

## Incidence of Aphthous Ulcers in Patients attending a Private Dental Hospital

Research Article

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### Abstract

Aphthous ulcers are painful and an inflammatory process of the oral mucosa. The etiology of aphthous ulcers are not well understood. They can cause patient discomfort and it is challenging to prevent its recurrence. The aim of this study is to determine the incidence of aphthous ulcer among patients attending a private dental institute. A retrospective study was conducted in an institutional setting involving patients who had been diagnosed with aphthous ulcers. The case records of the patients were analysed for the presence of aphthous ulcers. 1000 patients were selected randomly and data such as age, gender and presence and absence of aphthous ulcers were retrieved from the case records. The data are then tabulated in Microsoft Excel and subsequently transferred to SPSS software for statistical analysis. Chi square analysis was done to find the association between different variables. The incidence of the aphthous ulcers in the present study was found to be 54 per 1000 per year or 5.4%. Association between gender & aphthous ulcer and age & aphthous ulcer were done. The association between gender and aphthous ulcers were found to be statistically not significant ( $p = 0.147$ ;  $p > 0.05$ ) yet a male predilection was seen for aphthous ulcers. The association between age and aphthous ulcers were found to be statistically significant ( $p = 0.000$ ;  $p < 0.05$ ). The ulcers were more common in the 21-40 age group and in males. Early identification of the lesion is paramount in order to provide an effective treatment.

**Keywords:** Aphthous Ulcer; Incidence; Recurrent Aphthous Stomatitis; Aphthous Minor.

### Introduction

Aphthous ulcers are painful lesions of the oral mucosa and are inflammatory in nature. They usually appear secondary to various systemic diseases such as Inflammatory bowel disease, celiac disease, other malabsorption syndromes [1], Behcet's syndrome, HIV infection, Sweet's syndrome and Magic syndrome [2]. The term aphthous translates to ulcer in greek [3]. They are also termed as "Recurrent aphthous stomatitis" and are benign in nature. They occur in three different forms: major, minor and herpetiform. The most common form presented is minor aphthous ulcers. It occurs in 70-85% of the cases. Herpetiform type is quite rare and is seen in about 5-10% of cases. They appear as pinpoint ulcers occurring in clusters [4].

Aphthous ulcer is a common ailment that is idiopathic in nature. It may occur due to emotional or psychological stress, allergy or sensitivity, exposure to toxins, vitamin deficiencies, hormonal or gastrointestinal disorders, etc [5] Many cases are seen in patients with vitamin deficiencies. The ulcers are usually asymptomatic in nature and they resolve gradually in a few days after occurrence. They are more prevalent in non-smokers and occur less in individuals who have good oral hygiene [5, 6]. It is said to be more common in females than in males. Age of onset is during childhood and the 2nd and 3rd decade of life. There are less chances of it occurring in older individuals. Early diagnosis can help better treat the symptoms before the lesions advance to a more severe state [2]. Diagnosis is mostly clinical and usually there is no need for laboratory testing except in atypical cases [4]. Differential di-

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agnosis could include oral malignant ulcer, herpes simplex, drug induced lesions, etc.

Management of the recurrent aphthous stomatitis is often simple. There are many factors associated with the etiology of the lesion yet there is still a lack of clear explanation about the etiopathogenesis of aphthous ulcers. Due to this reason the management of the recurrence has become difficult. For some patients the recurrence is very frequent which affects their quality of life. Anti-inflammatory agents such as topical NSAIDs, corticosteroids and mouthwash containing 0.15% triclosan in ethanol and zinc sulfate are usually prescribed [7]. Topical application of hydrogen peroxide 0.5% solution or silver nitrate 1–2% solution, treatment with CO<sub>2</sub> or Nd:YAG laser have also been seen to provide substantial pain relief to patients suffering from severe recurrent aphthous stomatitis [8]. Vitamin and mineral supplements are also prescribed in order to compensate for any nutritional deficiencies. Diet modifications such as a non spicy and non oily diet with plenty of green and yellow vegetables are usually advised.

Previously our team has conducted numerous studies which include in vitro studies, review ([9-13]), case reports ([14-18]), surveys ([19, 20]), microscopic studies and clinical trials ([21-23]). Now we are focusing on epidemiological studies. The aim is to determine the incidence of aphthous ulcer in patients attending a private dental institute, this study will provide an update about certain epidemiological aspects of the disease and may help in better management of the disease.

## Materials and Methods

### Study setting

This is a retrospective study conducted in a private dental institution. The patient case records were reviewed for the necessary information by a trained examiner. The advantage of conducting the study in an institutional set up provides easy access to patient data. Among patients who have visited the dental clinic of the institution, the case records of 1000 patients were reviewed. A wide age range was selected for the study. The institutional ethical committee provided approval for the study (SDC/SIHEC/2020/DIASDATA/0619-0320).

### Inclusion criteria

1. Patients who have been diagnosed with aphthous ulcers/recurrent aphthous stomatitis.
2. Patients from <20 to 80 years of age.

### Exclusion criteria

1. Incomplete patient data.
2. Duplicate patient data.
3. Patients having aphthous ulcers coexisting with other mucosal lesions.
4. Atypical presentations of aphthous ulcers.

### Sampling

A total of 1000 case records of patients were reviewed to find out the incidence of aphthous ulcers. Convenient sampling method

was used to select the patients for the study. The data obtained from the case records were cross verified with photographs.

### Data collection

All the data after thorough checking for duplicates, incomplete entries and cross verification with photographs were entered in Microsoft excel spread sheet in order to organise the data. The variables obtained from the data included age, gender and the presence of aphthous ulcers. Here the age and gender are the independent variables and the aphthous ulcer is the dependent variable.

### Statistics

The statistical analysis of the obtained data was performed by the SPSS software version 23.0. The data from the excel spreadsheet was transferred to SPSS software for analysis. Chi square tests were employed in order to find the association between different variables. The statistical significance was set at 5%. The final results are presented in the form of graphs for further interpretation and discussion.

## Results and Discussion

Among the patients having aphthous ulcers, a male predilection was seen when compared to female patients. 3.7% patients who had aphthous ulcer were male and 1.7% were females. The association between gender and aphthous ulcers were done using chi square analysis and it was found that the association between the variables were not statistically significant ( $p$  value= 0.147;  $p > 0.05$ ) (figure 2). In a similar study done by Patil S et al [24], it was seen that male patients were more commonly affected by aphthous ulcer when compared to female patients. 56.3% of the patients diagnosed were females and the remaining 43.7% were male. Akintoye SO et al [25], in her review about recurrent aphthous stomatitis stated that prevalence of aphthous ulcer was higher within the female population. Julieta Ruiz et al, stated that aphthous ulcer occurs mostly in adults, with no gender predilection as such [26]. A higher prevalence in female patients as they are more prone to stress, emotional situations and changes in hormone levels [26, 27].

Aphthous ulcer can affect patients of any age. It is mostly seen to occur during childhood and has a very high chance of recurrence throughout the individuals life time. Studies have stated that patients in their third and fourth decade are more commonly affected [28]. In the present study, it was seen that patients between 21-40 years age groups were at 4.2% and were commonly affected. This was followed by the < 20 years age group where the aphthous ulcers were found at 1%. The association between age and aphthous ulcers was done using chi square analysis and it was found that the association between the variables was statistically significant ( $p$  value= 0.000;  $p < 0.05$ ). A study done by Yojari R et al., stated that aphthous ulcer was more prevalent in patients who were in the second and third decade of life. Another study stated that young adults are more prone to getting diagnosed with aphthous ulcer when compared to older age groups [29].

This study had a small sample size hence the results might not be applicable for a larger population. The initial diagnosis of aph-

Figure 1. Shows the distribution of aphthous ulcer in patients from the study. Red colour represents the presence of aphthous ulcers (5.4%), orange colour represents the absence of aphthous ulcer (94.6%). The figure shows only a small fraction of the patients were suffering from aphthous ulcers.

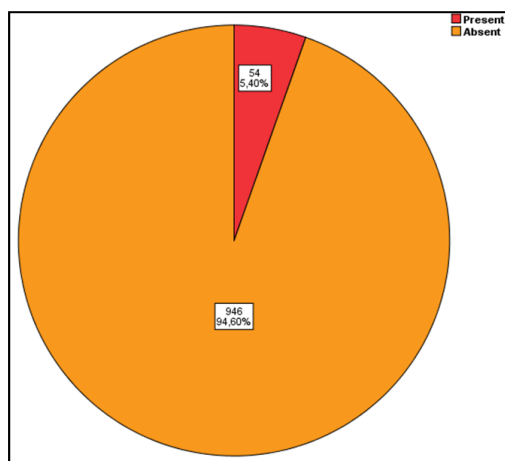


Figure 2. Shows the association between gender and presence (red) and absence (orange) aphthous ulcer. X-axis represents the gender; Y-axis represents the number of patients. Chi square analysis shows the association between gender and aphthous ulcer were not statistically significant (p value= 0.147; p > 0.05) yet the figure shows a male predilection for aphthous ulcers (3.7%).

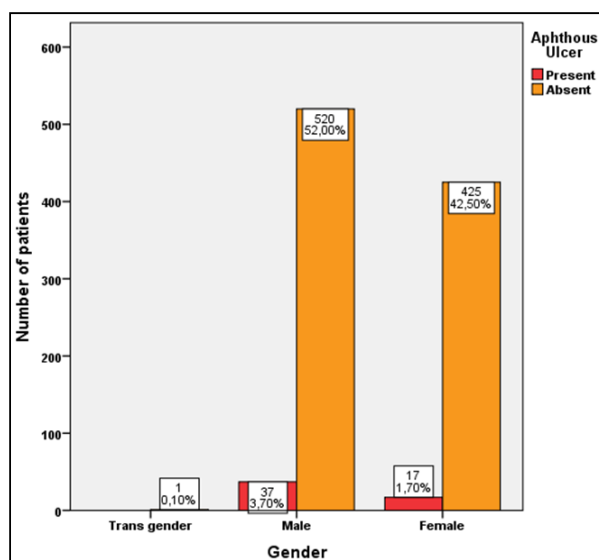
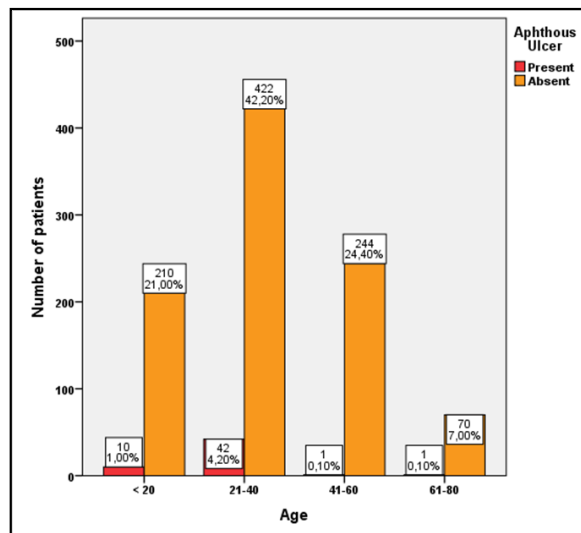


Figure 3. Shows the association of age and presence (red) and absence (orange) aphthous ulcer. X-axis represents the various age groups. Y-axis represents the number of patients. Chi square analysis shows the association between age and aphthous ulcer were statistically significant (p value= 0.000; p < 0.05). The lesions occurred more in the 21 - 40 age group followed by < 20 age group. This shows the lesions were more prevalent in the younger age groups.



thous ulcer was dependent on the person who examined the patient. This may create reliability issues. In the future studies about aphthous ulcers features like types of aphthae, larger sample size, prospective study design and associated factors such as stress, adverse habits and nutritional status can also be included for assessment.

## Conclusion

In the present study the incidence appears to be less when compared with similar studies. The study also revealed that there was no significant association between gender and aphthous ulcer but still showed a male predilection. The common age of occurrence was found to be 21-40 years followed by patients who are in the age group < 20 years and there was a significant association between age and aphthous ulcers. Adverse habits and factors like stress might have a significant influence on the etiology of aphthous ulcers.

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