

Incidence Of Oral Ulcers In Patients Visiting A Private Dental Hospital

Research Article

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Abstract

Oral ulceration is a common complaint of patients attending dental hospitals. The presenting complaints are usually burning sensation and pain. They can present in any part of the oral cavity but may be painful if it occurs in the movable areas. There are different types of oral ulcer and they can range from a simple aphthous ulcer to a malignant ulcer. The early and proper diagnosis of the ulcers helps in effective management of the condition. The aim of the study was to determine the incidence of oral ulcers occurring among patients visiting a private dental hospital. This is a retrospective study and a total of 2000 patient data were selected for the study. Convenient sampling method was used to select the sample. The data was obtained from patient case records and the data was reviewed for presence of oral ulcers. All types of oral ulcers were included and ulcers coexisting with other mucosal lesions were excluded from the study. The overall incidence of oral ulcers among the participants was found to be 203.5 per 1000 per year or 20.35%. The number of oral ulcers was 13.45 % in males and 6.9% in females. The number of recurrent aphthous stomatitis was 17.94% in males and 8.60% in females, traumatic ulcers was 28.26% in males and 15.23% in females, malignant ulcers was 14.74% in males and 4.42% in females, and pemphigus was 0.74% in males and 1.23% in females, herpes simplex was 4.42% in both male and female. Chi square analysis was performed to assess the association between different variables. The association between age groups and different types of oral ulcers is statistically significant as the p value is <0.05 (p value- 0.000). The association between gender and different types of oral ulcers is statistically significant as the p value is < 0.05 (p value - 0.023). From the present study we can conclude that the common ulcers of the oral cavity was traumatic ulcer and recurrent aphthous ulcer. The early and prompt diagnosis of these lesions will lead to successful treatment and prevention of the disease.

Keywords: Age Groups; Gender; Incidence; Oral Cavity; Oral Ulcers.

Introduction

An ulcer is a break in the continuity of the epithelium brought about by molecular necrosis. Ulcers are most common in the oral region, for which the patient seeks help from their physician or dental surgeon. The presenting complaints are usually burning sensation and pain. They can present in any part of the oral cavity but may be painful if it occurs in the movable areas [1]. Unlike mucosal erosions which involve the loss of only the superficial layers of the oral epithelium, oral ulcerations are associated with loss of the entire epithelial layers and lamina propria. Patients usually present with oral painful wounds that may affect any oral mucosa especially the lips, tongue, the floor of the mouth, palate,

and buccal mucosa [2].

The etiology of oral ulcers has been well documented in the literature [3]. Traumatic ulcer results from the presence of mechanical substances such as sharp edges of the tooth, appliances in the mouth, radiation, chemical, and radiation injury to oral mucosa during radiotherapy [4]. Removal of the control of the respective source of trauma is essential to the management. Others are pain control and prevention of secondary infection which are quite essential steps in the management of such oral ulcerations [5]. Infectious ulcers result from the presence of pathogenic organisms such as bacteria, viruses, and fungi [2,6]. Other implicated etiology are immune dysfunction (aphthous ulceration, erythema

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multiforme), stress-induced ulcer, and drugs. Syndromic forms of oral ulceration had also been reported. Such include Behcet's syndrome and Reiter's syndromes in these cases, oral ulcerations are seen in conjunction with genital and corneal ulcerations. Stress and psychological factors have also been considered as notable etiological factors in some form of oral ulcerations probably due to the role played by stress in immune dysfunction. The majority of the ulcers are benign and resolve spontaneously but small proportions are malignant. There is intense or moderate pain in the region of ulcerations which heal in 10-14 days for the more common types. Recurrence of the ulcers occurs in intervals within a year or over several years [7].

According to the previous literature, many cases of oral malignant ulcerations were wrongly diagnosed as non-neoplastic lesions for several months before the arrival of definite diagnosis was established [8]. Valente et al. reported a case of squamous cell carcinoma being misdiagnosed as a denture-related traumatic ulcer. This time elapse might risk patients' overall prognosis. Therefore, attempts should be done to come to timely diagnosis through more logical routes such as decision trees rather than test-and-error methods [9].

Acute oral ulcers are of short-lived duration and 6 weeks is a reasonable point of differentiation between acute and chronic ulcers. The causes of chronic oral ulceration are multiple, ranging from malignancy to systemic disease and other chronic inflammatory or immunobullous disorders, such as pemphigus, paraneoplastic disease, mucous membrane pemphigoid, and lichen planus. Oral ulcers may occur as a single episode or be recurrent representing a different spectrum of mucous membrane disease [10]. Previously our team has a rich experience in working on various research projects across multiple disciplines The [11-13, 14-25].

Hence the aim of this study was to determine the incidence of oral ulcers in patients visiting a private dental hospital.

Materials And Method

This is a retrospective study. The data was obtained from patient case records and the data was reviewed for presence of oral ulcers. Ethical approval was obtained from the institutional ethical committee (SDC/SIHEC/2020/DIASDATA/0619-0320). All types of oral ulcers are included for the study such as recurrent aphthous stomatitis, traumatic ulcers, malignant ulcers, herpes simplex and pemphigus (immunobullous) and the data was cross verified for errors by photographic verification. Ulcers coexisting with other mucosal lesions are excluded from the study. A total of 2000 patient data was selected for the study, patients who reported to the dental college, patients between the age group of < 30 years to > 70 years were chosen and included for the study. Convenient sampling was the sampling method used. The data was evaluated for oral ulcers by 1 trained reviewer. The data collected was entered in Microsoft Excel Sheet and it was then transferred to IBM SPSS version 20.0 data analysis software, the independent variables were age and gender and the dependent variables were the oral ulcers. Any incomplete data was excluded and for finding out association between variables chi square analysis was performed to assess the association between gender, age, type of ulcers and p value less than to 0.05 was considered statistically significant.

Results And Discussion

A total of 2000 patient case records were evaluated in the study. The overall incidence of oral ulcers among the patients was found to be 203.5 per 1000 per year or 20.35%.

From figure 1 we can infer that among the total participants 48.8% were males and 30.85% females out of which 13.45% males and 6.9% females had oral ulcers. The association between gender and presence of oral ulcers is not statistically significant as the p value is >0.05 (p value - 0.073) Oral ulceration is one of the commonest reasons for dental consultations and has been associated with impaired quality of life. The number of oral ulcers was in accordance with a study done by Oyetola, E O et al. in which it was stated that the number of oral ulcers was 68% in males and 32% in females with a prevalence of 20% [26]. The occurrence of oral ulcers seems to be influenced by gender. The finding of the study by Omoregie et al showed 33(60.0%) males and 22 (40.0%) females were affected with oral ulcers, a male predilection is seen with a male-female ratio of 1.5:1 [27]. Thus showing a higher incidence of ulcers occurring in males than in females.

From figure 2 we can infer that in age group <30 years 23.10% were males and 10.07% were females, in 31-40 years age group 16.95% were males and 7.62% were females, in 41 to 50 years age group 10.57% were males and 5.65% were females, in 51-60 years age group 7.86% were males and 6.39% were females, in 61-70 years age group 6.14% were males and 3.93% were females and in >70 years age group 1.47% were males and 0.25% were females who had oral ulcers respectively. The association between the number of oral ulcers in different age groups and gender is not statistically significant as the p value is >0.05 (p value - 0.314). In a study by Patil, et al., among different age groups with the maximum number of oral ulcers, showed that the patients in the third and fourth decade were most commonly affected with an overall prevalence of 44.5%. The overall prevalence of occurrence was found to be higher in older individuals than younger individuals [28]. Pratik and Desai found that the prevalence of habits and occurrence of lesions was between 65 and 70 years [29]. As the present study showed higher prevalence in younger and middle age groups, this finding was contrary to the present study with the reason being different habits acquired with different age groups. Findings similar to our study was seen in a report by Chaudhuri et al who examined 1399 patients with ulceration showed that the mean age group of occurrence to be 41.7 ± 14.6 years and 51.2% (702/1399) of them were female. Age was homogeneously distributed and there were no statistical significant differences (p >0.05) between male (41.7 ± 15.7 years) and female (41.7 ± 13.5 years) [30]. Muhaidat et al, in a Jordan population study reported the mean age of participants was 37.5 years and ranged from 13 years to 68 years old with oral ulcer to be commonest among those in 31-40 years implicating the etiology in active individuals to be commoner in this age group [31].

From figure 3 we can infer that recurrent aphthous stomatitis was common among <30 years age group (14.25%) and 31-40 years age group (8.11%), in the 41-50 years age group equal prevalence of traumatic ulcer and malignant ulcer was seen each (6.14%). In the 51-60 years age group the most common ulcer was malignant ulcer (5.90%), in the 61-70 years age group the common oral ulcer was traumatic ulcer (4.91%) and in the >70 years age group the

common oral ulcer was malignant ulcer (0.98%). The association between age groups and different types of oral ulcers is statistically significant as the p value is <0.05 (p value- 0.000). Previous findings by Patil et al. stated in their study about a geriatric sample of the Indian population revealed 64% of the patients presented with one or more oral ulcers [7]. In the study results by Oyetola et al, recurrent aphthous ulceration accounted for 47 cases (54%) [26]. Thus correlating to the prevalence of recurrent aphthous ulceration in our study.

From figure 4 we can infer that recurrent aphthous stomatitis was 17.94% in males and 8.60% in females, traumatic ulcers was 28.26% in males and 15.23% in females, malignant ulcers was 14.74% in males and 4.42% in females, and pemphigus was 0.74% in males and 1.23% in females, herpes simplex was 4.42% in both male and female. The association between gender and different types of oral ulcers is statistically significant as the p value is < 0.05 (p value - 0.023). Thus the most common oral ulcers in males and females are recurrent aphthous stomatitis and traumatic ulcers. Findings in accordance to our study were stated in previous literatures by Barrons et al. it was stated that recurrent aphthous stomatitis is the commonest disease of the oral mucosa affecting between 5% and 66% with about 20% of individuals in most populations having the condition to some degree among different nations [32]. In a study done by Amoateng J. et al, 1022 patients were examined for three types of ulcers such as ANUG, chemical

ulcerations and minor aphthous ulcers, and prevalence of occurrence was seen more in females (2.6%) than in males (1.2%). The higher prevalence of the predisposing factors of aphthous ulcer among the populace may be responsible for the higher prevalence of aphthous ulceration [33]. A Nigerian study by Akinwonmi et al earlier reported the site distribution of the ulcers in favor of the gingiva for recurrent aphthous ulcer [34]. In comparison to the gender prevalence of aphthous ulcers, contrary findings were seen in a study by Muhaidat et al, where female participants reported that they had recurrent aphthous ulceration (82%) more than males (73%) and the difference between the genders was statistically significant (p = 0.003) [31]. Our institution is passionate about high quality evidence based research and has excelled in various fields [35-45].

Thus findings from the present study add to the consensus of the previous similar studies. The limitations of the present study were that only the major type of oral ulcers was evaluated in the study and the subtypes of the oral ulcers were not explored, sample size is also smaller such that the results cannot be applied to the entire population. Hence future studies can have a prospective and a multicentric study design with larger sample size. The study can also include evaluation of subtypes of the oral ulcers which helps in acquiring a more intricate data which will help in better diagnosis and management of the ulcerations.

Figure 1: The above depicted figure shows association between gender and the presence and absence of oral ulcers. X-axis depicts the gender and Y-axis depicts the number of patients. From this figure it can be inferred that oral ulcers were more commonly present (blue) among males than females. Pearson's chi-square, p value- 0.073 (p > 0.05). Thus there is no significant association between gender and the presence and absence of oral ulcers.

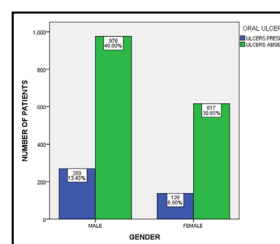


Figure 2: The above depicted figure shows association between oral ulcers in different age groups and gender. X-axis depicts the age groups and Y-axis depicts the number of patients with oral ulcers. From this figure it can be inferred that the maximum number of oral ulcers was found in males (purple) than in females (grey) seen in the age group of <30 years. Pearson's chi-square, p value-0.314 (p > 0.05). Thus there is no significant association between oral ulcers in different age groups and gender.

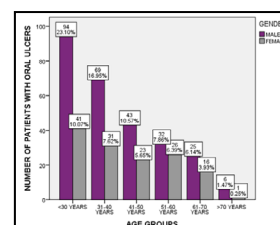


Figure 3: The above depicted figure shows association between age groups and different types of oral ulcers. X-axis depicts the age groups and Y-axis depicts the number of patients. From this figure it can be inferred that recurrent aphthous stomatitis (brown), traumatic ulcer (orange) were most commonly seen in the age group less than 30 years. Pearson's chi-square, p value-0.000 (p < 0.05). Thus there is a significant association between oral ulcers in different age groups and types of oral ulcers.

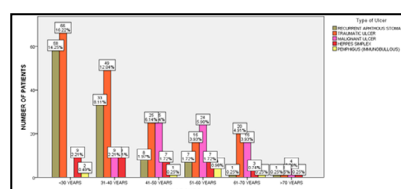
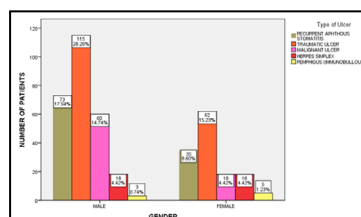


Figure 4: The above depicted figure shows association between gender and types of oral ulcers. X-axis depicts the gender and Y-axis depicts the number of patients. From this figure it can be inferred that recurrent aphthous stomatitis (brown), traumatic ulcer (orange), malignant ulcer (pink) was most commonly seen in males than females. Herpes simplex (red) was seen occurring equally in males and females. Pemphigus (yellow) was most commonly seen in females than males. Pearson's chi-square, p value-0.023 ($p < 0.05$). Thus there is a significant association between gender and types of oral ulcers.



Conclusion

The diagnosis of the wide variety of oral ulcers is an essential part of the clinical practice. Benign oral ulceration is a common mucosal disorder in the Indian population. Majority of the ulcers require treatment of the underlying cause. For the evaluation of the oral health of any population, incidence of oral ulcers is an important parameter and is also vital for planning the oral health care services. From the present study we can conclude that incidence of oral ulcers among the participants was found to be 20.35% and the common ulcers of the oral cavity was traumatic ulcer and recurrent aphthous ulcer. The early and prompt diagnosis of these lesions will lead to successful treatment and prevention of the disease. Also more awareness programmes on oral health and about effects of stress management might help in reducing the occurrence of aphthous ulcers.

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