Dental Consequences and Management in Patients with Major Depressive Disorder

Verma A.¹, Yadav S.², Sachdeva A.³

Abstract:
Depression presents cognitive symptoms that can impact dental health and treatment. Problems may arise from depressive symptoms, physiological consequences of depression, or from side effects of antidepressant medication. Physiological consequences of depression may lead to poor dental health due to xerostomia, cariogenic diet, and impaired immune functioning contributing to dental caries, oral infection and other dental problems. The role of dental professionals is to recognize a depressive condition, be familiar with the patient’s medical history, current medications, depression related possible dental problems, be aware of the alteration in the dental treatment planning and possibly facilitate an appropriate referral for evaluation of the depressive symptoms.

Keywords: Major depressive disorder; Anti-depressants; Dental management.

Introduction:
Major depressive disorder (MDD) also known as unipolar depression is a psychiatric illness of at least two weeks duration during which the patient experiences dysphoria (depressed mood, sad, hopeless, irritable, anxious), accompanied by low self-esteem, and by loss of interest or pleasure in normally enjoyable activities[1]. Suicide is the most serious outcome of MDD, with 7% of men and 1% of women committing suicide[2,3]. Depression is a major cause of morbidity worldwide[4]. In most countries the number of people who would suffer from depression during their lives fall within 8–12% range[5,6]. Family member or patient himself may note alterations in appetite; insomnia or early awakening; agitation; slowed speech and body movements (psychomotor retardation); and an impaired ability to think, concentrate or make decisions[1,7].

The onset of the disorder varies, with symptoms developing over days to weeks. Untreated episodes typically last six months or longer. Eventually, the episode ends with a complete remission of symptoms in about 70% of patients[8-11].

Our aim is to recognize patients with MDD, make informed referrals to psychiatrist for the diagnosis and treatment, and to offer these patients complete dental treatment.

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Incidence and Prevalence:

MDD is currently ranked as the fourth most common cause of disability and premature death in the world by the World Health Organization\(^\text{[12]}\). The prevalence rate is 5 to 9% for women and 2 to 3% for men\(^\text{[1,13]}\). MDD is twice as common in adolescent and adult females as in adolescent and adult males\(^\text{[1]}\).

People are most likely to suffer from their first depressive episode between the ages of 30 and 40, and there is a second, smaller peak of incidence between ages 50 and 60.

The propensity to develop MDD is 40% genetic and 60% environmental. Neurological disorders such as multiple sclerosis, Parkinson’s disease, stroke and head injury also are associated with a higher frequency of depression.

People with chronic diseases like coronary artery disease and patients with cancer are at high risk of developing MDD with the prevalence rate 25% to 40%. Approximately 30% people with MDD develop a substance abuse disorder (that is, alcohol, illicit drugs) within their lifetime.

Dental Consequences of Depression:

The most commonly identified dental implications of depression are reciprocal relationship between chronic facial pain and depression with studies showing rates of 41% to 78%. Decreased energy and motivation associated with depression may have a detrimental effect on oral hygiene habits\(^\text{1}\) and compliance with treatment recommendations.

Oral symptoms may be the first or only manifestation of a MDD like facial pain, preoccupation with dentures, excessive palatal erosion, or self inflicted injury and enamel erosion is also reported in sufferers of both anorexia and bulimia. Most of these patients also have temporomandibular joint dysfunction and burning mouth syndrome. Caries is high due to poor diet, high sugar intake. In patients with substance abuse disorder there is an incidence of periodontal disease, due to negligence and high incidence of smoking. Trauma and dentofacial injury are common and often untreated.

Fear, anxiety and dental phobia are significant factors which influence acceptance of dental care. A number of factors such as mood, motivation, self esteem, ability to think logically, accept and understand the treatment plan, and ability to co-operate with dental treatment may also affect the acceptance of the dental treatment.

The presence of pathogenic bacteria colonization can be caused by impaired immune system functioning related to depression.

Depression is also believed to be associated with decreased metabolism of serotonin, which in turn is associated with a tendency to consume more carbohydrates, which provides favorable conditions for aciduric bacteria to grow. A high count of these bacteria causes the development and progression of dental caries and periodontal abscess.

Treatment for MDD usually includes pharmacological or psychotherapeutic intervention, or both. Antidepressant medications like selective serotonin reuptake inhibitors (SSRI), atypical antidepressants, tricyclic antidepressants (TCA) and monoamine oxidase inhibitors (MAOI) are been used to treat MDD, each with varying dental related side effects, like xerostomia, dysgeusia, stomatitis, glossitis, sialadenitis, gingivitis, edema and discoloration of the tongue ( Table 1).
Table 1: Dental related side effects

<table>
<thead>
<tr>
<th>Antidepressant medications</th>
<th>Dental related side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Selective serotonin reuptake inhibitors</strong></td>
<td>Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, sialadenitis, discolored tongue, tongue edema, bruxism.</td>
</tr>
<tr>
<td><strong>Atypical antidepressants</strong></td>
<td>Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, sialadenitis, discolored tongue, tongue edema, monoliasis, periodontal abscesses, oral ulcers, sinusitis, bruxism, and halitosis.</td>
</tr>
<tr>
<td><strong>Tricyclic antidepressants</strong></td>
<td>Xerostomia, dysgeusia, stomatitis, sialadenitis, tongue edema, cheilitis.</td>
</tr>
<tr>
<td><strong>Monoamine oxidase inhibitors</strong></td>
<td>Xerostomia</td>
</tr>
</tbody>
</table>

Dental Treatment of Patients with Depression:

Lack of interest and low self esteem associated with MDD are factors that contribute to inadequate self-care and regular dental attendance. Many patients who are receiving anti-depression treatment may be reluctant to admit this because of the perceived stigma associated with mental illness. Oral health and dental management is also compromised by medical problems associated with alcohol abuse, drug addiction, smoking, and stress as well as prescribed anti-depressant medication. Depressed patients may be uncooperative and irritable during dental treatment, appear unappreciative and have numerous complaints that are inconsistent with objective findings.

The key to reducing the barrier to oral health care is to establish effective and ongoing communication between the patient, dental team, psychiatrist. Consent for treatment should be obtained following professional guidelines. Before a patient begins dental treatment, the dentist should consult with his or her psychiatrist (after informing the patient). Information requested should include the patient’s current psychological status and current psychotropic medication regimen. Treatment planning, which is patient centered, realistic and flexible, and which takes into account the problems associated with depression is more likely to be acceptable and successful. A small number of patients will require the use of sedation techniques or general anesthesia. Patients with a history of alcohol abuse should undergo liver function tests, a complete blood cell count and a coagulation profile. To overcome such barriers and obtain necessary information, the dentist should exhibit a supportive, nonjudgmental attitude.
Dental team should be aware of-

a) Depression and its symptoms.

b) Social and behavioral aspects of MDD.

c) Dental related side effects of medications and drug interactions.

d) Dental management.

e) Coping with aggression and handling stress.

Preventive dental education is vital for these patients and their families. Information regarding proper tooth brushing and flossing methods should be given. Artificial salivary products are prescribed for patients with xerostomia. Dental treatment should include sub gingival scaling, root planing and curettage, caries control and restorative treatment. Profound local anesthesia is mandatory to perform these procedures adequately in depressed and anxious patients.

In patients receiving TCAs, precaution is taken when administering local anesthetics containing adrenergic vasoconstrictors. TCAs block the reuptake of these vasoconstrictors and block muscarinic and α1-adrenergic receptors, thereby directly depressing the heart. Epinephrine moderately interacts with TCAs but can be used, in a dosage not to exceed 0.04 milligrams (the equivalent of four cartridges of 1:200,000 epinephrine) and with careful aspiration to avoid intravascular administration. Levonordefrin adversely interacts with TCAs, resulting in dramatic increases in systolic blood pressure and cardiac dysrrhythmias.

Adverse interactions between SSRIs and some medications used in dentistry may occur because these antidepressants inhibit certain metabolic pathways. Specifically, SSRIs inhibit the cytochrome P-450 isoenzymes needed to adequately metabolize codeine, benzodiazepines, erythromycin and carbamazepine. Therefore, these dental therapeutic agents should be used cautiously and in reduced dosages.

TCAs may potentiate the depressant effects of sedative-hypnotics, narcotics and barbiturates, which can cause severe respiratory depression. Care should also be taken when prescribing acetaminophen because of its ability to increase TCA levels.

Patients being treated with MAOIs can receive local anesthetic solutions containing epinephrine or levonordefrin, as these drugs do not potentiate their cardiac effects. However, narcotic analgesics for these patients should be avoided because of a potentially toxic interaction in which severe hyperthermia, hypertension and tachycardia may develop.

Dental professionals are recommended to perform a clinical examination and oral prophylaxis at three-month follow-up visits and fluoride gel application. Any defects in the natural dentition or in prosthesis should also be corrected during the visits. Patients may experience enhanced self-esteem as a result of dental treatment, which may contribute to the psychotherapeutic aspect of management.

**Conclusion:**

Major depression is a common disorder that has been demonstrated to affect physical as well as mental health, with an increasing prevalence among young adults. It may be associated with a disinterest in performing appropriate oral hygiene techniques, a cariogenic diet, diminished salivary flow, rampant dental decay, advanced periodontal disease, and oral dysesthesias. Many medications used to treat the disease magnify the xerostomia and are associated with dental related side effects. We must emphasize that appropriate dental management should be done including
preventive dental education programme, the use of saliva substitutes and anti-caries agents, and special precautions when administering local anesthetics containing vasoconstrictors and prescribing analgesics.

References:


