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AGE AND GENDER PREDILECTION OF ORAL ULCERS IN AN OUTPATIENT POPULATION VISITING A DENTAL COLLEGE

Type of Manuscript: Retrospective study

Running Title: Age and Gender predilection of oral ulcerin an outpatient population of a dental college

K. Thirumagal, Dr. Gheena. S, Dr. Ravindra Kumar Jain

ABSTRACT

Ulceration is due to defects in the epithelium or the underlying connective tissue, or both. The ulcer is classified on the basis of the duration as acute (ulcer present for short period of time) and chronic (ulcer present for a long period of time). Oral ulcers always occur commonly because of injury due to improper fitting dentures, cracked teeth, or restoration. The aim of the study is to find the age and gender predilection of oral ulcer in the outpatient population of Dental College. The study was conducted among the outpatients of a Dental College and Hospital. The data was reviewed and analysed from the total number of 86000 patients between June 2019- March 2020. The data includes patient details like their gender, age, type of ulcer. which was manually verified by 1-2 reviewers and finally tabulated and analyzed by chi-square test (SPSS, IBM). Total subject population was 194 and their age ranges from (6-84) yrs. Male (63.9%) predilection was observed when compared to Female (36.1%) and predilection of Traumatic ulcer (60.8%) was seen when compared with that of recurrent aphthous ulcer (39.1%). Within the limitations of the study, the male predilection was observed when compared to females and predilection of traumatic ulcer was seen compared to recurrent aphthous ulcer among the study population.

KEY WORDS: *Oral ulcer; Traumatic ulcer; Recurrent apthous ulcer; Age; Gender; Predilection*

I. INTRODUCTION

Ulcer is a break in the continuity of the epithelium and underlying connective tissue or even both. Diagnosis of oral ulcer is little challenging because of various causative factors and the presenting features (Mortazavi *et al.*, 2016), (Sridharan, Ramani and Patankar, 2017), (Thangaraj *et al.*, 2016), (Gupta and Ramani, 2016). Based on the duration, ulcers can be classified broadly as acute and chronic. An acute ulcer will not persist more than 3 weeks and it gets resolved spontaneously such as aphthous ulcer, herpetic ulcer, traumatic ulcer and the chancers. In the condition of the chronic ulcer, it persists more than a week and even month for example malignant ulcer, odontogenic infections (Muñoz-Corcuera *et al.*, 2009), (G. Jayaraj *et al.*, 2015), (Sivaramakrishnan and Ramani, 2015),(Hema Shree *et al.*, 2019). Added to this they can be single or numerous relying upon their presentation. The lesion which is solitary may be due to any trauma, contamination or it could be a malignancy presenting as a solitary ulcer sore.

Multiple lesions might be seen in viral contamination or immune system infections and can give a few ulcerations (Scully and Porter, 2008), (Viveka *et al.*, 2016), (Hannah *et al.*, 2018), (Jangid *et al.*, 2015). Ulcers related to trauma usually resolve in about a week after removal of the cause and with the use of an anti-inflammatory and anesthetic throat spray to provide symptomatic relief and chlorhexidine 0.2% aqueous mouthwash to maintain good oral hygiene (Scully, 2001),

Saveetha Dental College & Hospital, Saveetha Institute of Medical and Technical Science Saveetha University, 162, Poonamallee High Road, Chennai – 600077, Associate Professor, Department of Oral pathology, Saveetha Dental College & Hospital, Saveetha Institute of Medical and Technical Science Saveetha University 162, Poonamallee High Road Chennai – 600077, Associate Professor, Department of Orthodontics, Saveetha Dental College & Hospital Saveetha Institute of Medical and Technical Science, Saveetha University, 162, Poonamallee High Road Chennai – 600077,Corresponding author: Dr. Gheena. S, Associate Professor, Department of Oral pathology, Saveetha Dental College & Hospital, Saveetha Institute of Medical and Technical Science, Saveetha University, 162, Poonamallee High Road, Chennai – 600077, Mail ID:gheena@saveetha.com, Phone: +91-9884033777

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(Gifrina Jayaraj, Ramani, *et al.*, 2015). The presence of recurrent ulcers gives a past history filled with irregular recuperation. The ulcer size gets changed from the millimetres to centimetres and Sometimes the patient may have fever and enlargement of the lymph node (Chattopadhyay and Chatterjee, 2007), (Sridharan *et al.*, 2019) . Most traumatic ulcers of the mucosa are due to physical trauma also local application of aspirin, cocaine or smoking crack cocaine (e.g. on the palate) can cause ulcers. Snorting cocaine can rarely cause necrosis, possibly associated with ischaemia, at the floor of nose and eventual ulcers of the hard palate and oronasal fistula formation (Porter and Leao, 2005), (Swathy, Gheena and Varsha, 2015). In order to establish a diagnosis it is important to know about the prevalence of the lesion in the particular duration and time. The most common ulcer in the oral cavity are physical traumatic ulcers. It occurs due to sharp teeth, ill- fitting dentures, rough fillings , fractured restorations, orthodontic appliance, sharp foreign body or due to biting. It appears as a yellow base with erythematous borders and it gets healed within 7 -14 days if the underlying cause is removed (Shulman, Miles Beach and Rivera-Hidalgo, 2004). The oral mucosal lesion that occurs more frequently is the oral ulcer (Bouquot, 1986), (Sherlin *et al.*, 2015), (Gheena and Ezhilarasan, 2019). Histopathology of an ulcer reveals a discontinuity to a complete loss of surface epithelium with inflammatory reaction in the underlying connective tissue that contains mainly of polymorphonuclear leukocytes in acute ulcers, and chronic inflammatory cells such as lymphocytes, plasma cells, and possibly macrophages with some fibroblastic proliferation in chronic ulcers. In the phase of ulcer the granulation tissue with fibroblastic proliferation predominates, with few macrophages, plasma cells, and lymphocytes (Khwaja and Amsavardani Tayaar, 2016), (Gifrina Jayaraj, Sherlin, *et al.*, 2015).

II. MATERIALS & METHODS

The study Setting was basically a university setting, because the available data with similar ethnicity was collected from a particular geographic location. The trends in the other location were not assessed in the study setting. Ethical approval was obtained from the university ethical committee before the start of the study. We reviewed patient records and analysed the data of 86000 patients between June 2019- March 2020. The case sheets were manually reviewed and cross verified in order to avoid errors.To minimise the sampling bias all available data was included and no sorting process was done.

All the details like patients' gender, age and type of ulcer were collected. This data was entered in excel sheet and tabulated and imported in the SPSS software (Statistical Product and Service Solutions) and analyzed by Pearson's chi - square test.

III. RESULTS

The present study had a total sample of 194 cases in the age range from 6-84 yrs. Out of that 63.9% were males and 36.1% were females. 60.8% had traumatic ulcers and 39.1% had recurrent aphthous ulcers. Traumatic ulcers were more common than recurrent aphthous ulcers.

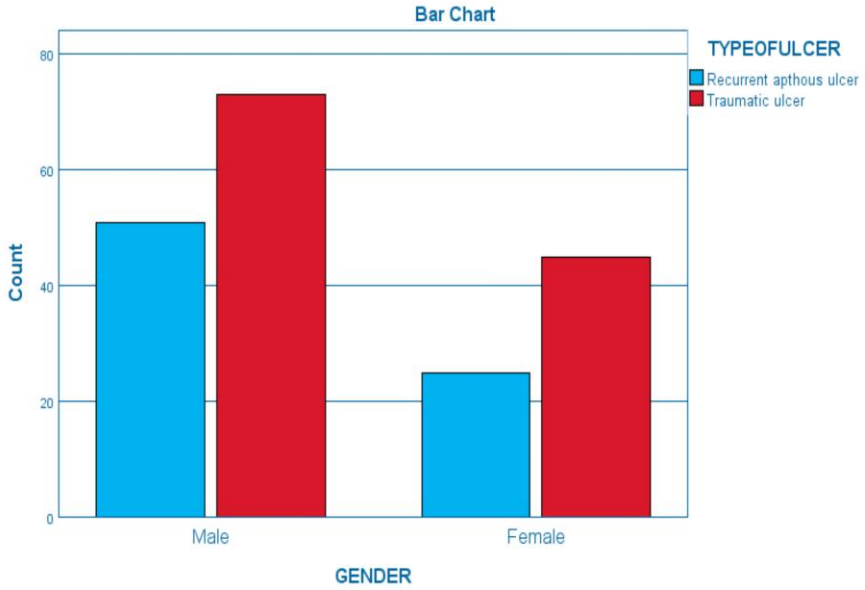

Figure 1: Bar graph showing comparison of gender and type of ulcer. X Axis represents the gender and Y Axis represents the type of ulcer. The Traumatic ulcers(red) were more predominant in both male and female gender

compared to Recurrent aphthous ulcers(blue). However, this is statistically not significant (Pearson Chi-Square Value- 0.551; p=0.458; p > 0.05)

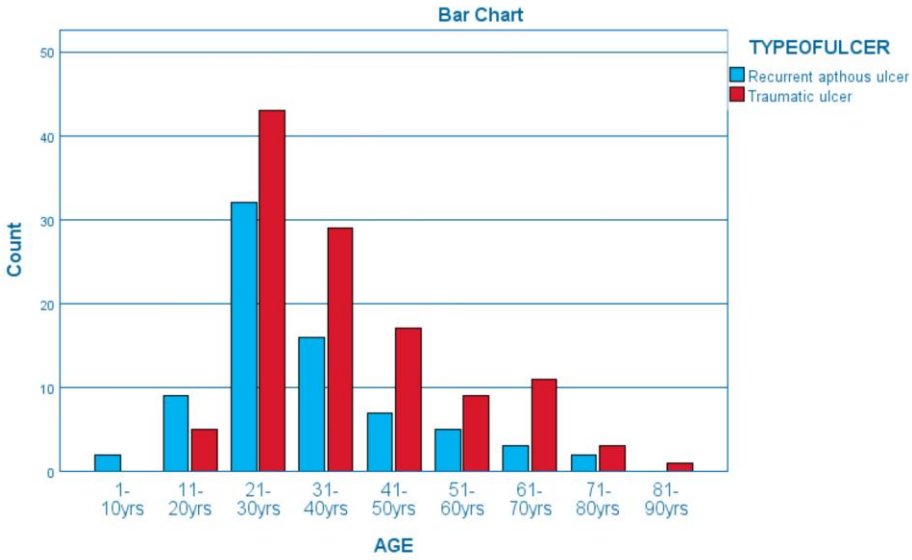

Figure 2: Bar graph showing comparison of age and type of ulcer. X Axis represents the age and Y Axis represents the number of patients with ulcers. The Traumatic ulcers(red) are more predominant in the age group of 21-30 yrs compared to recurrent aphthous ulcers(blue) However, this is Statistically insignificant (Pearson Chi-Square Value- 14.825; p=0.0.22 means p > 0.05)

IV. DISCUSSION

In the present study on analysing the data of 194 oral ulcer cases it was observed that patients age range from 6-84 yrs. Out of that 63.9% were males and 36.1% were females. On gender wise comparison with type of ulcer Traumatic ulcer was 60.8% and 39.1% had recurrent aphthous ulcers. Traumatic ulcers were more common compared to that of Recurrent aphthous ulcers. Therefore there was no significant association between gender and type of ulcer. And on age wise comparison with type of ulcer the Traumatic ulcer was more predominant in the age group (21-30)yrs. Therefore there was no significant association between age and type of ulcer.

On analysing the age wise distribution, patients belonging to the (21-30) age range were the common group affected by oral ulcer. In line to our study Abdullah et.al (Abdullah, 2013) observed a total of 1000 patients and the age group ranged from (10-79)yrs. The males are 446(44.6%) and females are 554 (55.4%). A high prevalence of recurrent aphthous ulcer is seen in the females 31.76% (p<0.004). And the most common age group affected are 20-29 yrs (36.28%).The prevalence of recurrent aphthous ulcer experienced was 28.2% (n=282).

According to our study Males 124(63.9%) affected by oral ulcer were more compared to Females 70(36.1%). Supporting this Oyetola et.al (Oyetola *et al.*, 2018) in their study, totally 250 patients participated in the study out of that 50 patients are seen with oral ulcers. In that males with oral ulcer are 34 were males (68%) and females are 16 (32%). And oral ulcer is more frequent in the 3rd decade of life 16(32%). In the oral ulcer, the recurrent apthous ulcer was 47(94%) and others were traumatic ulcers (2;4%).

In our study p > 0.05, therefore there was no significant association between gender and type of ulcer but in contrast to our study Patil et.al (Patil *et al.*, 2014) observed a total of 3244 patients with 705 (21.7%) of them presented with recurrent aphthous ulcer. Out of that Females are (56.3%) and males are (43.7%). with the gender difference being statistically significant (p<0.005). This shows that females are affected more commonly than the males. And the age group between 31-40 yrs are more affected most commonly by recurrent aphthous ulcer.

According to our study Males(63.9%) affected by oral ulcer were more compared to Females(36.1%). And the common age group affected was (21-30) yrs but in contrast to our study Safadi et.al (Safadi, 2009). Total subjects

invited to participate in the study were 800 subjects. But the subject who accepted participation in the interview were 684 participants. About 45% of participants were males and 55% were females and the mean age of participants was 37.5 years which ranged from 13 to 68 years old. In that approx 78% of participants reported that they experienced recurrent aphthous ulceration in the past.

In the study of Ashwinirani et.al (Ashwinirani *et al.*, 2017) they observed 71,851 patients, in that only 72 patients were clinically diagnosed to be suffering from RAS. There was 0.1% prevalence of RAS. And higher prevalence was seen in females compared to males and it was most commonly seen in the second and third decades of life which was not in accordance with or study.

This retrospective study has inherent limitations as it was based on clinical case records even though at most care was taken in data extraction. And in this study we have included only the South Indian population of small sample size who was affected by oral ulcer. Which cannot be generalised for a large population and ethnic group. Since the main aim of the study is to find the age and gender predilection of oral ulcer, within the limitations it can be concluded that male predilection was observed when compared to females and predilection of traumatic ulcer was seen compared to recurrent aphthous ulcer among the study population. Future research can be done in a large population with proper representation .

Limitations

Small sample size is a major limitation of this study which cannot be generalised for a large population and ethnic group.

Future Scope

The study should be done in a larger population. Multicentered study should be done including other criterias.

V. CONCLUSION

Within the limitations of the study it can be concluded that males are more commonly affected by oral ulcers when compared to females. Traumatic ulcers were more common compared to Recurrent aphthous ulcers though there was no statistically significant association between age , gender and ulcer types. The data has clinical implications in that the male population of the younger age group need to be aware of the predilection to develop traumatic ulcers.

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