Journal of Contemporary Issues in Business and Government Vol. 27, No. 2, 2021
https://cibg.org.au/

P-ISSN: 2204-1990; E-ISSN: 1323-6903
DOI: 10.47750/cibg.2021.27.02.307

Age and Gender Predilection of Oral Submucous Fibrosis in An Outpatient Population of a Dental College- A Retrospective Study

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Abstract: Oral sub mucous fibrosis (OSMF) is an oral precancerous condition. It is a chronic debilitating and crippling condition of the oral mucosa classified as a potentially malignant disorder. The inflammation and the progression of fibrosis will result in rigidity and trismus. The etiology of OSMF includes tobacco, areca nut chewing, excessive use of chillies and lime in diet, immunological disorders, collagen disorder and nutritional deficiencies. The symptoms are trismus that is reduced mouth opening, oral pain, burning sensation, hearing loss and change of gustatory sensation. A retrospective study was planned with data collection from June 2019 to March 2020 in a university setup. We reviewed the patients records and analysed the data of 86000 patients.The data report includes patient details like gender, age and diagnosis. The records were manually verified by 2 reviewers and the data was tabulated in the Excel sheet followed by statistical analysis using SPSS software (Statistical Product and Service Solutions) in IBM and chi-square tests were performed. Total subject population was 191 in the age range of 11-70 years, males with OSMF were 86(45.0%) and females with OSMF were 7 (3.6%),the majority of patients 26(13.6%) with OSMF were in the 31-40 years age grp. Within the limitations of the study, it can be concluded that male have higher predilection to OSMF when compared with females and the most common age group affected by OSMF was in the age range of (31-40) years.

Keywords: OSMF, Trismus, Oral habits, Treatment, Burning sensation, Age, Gender, Predilection

INTRODUCTION

Oral submucous fibrosis is a premalignant condition and it is a chronic and resistant disease which is characterized by juxta epithelial inflammatory reaction and progressive fibrosis of the submucosal tissue (Pindborg, 1966). OSMF is defined as insidious chronic disease affecting any part of the oral cavity and sometimes pharynx. It is associated with juxta epithelial inflammatory reaction followed by fibroelastic changes of laminate propria and along with that epithelial atrophy which may result in rigidity of the oral mucosa and followed by trismus that is difficulty in opening the mouth or in other words it can be said that it is a condition of juxta epithelial fibrosis, idiopathic scleroderma of the mouth, idiopathic palatal fibrosis, fibrosis of palate and pillars, sclerosing stomatitis and diffuse OSMF (Passi et al., 2017),(Khan et al., 2018).The OSMF disease occurs most commonly in India and South East Asian populations (Sabarinath et al., 2011). There is a high rate of incidence from the past to the present in Indian population. North Western reports show that the incidence of OSMF is 2.6 and 8.5 per 100,000 per year for both males and females and in the South of India were higher that is 9 and 20 per 1000,000 per year for both males and females (Gupta et al., 1980),(Pindborg et al., 1980).

This occurs mostly in the younger and the older individual between 25-35 years that is the 2nd - 4th decade. Usually the onset of the disease is insidious and most often in 2-5 years of the duration. It is most commonly prevalent in Indian subcontinent and Southeast Asian countries (Pindborg et al., 1980; Laskaris, Bovopoulou and Nicolis, 1981). Its significance is that it causes morbidity. It causes loss of functions of the oral cavity because the tissues become rigid and mouth opening becomes difficult and transformation into squamous cell carcinoma is also reported by many authors (Sinor et al., 1990). There is a difference in the OSMF prevalence in Europe, USA, UK and the Middle East countries as OSMF has been reported mostly in the Asian migrants (Markiewicz et al., 2007). The most common sites affected due to OSMF in the oral cavity are buccal mucosa, retromolar region, soft palate, facial pillars, floor of mouth, tongue and the labial mucosa, gingiva (Waal and

van der Waal, 2009). The aim of the study was to find the age and gender predilection of oral submucous fibrosis in an outpatient population of dental college.

Previously our team had conducted numerous clinical trials (Sridharan, Ramani and Patankar, 2017), (Thangaraj et al., 2016), (Gupta and Ramani, 2016), (G. Jayaraj et al., 2015), (Sivaramakrishnan and Ramani, 2015),(Shree et al., 2019), (Viveka et al., 2016) and lab animal studies (Hannah et al., 2018), (Jangid et al., 2015), (Gifrina Jayaraj, Ramani, et al., 2015), (Sridharan et al., 2019), (Swathy, Gheena and Varsha, 2015) and in- vitro studies (Kumar et al., 2015), (Gheena and Ezhilarasan, 2019a), (Gifrina Jayaraj, Sherlin, et al., 2015) over the past 5 years. Now we are focussing on epidemiology surveys. Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J et al., 2018; Menon et al., 2018; Prabakar et al., 2018; Rajeshkumar et al., 2018, 2019; Vishnu Prasad et al., 2018; Wahab et al., 2018; Dua et al., 2019; Duraisamy et al., 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019b; Malli Sureshbabu et al., 2019; Mehta et al., 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran et al., 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma et al., 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi et al., 2020; Samuel, Acharya and Rao, 2020)

This idea for this survey stemmed from the current interest in our community.

MATERIALS AND METHODS

Study Setting

The study was conducted with the approval of the Institutional Ethics Committee [SDC/SIHEC/2020/DIASDATA/0619-0320]. The study consists of one reviewer, one assessor and one guide.

Study Design

The study was designed to include the dental patients with and without OSMF from the outpatient population of 86000 patients who had visited the dental college within the time period of 01 June to 31 March 2020. All the patients diagnosed with OSMF in the time period were taken as study group, age and gender matched patients without associated systemic illness were taken as controls.

Sampling Technique

The study was based on a non probability consecutive sampling method. In order to minimise sampling bias, all case sheets of the patients were reviewed and included.

Data Collection And Tabulation

Data collection was done using the patient database with the timeframe from 01 June to 31 March 2020. The final data obtained of 191 study samples from the archives were imported to Excel, Tabulation was done. The values were tabulated and analysed. Descriptive statistics were performed using SPSS by IBM on the tabulated values. Chi square test was performed and the p value was determined to evaluate the significance of the variables; it was used to evaluate the association between age and gender with diagnosis (patients with and without OSMF). The results were obtained in the form of graphs and tables.

RESULTS & DISCUSSION

The present study had a total sample of 191 and their age ranged from (11-70)years Out of that, patients with OSMFwere 93 and patients without OSMF were 98.

In our study we observed that oral sub mucous fibrosis (OSMF) is more prevalent in males compared to females (45.0% : 3.6%). And the majority of the patients with OSMF were in the age range of 31-40 years.

Table 1

AGE	PATIENT WITH OSMF		PATIENT WITHOUT OSMF		TOTAL		STATISTICAL INTERFERE
	n	%	n	%	n	%	
11-20years	0	.0%	19	9.9%	19	9.9%	X2=36.986 Df=5 0.000<0.05 Significant
21-30years	21	10.9%	41	21.4%	62	32.5%	

31-40years	26	13.6%	17	8.9%	43	22.5%	
41-50years	25	13.0%	13	6.8%	38	19.9%	
51-60years	17	8.9%	7	3.6%	24	12.6%	
61-70years	4	2.0%	1	0.5%	5	2.6%	
TOTAL	93	48.6%	98	51.3%	191	100.0%	

Table 1: Association between patients with OSMF and without OSMF and their age. Here the chi-square test shows that with OSMF patients' age is higher when compared to that without OSMF patients (21.4%). The calculated value is greater than table value (.000<0.05). Therefore, there is significant association between patient age and patients with OSMF and without OSMF.

Table 2

GENDER	PATIENT WITH OSMF		PATIENT WITHOUT OSMF		TOTAL		STATISTICAL INFERENCE
	n	%	n	%	n	%	X2=56.717 Df=1 .000<0.05 Significant
MALE	86	45.0%	40	20.9%	126	66.0%	
FEMALE	7	3.6%	58	30.3%	65	34.0%	
TOTAL	93	48.6%	98	51.3%	191	100.0%	

Table 2 Association between patients with OSMF, without OSMF and their gender. The chi-square test shows that the p value was less than 0.05 (.000<0.05).Therefore there was a significant association between patients with OSMF and without OSMF and their gender.

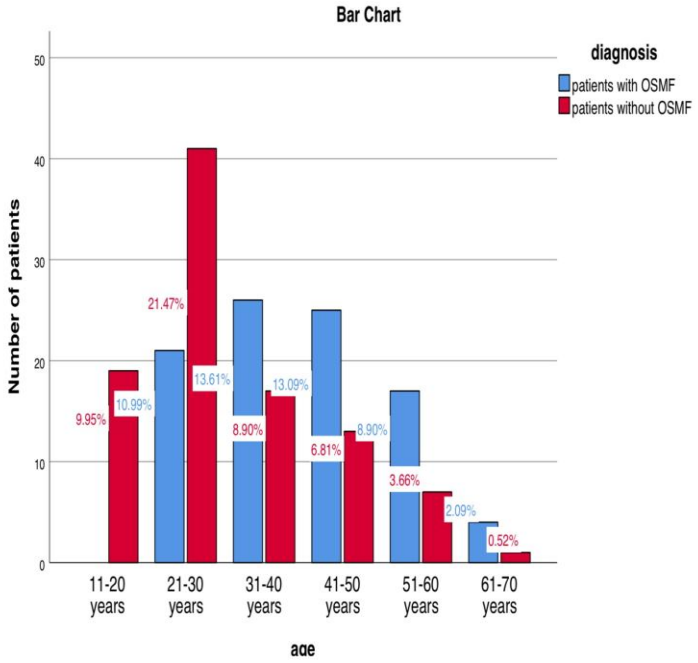

Fig.1: Bar graph represents the association between age and diagnosis (patients with and without OSMF). X Axis represents the age and Y axis represents the number of patients with and without oral submucous fibrosis. Chi-square test was done and association was found to be statistically significant. Pearson Chi-Square Value- 36.986, DF: 5, p=0.000; p <0.001 hence statistically significant, proving patients with oral submucous fibrosis were more predominant in the age group 31- 40 years.

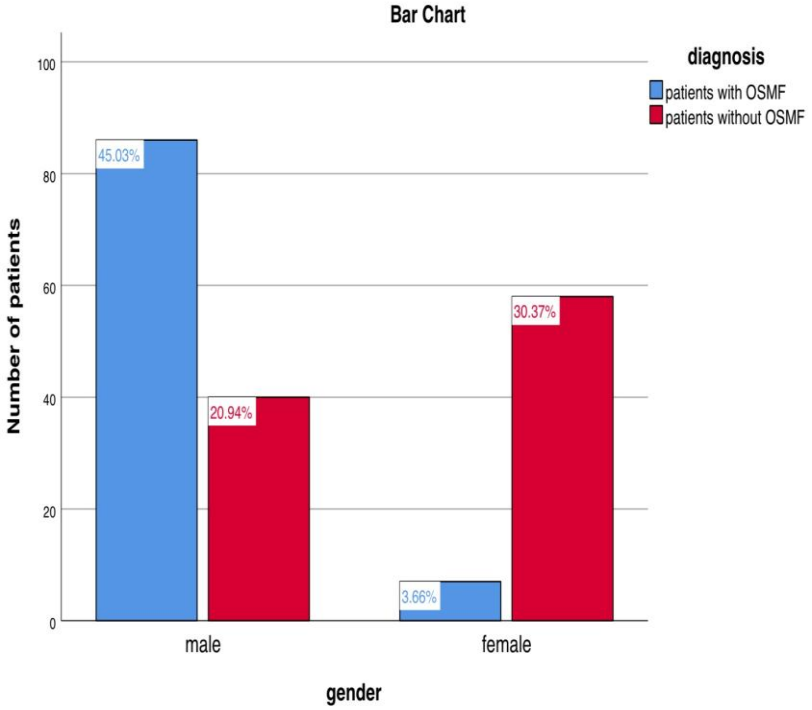

Fig.2: Bar graph represents the association between gender and diagnosis (patients with and without OSMF). X Axis represents the gender and Y Axis represents patients with and without oral submucous fibrosis. Chi-square test was done and association was found to be statistically significant. Pearson Chi-Square Value-56.717, DF:1, p=0.000; p <0.001 hence statistically significant, proving Oral submucous fibrosis is more common in males than females.

In our study a total sample of 191 and their age ranged from (11-70)years Out of that, patients with OSMF were 93 and patients without OSMF were 98. And we observed that oral sub mucous fibrosis (OSMF) is more prevalent in males compared to females (45.0% : 3.6%). And the majority of the patients with OSMF were to the age range of 31-40 years.

On analysing the gender wise distribution, Male patients with OSMF were more predominant compared to Females. In line to our study Nigam NK et.al (Nigam et al., 2014) observed totally 1000 habitual chewers. Out of that males were 678 and females were 322 females, the prevalence of OSMF was found to be 6.3% (63 out of 1000) with a males to female ratio was 6.88:1 (55.8) (p= 0.0004). This may be due to habits like pan. chewing, smoking which are commonly seen in the Male gender

In our study we found Males with OSMF were more predominant compared to Females with OSMF. And the predominant age group affected was 31-40 years. Same as that Sharma et.al (Sharma et al., 2012) in their study observed a total 6800 subject population. Out of that 231(3.39%) subjects presented with Oral submucous fibrosis. Majority of subjects 98 (1.44%) of them belonged to (15-24)years of age group and 93 (1.36%) subjects belong to 25-34 years, followed by 27 (0.39%) subjects was (35-44) years remaining 13 (0.19%) subjects in (45-54) years. And males with oral submucous fibrosis were 188 (81.33%) compared to females with oral submucous fibrosis were 43 (18.62%). This shows that males have higher predilection compared to females. This is due to increased social encounters and economic liberty at the age group in rapidly developing countries. Who are prone to habits like smoking, pan chewing, gutka usage and drinking habits

In our study we found Males with OSMF were more predominant compared to females with OSMF. The predominant age group affected was 31-40 years. Whereas the study done by Harzarey et.al (Hazarey et al., 2006) conducted as a hospital based study in Nagpur over 5 years of period included a 1000 Oral submucous fibrosis cases. Out of this the ratio of Male and female was 4.9:1, OSMF was prevalent in Males (83%) more than females (17%) and higher prevalence of OSMF was seen under the age group (< 30 years) among males compared with females. In addition to these they also found that areca nut chewing was more prevalent in females compared to males and Gutkha & kharra/ Mawa chewing was found to be more prevalent in males compared to the female

In our study we found Males with OSMF were more predominant compared to Females with OSMF. And the predominant age group affected was 31-40 years. Same as that Ahmad M et.al (Ahmad et al., 2006) in their study observed totally 157 Oral Submucous Fibrosis cases with a predominant male population. This may be because of usage of gutka and related products by males more than females. Oral sub mucous fibrosis was more prevalent under the age group (21-40)years.This may be because of low Socio-economic status.

Like our study the Pandya S et.al (Pandya et al., 2009) in their study observed 239 cases out of which males were 204 (85.4%) and females were 35 (14.6%) with the male and female ratio 6.8:1. This shows that Oral SubMucous Fibrosis compared with the females. Prevalence of Oral SubMucous Fibrosis was seen under the age group (21-30) years followed by (31-40) years.Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh et al., 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai et al., 2019; Sridharan et al., 2019; Vijayashree Priyadharsini, 2019; Mathew et al., 2020)

LIMITATIONS

There are certain limitations in our study, a small sample size cannot be generalized for a large population and the study doesn't represent the ethnic group and entire population.

FUTURE SCOPE

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

CONCLUSION

Within the limitations of the study, OSMF is more prevalent in males when compared to females. And the most common age group affected by OSMF is (31-40)years.This gives a baseline target population to be counselled for habit cessation and improved oral hygiene.

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