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PREVALANCE OF OROFACIAL PAIN AMONG DENTAL STUDENTS: A RETROSPECTIVE STUDY

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ABSTRACT

Background: The orofacial pain is a invasive state caused by somatic or psychological etiology arising from the structures which are supplied by the trigeminal nerve. It affects millions of the people around the world. It has hampour the daily activities, social relations and have blow on the quality of life of an individual. The diagnosis of the pain have to be done by identifying the etiology and treatment plan should be done according to it. The study was done to evaluate the main causative agent of orofacial pain in orofacial region. **Objectives:** To evaluate the etiology of orofacial pain among the subjects reporting to the dental college. **Materials and Methods:** A retrospective study was conducted on a group of patients with persistent orofacial pain visiting the dental college. **Results:** According to this study it has found that pulpitis caused due to dental caries is the main cause of orofacial pain. Then followed by periodontal disease, TMJ disorders and neuralgic pain. **Conclusion:** The study concluded that the prevalence of OFP is most commonly in female in middle aged and the etiology of it is the dental caries which causes orofacial pain.

According to the etiology the pain treatment has to be done. Treatment in this condition is an important adjunct to establish evidence-based medical and surgical treatment for this condition.

KEYWORDS: Epidemiology, orofacial pain, pulpitis, TMJ Disorders, Somatic, Quality.

INTRODUCTION

The only thing of an individual which cannot be shared with anyone else is the pain in the orofacial region. It mostly affects the functional and quality of the life of aperson suffering from orofacial pain.[1] It has hampared the life of millons of public in the world and the most serious health problem which has impact on social, functional, physical and phychological activites of the person. The cause of orofacial pain has to be identified and diagnosed properly which is important thing, as many clinician fail to diagnosis the etiology, so proper history, nature, type, onset of pain asking to the subjects is important to conclude proper diagnosis and treatment.[2]

The proper definition of pain is described as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage by activation of nociceptors, which transmits a noxious stimulus to the brain.”[3] The terminology “Oro-facial pain” (OFP) consists of two parts, of which first is facial region and second is Oral region. Pain occurring in facial region includes pain whose origin is below the orbitomeatal line, over the neck and front of ears, while oral region pain includes pain within the oral cavity.[4] The classification of chronic Orofacial pain by IASP handbook describes as ‘Relatively localized syndromes of head and neck.[4-5] Along with orofacial pain, it is important major impact on functioning and quality of life of any individual. It has effects on eating, communication. It also affects TMJ causing TMDs and Pyschological disorders.[6]

Pathway of pain in trigeminal nerve

The sensation of pain in the orofacial region from intraoral and extraoral structures is carried to central nervous system by trigeminal nerve. It consist of two innervations of which first is sensory and second is motor. The sensory information from face and mouth (sensory innervations) is carried by primary afferent neurons in the course of the trigeminal ganglion to synapse with second order neurons in the trigeminal brain stem complex which receives afferent neurons and axons from the seventh, ninth, tenth cranial nerves.[7,8]

Background and objectives

The study is targeted to verify the number of cases reported with pain complaints and etiology of orofacial pain among the subjects reporting to the dental college.

METHODOLOGY

The study was done in the dental college. In this study 400 subjects were included. The study was retrospective study. In this study the orofacial pain subjects prevalence is considerd. Then various questions were asked to the subjects regarding nature, onset, duration, worsening of pain, frequency and pain since how many days. Any systemic history, chief complaint or any related complaints were also asked.

Table 1: Distribution of study subject by Age, Sex.

Characteristics		Number	Percentage
Age (In years)	18-25	56	14 %
	26-35	124	31 %
	36-45	68	17 %
	46-55	64	16 %
	56-65	46	11.5%
	66 and above	42	10.5 %
Sex wise	Male	160	40%
	Female	240	60 %

Table 2: Distribution of study subject by presence of Orofacial pain based on Age, Sex.

Characteristics		Number	Percentage
Age (In years)	18-25	27	6.8%
	26-35	74	18.25 %
	36-45	62	15.5%
	46-55	49	12.25%
	56-65	11	2.8%
	66 and above	7	1.8 %
Sex wise	Male	105	26.25%
	Female	125	31.25%

Table 3: Study subjects by location of pain on Orofacial region.

Types of OFP	Number	Percentage
Jaw joint	10	2.5%
Front of ears	14	3.5 %
Around eyes	6	1.5%
While opening	15	3.8%
Shooting	4	1%
Joint (Chewing)	62	15.5%
Forehead	22	5.5 %
Headache	28	7 %

Toothache	96	24%
Gums	34	8.5%
Sore spots	22	5.5%
Tongue	3	0.8%
Sensitivity	47	11.75
Total	363	90.75

Table 4: Comparasion of subjects by intensity of OFP by Numerical Analog scale.

Numerical Analog Scale	Number	Percentage (%)
1	26	6.5
2	12	3
3	15	3.75
4	37	9.25
5	35	8.75
6	24	6
7	27	6.75
8	21	5.25
9	7	1.75
10	26	6.5

Table 5: Comparasion of subjects by pain characteristics of OFP.

Characteristics Of OFP							
Since how many days pain present		**No**	**%**	**Male**	**%**	**Female**	**%**
	< 1 week	124	31	61	38.125	63	26.25
	1 month	85	21.25	37	23.13	48	20
	>1 month	21	5.25	9	5.625	12	5
When pain symptoms Worsen		No	%	Male	%	Feamle	%
	Upon rise	46	11.5	21	13.125	25	10.42
	Morning	38	9.5	18	11.25	20	8.4
	Afternoon	15	3.75	4	2.5	9	3.75
	Evening	54	13.5	23	14.375	31	13
	Sleep	77	19.25	35	21.875	42	17.5
Duration of pain		No	%	Male	%	Female	%
	< 1 hr	84	21	35	21.875	49	20.41
	1-6 hrs	71	17.75	28	17.5	43	17.8
	7-12 hrs	28	7	11	6.9	17	7.08
	>1day	47	11.8	18	11.25	29	12.1

RESULTS

The study was conducted in the college where subjects suffering from orofacial pain were considered in the study. The study was conducted with total number of 400 subjects suffering from orofacial pain. The number of male and females in the study were 160(40%) and 240 (60%) respectively. There prevalence of orofacial pain was seen in women with 31.25% while male gender show prevalnace of 26.25% (Table 1,2) The study was done on different age group starting from 18 years to more than 66 years. The youngest subject suffering from

orofaical pain was 18 years and older subject was 69 years. There were six age group from 18 yrs-25 years first age group, second age group was of 26yrs-35 years, third 36yrs -45 yrs, while fourth was from 46 yrs-55 yrs.

The fifth was from 55yrs -65 yrs and the last group was from more than 66 years. The more number of subjects were in second group (26 yrs-35 yrs) of 124 subjects (31%) followed by third group (36 yrs-45 yrs) with 68 subjects (17%), followed by group (46 yrs -55 yrs) of 64 subjects (16%), then 18 yrs -25 yrs with 56 subjects (14%) and second last group of 56 yrs -65 yrs of 46 subjects (11.5%) and least number of subjects were present in last group which is from more than 66 years of 42 subjects (10.5).(Table 1)

The orofacial pain has affected mostly in second age group of 74 subjects (18.5%),followed by third group 62 subjects (15.5%), the least subjects suffering from orofacial pain were of group 6 of 7 subjects (1.8%).(Table2). The questions were asked regarding the location of orofacial pain in various part of the region. It has been found that according to our study toothache was the highest causative agent for orofacial pain with 96 of the individuals affected. While second most cause of orofacial pain was gingival and periodontal compromised condition(34 sub) and sensitivity of tooth(37 sub). The most functional movement affected due to orofacial pain is chewing the food(62 Subjects). The forehead region causing headache is the most affected location of orofacial pain as per our study.(Table 3)

The intensity of pain has be calculated by numerical values which show how much intensity of pain is the subjects suffering from. In our study the 4^{th} number in the numerical value was told by maximum number of subjects followed by 5^{th} number. and the least number was told 9^{th} by the subjects suffering from orofacial pain(Table 4).

There are various charactertics of pain like frequency, onset, nature, duration, symptoms when pain worsen, aggervating factors, relieving factors. Few characteristics from these are included in our study which helps in diagnosis and treatment plan of the subjects. The first characteristic features included in our study was since how many days pain was present, in our study the maximum number of subjects with orofacial pain were of less than one week (7 days) and minimum subjects has orofacial of more than one month. The next characteristic feature is worsening pain in orofacial region was maximum in sleep time and evening period and least in afternoon. The last characteristic included in study was duration of pain in

orofacial region which was more in less than 1 hr in maximum number of subjects and least in 7-12 hrs.(Table 5)

DISCUSSION

The response rate in this study was 100% which was maximum as compared to previous studies of 74%.[4] But the same response rate of 100% was found in one study[9] and one study shows95% response rate.[10] According to our study females have more prevalane of orofacial pain which was similar to the previous studies.[11,12,13]

The overall prevalence of OFP in our study was 57.5 % which was similar to this studies[7, 12,14], while some study has less prevalence of 40 % which was less compared to our study.[15,16,17] The occurance of orofacial pain was more in young generation which was similar to the studies mentioned.[4,12,13] According to some studiesthey have mentioned that there is noassociation of orofacail pain with any age group.[18,19]

The most common cause of orofacial pain was tooth ache which was similar to the results of other previous studies.[16, 17, 19] Then coming to the location of orofacial pain headache in the forhead region was common with previous studies mentioned.[4, 6] same prevalence of least cause of orofacial was joint pain which was similar to this study.[20, 21]

The pain has various characterstic features out of which few are included in this study, majority of subjects having pain since less than 1month which was contrast when compared to the studied mentioned.[4,6,22]

Intensity of orofacial pain was recorded by numerical scale which has value from 0-10, in our study subjects has maximum number of value of 5th and 7th number which was controversial to our study.[6] The symptoms when the pain worsen was maximum in sllep and evening was similar to studies discussed.[2] The function affected due to orofacial pain was chewing of food which was same to the study mentioned.[6,23,24]

CONCLUSION

The study concluded that orofacial pain has more prevalence in female gender and in group 2 age group. The main cause of orofacial pain was toothache and function affected was chewing. Headache was seen in more number of subjects. The intensity of pain in numerical analog scale was maximum in 4th and 5th number. The maximum duration of pain the subjects were suffering was of less than 1 hour. The pain was worsening in evening and night time in

maximum number of subjects. Depending on the etiology multidisciplinary approaches and a biopsychosocial treatment modality is essential adjunct to recognized evidence-based medical and surgical treatment of these conditions.

REFERENCES

1. Jeffrey PO. "The clinical management of Oro facial pain". 6th ed. Quintessence publishing co, Inc, 2005.
2. Merskey H. Pain terms: a list with definitions and notes on usage. Recommended by the IASP Subcommittee on Taxonomy. Pain, 1979 June; 6(3): 249.
3. Merril RL. Central mechanisms of orofacial pain. Dent Clin North Am, 2007; 51: 45-59.
4. Macfarlane TV, Blinkhorn AS, Davies RM, Kincey J, Worthington HV. Oro- facial pain in the community: prevalence and associated impact.Community Dent Oral Epidemiol, 2002 Feb; 30(1): 52-60.
5. Macfarlane TV, Glenny AM, Worthington AV Systematic review of population- Based epidemiological studies of oro-facial pain. J Dent, 2001 Sep; 29(7): 451 67.
6. Murray H, Locker D, Mock D, Tenenbaum HC. Pain and quality of life in patients referred to a craniofacial pain unit. J Orofac Pain, 1996 Winter; 10(4): 316- 23.
7. Shephard MK, Macgregor EA, Zakrzewska JM. Orofacial pain: A guide for the headache physician. Headache, 2014; 54: 22-39.
8. Benoliel R, Birman N, Eliav E, Sharav Y. The International Classification of Headache Disorders: Accurate diagnosis of orofacial pain? Cephalalgia, 2008; 28: 752-62.
9. Molin C, Carlsson GE, Friling B, Hedegard B. Frequency of symptoms of Mandibular dysfunction in young Swedish men. J Oral Rehabil, 1976 Jan; 3(1): 9-18.
10. Crook J, Rideout E, Browne G. The prevalence of pain complaints in the general population. Pain, 1984; 18: 299-14.
11. Jaafar N, Razak IA, Zain RB. The social impact of oral and facial pain in an industrial population. Ann Acad Med Singapore, 1989 Sep; 18(5): 553-5.
12. Locker D, Grushka M. Prevalence of oral and facial pain and discomfort: preliminary results of a mail survey. Community Dent Oral Epidemiol, 1987; 15: 169-72.
13. Locker D. Yasmin Miller. "Subjectively reported oral health status in an adult population"Community Dent Oral Epidemiol, 1994; 22: 425-30.
14. Locker D, leake JL, Hamilton M, Hicks T, Lee J. The oral health status of older adults in four Ontario communities. J Can Dental association, 1991; 57: 727-32.

15. Aggarwal VR, Macfarlane TV, Macfarlane GJ: Why is pain more common amongst people living in areas of low socio-economic status? A population- based cross-sectional study. Br Dent J., 2003 Apr 12; 194(7): 383-7.
16. Locker D, Grushka M. The impact of dental and facial pain. J Dent Res, 1987 Sep; 66(9): 1414-7.
17. Locker D, Slade G. Prevalence of symptoms associated with TMJ disorders in Canadian population. Community Dent Oral Epidemiol, 1988; 16: 310-313.
18. Reisine ST, Fertig J, Weber J, Leder S. Impact of dental conditions on patients' quality of life. Community Dent Oral Epidemiol, 1989 Feb; 17(1): 7-10.
19. Lipton JA, Ship JA, Larach-Robinson D. Estimated prevalence and distribution of reported Orofacial pain in the United States. J Am Dent Assoc, 1993 Oct; 124(10): 115-21.
20. Chung JW, Kim JH, Kim HD, Kho HS, Kim YK, Chung SC. Chronic orofacial pain among Korean elders: prevalence, and impact using the graded chronic pain scale. Pain, 2004 Nov; 112(1-2): 164-70.
21. Riley JL, Gilbert GH, Heft MW: Orofacial pain symptom prevalence: selective sex differences in the elderly? Pain, 1998 May; 76(1-2): 97-104.
22. Riley JL 3rd, Gilbert GH, Heft MW. Socioeconomic and demographic disparities in symptoms of orofacial pain. J Public Health Dent, 2003 summer; 63(3): 166-73.
23. Dao TT, Lund JP, Lavigne GJ. Comparison of pain and quality of life in bruxers and patients with myofascial pain of the masticatory muscles. J Orofac Pain, 1994 Fall; 8(4): 350-6.
24. Bush FM, Harkins Sw. Pain related limitation in daily living in patients with chronic oro facial pain: psychometric properties of a disability index. J Orofac Pain, 1995; 9: 57-63.