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Original Article

Antidepressant Drug Effect on Periodontal Status in Chronic Periodontitis Patients

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Abstract :

Patients with problems related to central nervous system dysfunctions are often treated with psychotropic drugs. These include antipsychotics, antidepressants, mood stabilizers, anticonvulsants, and drugs blocking specific receptors in the brain such as anticholinergics or beta-blockers. However, these medications have serious side effects affecting the oral health. The purpose of this study is to explore antidepressant drug effect in chronic periodontitis patients.

Aim : To explore the effect of antidepressant drug in chronic periodontitis patients.

Material and Methods : The study comprised of 100 subjects, 50 periodontally healthy subjects, 50 chronic periodontitis subjects .Clinical examination was done and the following parameters were assessed: Gingival index, Clinical Attachment Loss.

Introduction

Depression is a psychiatric disorder in which negative affect, depressed mood, disturbed thoughts, and altered behaviors persist for a minimum of two week. [1]Antidepressants are prescribed for diverse therapeutic reasons including a variety of psychiatric disorders, pain control, insomnia, substance abuse and eating disorders.

Oral reactions to medications are common and affect patient's quality of life. Almost all classes of drugs, particularly those used continuously, such as antidepressants, may cause oral alterations. If not suitably treated, these may aggravate the patient's general state of health and affect his/her oral health .[1]

A large number of medications used for the treatment of psychiatric diseases, have the side effects of dry mouth, diminished salivary flow speed and/or alteration in saliva composition [3].The abusive use of drugs, mainly by elderly patients, may generate oral side effects (Lamy, 1984; Ciancio, 2004; ADA, 2005).

Persons with depression are also at high risk of developing periodontal disease, because neglected oral hygiene, increased smoking and altered immune response, associated with xerostomia facilitate increased colonization by pathologic bacteria in the mouth, leading to collapse of the periodontium (Moss et al., 1996; Elter et al., 1999).

Patients that receive atypical antidepressants may sometimes develop movement disorders that include bruxism or tooth-grinding, which may aggravate the patient's periodontal status (Brow & Hong, 1999).

Periodontitis is a chronic inflammatory disorder that gives rise to tissue damage and loss, as a result of the complex interaction between pathogenic bacteria and host's immune response.

Objectives of the Study

To evaluate the oral hygiene status among the subjects who are medicated under antidepressant drug.

Material and Methods

Source of Data

150 subjects who are medicated on antidepressant drug was selected from the Department of Psychiatry, K.S Hegde Hospital,and A.B. Shetty Memorial Institute of Dental Sciences, Deralakatte, Mangalore. Written informed consent was taken from all the participants before start of the study and was divided into two groups.

- Group 1-75 subjects who are medicated on antidepressant drugs for less than 6 months.
- Group II-75 subjects who are medicated on antidepressant drugs more than 6 months.

Screening Examination Included

- Medical history and Dental history.
- Whole mouth clinical periodontal measurements will be recorded.
- Gingival index [Loe and Silness 1963] to measure gingival status is doneclinical attachment levels will be determined with a UNC-15 probe.

Criteria for Selection

Inclusion Criteria

- Subject with a minimum complement of 20 teeth.
- Patients who are medicated on antidepressant drug (3-9 months).

Exclusion Criteria

Patients who have undergone any periodontal treatment in the last 6 months.

Pregnant women or lactating women.

Patients who are on antidepressant drugs less than 3 months.

Statistical analysis

Comparison of the two groups was done using independent t test.

Results

FREQUENCY TABLES		
1) Have you visited dentist earlier?	Percent	
YES	102	68
NO	48	32
Total	150	100
2) How often do you visit dentist?		
ONCE IN 3 MONTHS	34	22.7
ONCE IN 6 MONTHS	35	23.3
ONCE A YEAR	33	22
ONLY IF NEED ARISES	48	32
Total	150	100
3) Reason for visiting dentist		
General Check up	20	13.3
Stains and deposits on the teeth	37	24.7
Bleeding gums	36	24
Pain	57	38
Total	150	100
do you clean your teeth		
YES	101	67.3
NO	49	32.7
Total	150	100
5)how do you clean your teeth		
neem stick	38	25.3
charcoal	35	23.3
finger and tooth powder	46	30.7
toothbrush and paste	31	20.7
Total	150	100
7)Ideal technique of brushing		
HORIZONTAL	94	62.7
VERTICAL	31	20.7
CIRCULAR	6	4
BOTH A AND B	19	12.7
Total	150	100
8) Have you experienced bleeding while brushing?		
YES	78	52
NO	72	48
Total	150	100
9)If yes, what have you done for bleeding gums?		
CONSULTED DENTIST	53	35.3
NOT VISITED DENTIST	59	39.3
SELF MEDICATION	38	25.3
Total	150	100
10)Do you think oral health can effect general health		
YES	50	33.3
NO	100	66.7
Total	150	100

11)Have you got oral prophylaxis (teeth cleaning)done		
YES	43	28.7
NO	107	71.3
Total	150	100
12)From where do you obtain your information on oral hygiene practices		
FROM THE DOCTOR/DENTIST	42	28
FROM MASS MEDIA	99	66
FROM SCHOOL/COLLEGE	9	6
Total	150	100
13)Do you smoke		
YES	94	62.7
NO	56	37.3
Total	150	100
14) If yes, how often?		
CURRENT SMOKER	59	39.3
FORMER SMOKER	36	24
NON SMOKER	55	36.7
Total	150	100
15)Are you aware of the deleterious effects of smoking on gum problems		
YES	65	43.3
NO	85	56.7
Total	150	100
16)Do you chew pan		
YES	75	50
NO	75	50
Total	150	100
17)Are you aware of the deleterious effects of pan chewing on gums		
YES	37	24.7
NO	113	75.3
Total	150	100
18)Are you on any drug therapy		
YES	113	75.3
NO	37	24.7
Total	150	100
19)If so , which drug		
ANTIDEPRESSANT	111	74
ANTIHYPERTENSIVE	12	8
ANTIPSYCHOTIC	13	8.7
ANY OTHER	14	9.3
Total	150	100

Discussion

The results from above states that subjects who are medicated with antidepressant drugs for more than 6 months showed poor oral hygiene compared to those who were medicated for less than 6 months, using two clinical parameters: gingival index and clinical attachment loss. This may be due to neglected oral hygiene, increased smoking and altered immune response. Oral diseases in psychiatric patients are usually a result of bad oral hygiene and psychopharmaceutical side-effects.[14]

A study conducted by David Halpern et al, stated that 37% of adults experience mood disorders at some point of time in their lives and by receiving many treatments and medications it undergoes adverse dental side effects, medications which are prescribed for mood disorder can cause dry mouth and increased rate of dental caries and periodontal disease especially in patients who are prescribed under antidepressant drugs. A depressed patient frequently has little interest or energy for even basic self-care activities[12]. Decreased energy and motivation, as well as negative self-views associated with depression may have a detrimental effect on oral hygiene habits and compliance with treatment recommendations[11].

Subjects who are under medication still continue their habits like paan chewing, smoking and are unaware of the deleterious effects on gums as shown in the above results. Based on many population studies conducted among pan chewing and smoking patients, extrinsic staining of teeth due to paan and tobacco deposits is often observed particularly when good oral hygiene prophylaxis is lacking and where regular dental care is minimal.[8]Subjects may chew paan to help deal with stress and boredom. Dealing with stress in other ways can help to reduce paan chewing. Some may chew paan to relieve tooth and gum pain. It is important to see dentist for proper dental treatment.[8]

Due to the improper brushing, maintaining oral hygiene, brushing technique and other habits changes healthy gingiva into gingivitis and later to chronic periodontitis causes poor oral status resulting in xerostomia and halitosis due to continuous use of antidepressant drugs. A study was conducted to examine the side effects in mouth due to antidepressant drugs which concluded that xerostomia is the main oral side effect associated with the various classes of drugs, particularly those used continuously.[1]The daily use of multiple medications to treat chronic diseases and conditions is common among older adult. A recent study found that 40% of Medicare beneficiaries reported taking

five or more prescription medications. These medicines can lead to an increased risk of serious adverse drug events, including a variety of oral problems. For example, mouth dryness.[13]

Subjects are unaware of the fact that oral health can affect the general health as mentioned in above results. Hence they should be advised, create a routine checkup and treatment should be provided and create awareness among themselves and others to improve their oral health as well as general health. Oral health affects people physically and psychologically and influences them, as well as their feelings of social well-being.[4]Many of the quality of life indicators in dentistry have focused primarily on older age groups, partly on the assumption that they would have had a lifetime's experience of oral ill health and thus are likely to perceive oral health as having a greater impact on their quality of life.[15]

Family members, however, must also be involved during the development of the preventative dental regime; if the depression does not adequately respond to therapy, the patient may lack the motivation and concentration necessary to autonomously comply[13].

Instructions should be given in proper tooth brushing and flossing methods that maximize dental plaque removal. Artificial salivary products, antiseptic mouthwash (eg, chlorhexidine), and a 0.05% sodium fluoride, mouth rinse may be prescribed for patients with xerostomia. Dental treatment should consist of subgingival scaling, root planing and curettage, caries control, application of fluoride gel, and dental restorations. It is dentists' role as regards patients that make use of medications, to keep a detailed and updated medical history of their patients, in order to be alert to problems related to medication, and the impact of this on the diagnosis and treatment plan.[1]

It should be recognized that dentistry, in concert with medicine, has much to offer patients who are suffering under mental depression.

Conclusion

Antidepressants are medications prescribed to patients of all ages, for the treatment of a variety of psychiatric diseases (depression, affective disease, insomnia, anxiety, the panic syndrome and bipolar disorder) and is associated with a number of significant oral reactions. These complications, including xerostomia, sialoadenitis, gingivitis, dysgeusia, glossitis, tongue edema and discoloration and stomatitis, almost always appear due to dysfunction of the salivary gland induced by the medication.

Xerostomia is the main oral side effect associated with the various classes of drugs, particularly those used continuously. This symptom may be the result of both diminished salivary secretion and an alteration in saliva composition which can affect patient's emotional well-being, aggravate his/her general state of health, as well as affect his/her oral health. In order to determine whether or not the patient presents hyposalivation, the dentist can have a complementary exam, called sialometry, may be performed. If there is any doubt about the composition of the saliva, there are biochemical tests that can reveal alteration in its composition.

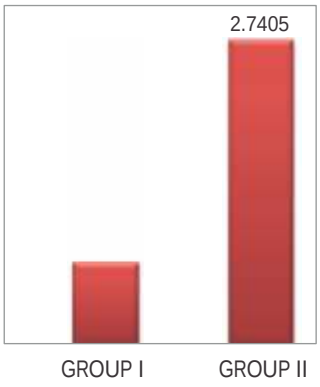
Communication between the doctor and dentist is extremely important, so that together, they re-establish the patient's general and oral health as far as possible.

Independent T Test Used Here With

	GROUP	N	Mean	Std. Deviation	t	df	P VALUE
Gingival index	GROUP 1	75	0.9511	0.48851	-		
	GROUP 2	75	2.7405	0.33376	26.19	130.73	<0.001
Clinical attachment loss	GROUP 1	75	4.406133	28.04326	-		
	GROUP 2	75	7.2392	1.263503	0.874	148	0.384

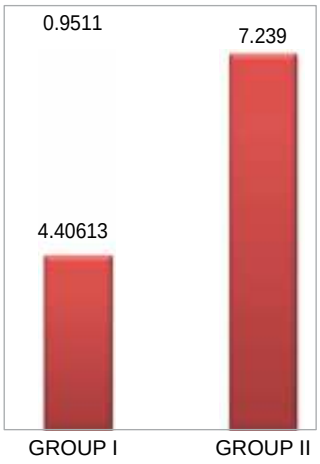
The comparison of the two groups indicates that there is higher values in group 2 compared to group 1 in case of gingival index (Loe and Sillness 1985)and clinical attachment loss.

Gingival Index



From the above results, a bar chart was plotted in which group2 (subjects who are under antidepressant medication more than 6 months)show higher value compared to group 1 (subjects who are under antidepressant medication for less than 6 months) solely for the purpose of assess the severity of gingivitis .Gingivitis is inflammation of the gingiva that does not result in clinical attachment loss, which is reversible and is often caused by inadequate oral hygiene.

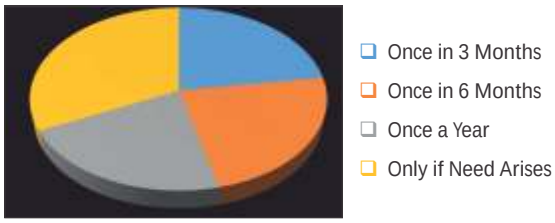
Clinical Attachment Loss



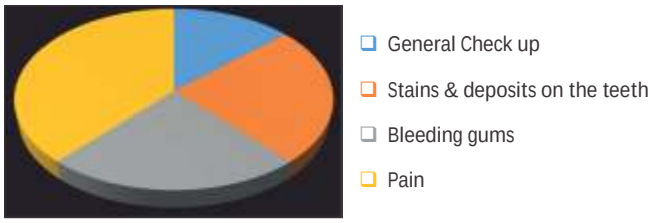
From the above results, a bar chart was plotted in which group2 (subjects who are under antidepressant medication more than 6 months)show higher value compared to group 1 (subjects who are under antidepressant medication for less than 6 months), represents the disease severity in terms of loss of support for the teeth due to long term intake of medication. Periodontitis is inflammation of the gingival and the adjacent attachment apparatus and is characterized by loss of connective tissue attachment and alveolar bone.Adverse drug reactions are a greater concern and more likely to occur if drugs are distributed via systemic route.

1) Have you visited dentist earlier?

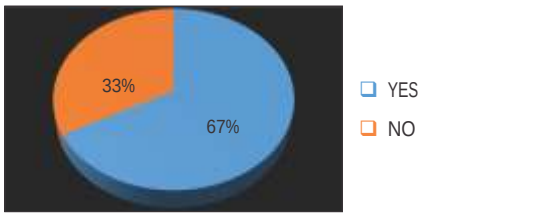
2) How often do you visit dentist?



3) Reason for visiting dentist?

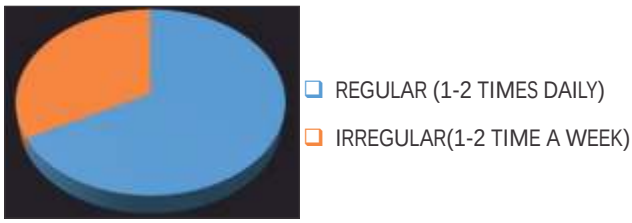


4) Do you clean your teeth?

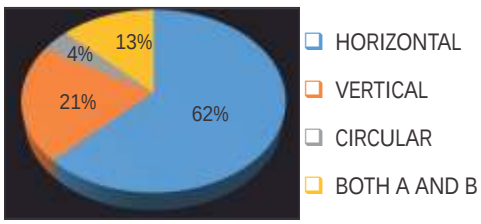


5) How do you clean your teeth?

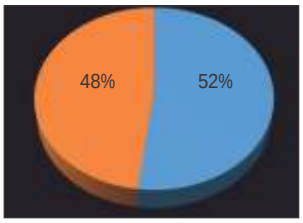
6) Do you clean your teeth regularly?



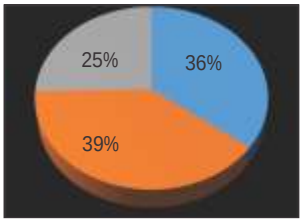
7) Ideal technique of brushing



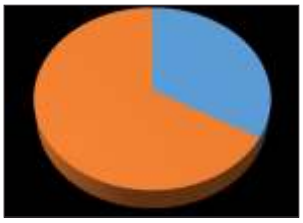
8) Have you experienced bleeding while brushing?



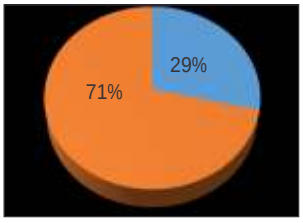
9) If yes, what have you done for bleeding gums?



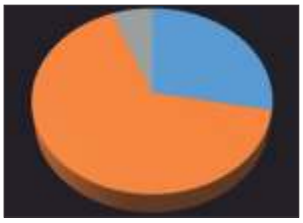
10) Do you think oral health can effect general health?



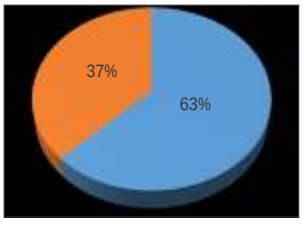
11) Have you got oral prophylaxis (teeth cleaning) done?



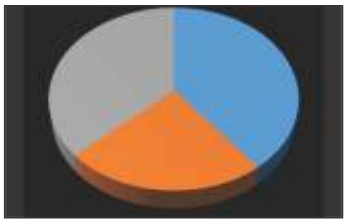
12) From where do you obtain your information on oral hygiene practices?



13) Do you smoke?

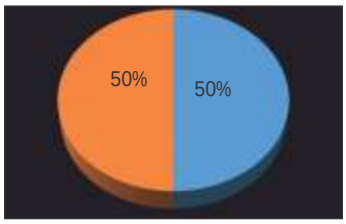


14) Ifyes, how often?

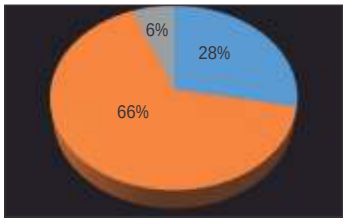


15) Are you aware of the deleterious effects of smoking on gum problems?

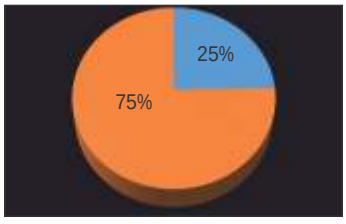
16) Do you chew pan?



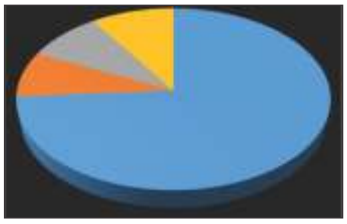
17) Ifyes, how long?



18) Are you aware of the deleterious effects of pan chewing on gums?



19) Are you medicated on any drug?



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