majorities belong to the Para-medical school students (Table 2).

Table 1: The prevalence of AU among Medical Students according to the Gender

History of AU	Male	Female	Total
Positive	46 (29.9)	133 (40.2)	179 (36.9)
Negative	108 (70.1)	198 (59.8)	306 (63.1)

The value presented in parenthesis show percent

Table 2: The prevalence of the positive history of AU and present AU in to the different Faculties

Faculty	Medical	Midwifery and Nursery	Nursery and Para- medical	Total
The positive history of AU	74 (41.4)	50 (27.9)	55 (30.7)	100
Present AU	11 (25.6)	14 (32.5)	18 (41.9)	100

The value presented in parenthesis show percent

Table 3: Effective factors in accordance AU among students

Factors	The history of AU N = 179 No. (percent)	The presence of AU at the time of study N = 43 No. (percent)
Stress and psychological factors*	75 (41.9)	20 (46.5)
Mouth and teeth problems**	69 (38.5)	16 (37.2)
Food allergy	57 (31.84)	17 (39.53)
Known anemia	33 (18.43)	8 (18.6)
Discontinue cigarette smoking	13 (7.26)	5 (11.62)
SLS***	6 (3.35)	3 (6.97)

*All of the items related to the psychological factors such as: emotional stress, the time of examination, extreme fatigue and inadequate sleep.**All of the items related to the mouth and teeth problems such as: Inadequate hygiene of mouth and teeth, decay teeth in the mouth, trauma, mucosal bites. ***SLS: toothpaste containing sodium lauryl sulfate

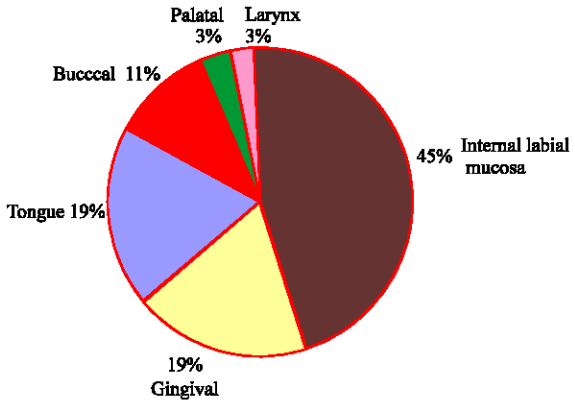

Fig. 1: The distribution of AU in the group with present AU according to the site of lesion

Among medical students with positive history of AU, the majority belong to the student in the stager (45.9%) and intern courses (44.6%).

70.6% of the persons with the positive history of AU, had a positive family history and 62.8% of the persons with AU at the time of the study, had positive family history.

Among the subjects with AU at the time of study, the highest incidence was mentioned to be on the internal labial mucosa (Fig. 1).

Fifty seven persons (31.8%) from those subjects with the positive history of AU and 17 cases (39.5%) of those with present AU mentioned the consumption of pickles and addetative, had an effective role in their AU, vinegar was the common source of such pickles. In Table 3 the other effective factors on the AU occurrence has been summarized.

DISCUSSION

Recurrent AU occur world wide and are reported on every populated continent. Recurrent AU affect 2-66% of

the international population (Casiglia *et al*., 2006). Medical and Dental students show higher rate of AU in compare with the general population. The prevalence of AU in our study in medical university students were 36.9%, which is similar to other studies. Earl and Plewa (2006) reported that 31-66% of Medical and Dental students have AU and Casiglia *et al*. (2006) reported the incidence of this illness in students in professional schools is rising to more than 50% (Casiglia, 2006). In two studies which carried out on the American students in 1960 and 1967 the prevalence rate of AU was 55 and 66.2%, respectively (Zain, 2000).

The incidence or point prevalence of AU among our students group was 8.9% which is in agreement with other studies. Zain (2000) mentioned that the incidence or point prevalence of AU in the world population is about 0.5-11.1% (Zain, 2000) and its incidence among the students of Shahid Beheshti University of Medical Sciences was 3.8% (Taheri, 2002) .

We found that, the rate of AU in the medical school students was higher than the other two colleges (Nursery-midwifery and Para-Medical) students which, stress, inadequate sleep and repeated examinations can be among the probable reasons for this observation. In confirmation of this finding, we found that among the medical students, the highest rates were seen in Stager and internship courses.

The high incidence of present AU among the para-medical students can be due to reasons such as short course of education and anxiety about the future employment.

Gender is one of other effective factors causing high incidence of AU, which was much higher among female students; other studies are also in agreement with our findings (Casiglia, 2006). It was reported that genetic factor is one of the etiologies of the AU. AU tend to be seen within the family (Miller *et al*., 1977) in a study it was reported that up to one third of the patients have positive family history for AU (Rook *et al*., 1998) and in another study in USA among 17235 cases it was shown that the incidence of AU among white subjects, Mexican immigrant and American Blacks were 20.87, 12.88 and 4.96%, respectively (Rivera-Hidlago *et al*., 2004). In present study only 18.7% of subjects with no family history had the positive experience of AU.

Discontinuing smoking cigarette, nutritional deficiencies, such as Iron, Folic acid, Behcet syndrome (Casiglia *et al*., 2006) and food allergy (Gurdal, 1996) may be among the pre-existing factors for the incidence of AU.

Further investigations in various age groups, occupational, economical and social positions in the society are suggested for the proper understanding of AU epidemiology.

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