

# Dental Care for the Patient with Bipolar Disorder

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## A b s t r a c t

*Chronic mental illness and its treatment carry inherent risks for significant oral diseases. Given the shift in treatment regimens from the traditional institutionally based approach to more community-focused alternatives, general dental practitioners can expect to see and be asked to treat patients with various forms of psychiatric disorders. One such group consists of patients with bipolar disorder (including type I bipolar disorder or manic-depressive disorder). The purpose of this paper is to acquaint the dental practitioner with the psychopathological features of bipolar disorder and to highlight the oral health findings and dental management considerations for these patients. Bipolar disorder is considered one of the most treatable forms of psychiatric illness once it has been diagnosed correctly. Through a combination of pharmacotherapy, psychotherapy and life-adjustment skills counselling, these patients are better able to understand and cope with the underlying mood swings that typify the condition and in turn to interact more positively and progressively within society as a whole. Both the disease itself and its various pharmacologic management modalities exact a range of oral complications and side effects, with caries, periodontal disease and xerostomia being encountered most frequently. It is hoped that after reading this article the general dental practitioner will feel more confident about providing dental care for patients with bipolar disorder and in turn to become a vital participant in the reintegration of these patients into society.*

**MeSH Key Words:** bipolar disorder/drug therapy; bipolar disorder/complications; dental care for chronically ill

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**B**ipolar disorder (including manic-depressive disorder) is a psychiatric illness affecting approximately 1% to 2% of the general population,<sup>1-3</sup> with no difference in prevalence among men and women. It is characterized by variation in an individual's mood, thought content and behavioural pattern between extreme elation (mania) and depression. These cycles are often unpredictable and of variable duration. Most patients display an extreme cycling of moods once every few years. However, some people, described as "rapid cyclers," experience mood swings at least 4 times per year, a situation more resistant to conventional treatment.<sup>3</sup>

Manic episodes are characterized by hyperactivity, which may involve excessive participation in multiple activities (e.g., sexual, occupational, religious or political). There is often a demanding and increasing nature to these activities of which the individual is unaware. Days may pass with little or no sleep. Speech is often rapid and loud, with abrupt changes in ideas or topics.

Sadness, apathy, insomnia, loss of appetite, and decreased energy characterize the depressive phase. There is a loss of interest in daily activities, whether related to work

or recreational pursuits. Affected individuals have difficulty concentrating on simple tasks, become easily distracted and express feelings of hopelessness, worthlessness and guilt<sup>1,4</sup> (**Table 1**).

The first manic episodes often occur in the late teens or early twenties, and they tend to be of shorter duration than the depressive episodes. As the person becomes older, the intervals between episodes become shorter, with a concomitant increase in the duration of each manic or depressive episode.<sup>1,5</sup>

Both manic and depressive episodes result in significant impairment in social and occupational functioning, which can lead to marital instability, alienation from family and loss of employment.<sup>3</sup> Poor insight and judgement often result in substance abuse, financial downfall and various illegal activities. In fact, bipolar disorder exhibits one of the highest rates of associated substance abuse among all the major psychiatric illnesses, some studies showing up to a 60% lifetime prevalence of some form of substance abuse.<sup>6,7</sup> It is well recognized that alcohol is abused by many patients, but recent studies illustrate that abuse of other substances, including marijuana, cocaine, LSD, heroin and

**Table 1 Symptoms of bipolar disorder**

Manic symptoms	Depressive symptoms
Excessive "high" or euphoric feelings	Loss of appetite, weight loss or weight gain
Obnoxious, provocative or intrusive behaviour	Chronic pain or other persistent bodily symptoms not caused by physical disease
Unrealistic beliefs in one's abilities and powers	Persistent sad or "empty" mood
Increased energy, restlessness, racing thoughts, rapid speech	Fatigue or sleep disturbances
Difficulty in concentrating, remembering, making decisions	
Denial that anything is wrong	

**Table 2 Side effects of long-term use of lithium**

Neurologic	Lethargy, fatigue, weakness, cognitive or memory impairment, fine tremors
Renal	Impaired tubular or glomerular functioning
Thyroid	Lithium-induced hypothyroidism (5% to 35%), nontoxic goitre (4% to 12%)
Cardiovascular	T-wave depression on ECG (displacement of intracellular potassium by lithium)
Gastrointestinal	Nausea, vomiting, diarrhea, abdominal pain, xerostomia
Hematologic	Benign leukocytosis (reversible)
Dermatologic	Acneform eruptions, psoriasis
Metabolic	Weight gain, altered glucose metabolism

ECG = electrocardiography

other opiates, amphetamines and PCP (phencyclidine), is becoming more prevalent.<sup>6</sup> Recent research remains inconclusive as to the effects of substance abuse on the overall course of bipolar disorder. However, some studies have shown a trend toward an increase in attempted suicides, more noncompliance with medications, increased rates of hospital admission and nonresponsiveness to pharmacotherapeutic regimens.<sup>6,7</sup> From the dental standpoint, an awareness of the prevalence of drug abuse in patients with bipolar disorder is important. For example, myocardial ischemia and cardiac arrhythmias are a serious concern in patients who are "high" on cocaine. Administration of epinephrine-containing local anesthetics in the presence of cocaine intoxication will exacerbate the patient's response to sympathomimetic amines, which could result in myocardial infarction, stroke or hypertensive crisis.<sup>8,9</sup>

Individuals suffering from bipolar disorder are far more likely to commit suicide than patients in any other high-risk psychiatric or medical groups. Recent literature suggests that the rate of attempted suicides is 25% to 50%, and the overall completion rate is close to 15%.<sup>1,10</sup>

Although an exact cause for this condition has not been identified, several contributing factors have been implicated, such as biologic abnormalities relating to brain anatomy or physiology and hormonal or biochemical

disturbances.<sup>4</sup> Of greater significance is the fact that a strong familial pattern has been established. Patients with bipolar disorder are significantly more likely than patients with major depression to have parents and first-degree relatives with mood disorders.<sup>11</sup> Twin and adoption studies also favour a strong genetic component to bipolar disorder: concordance rates are 60% to 80% for monozygotic twins and 14% to 23% for dizygotic twins.<sup>2,11</sup>

### Medical Management

There is no cure for bipolar disorder, but a 3-pronged treatment approach can be taken to the management of this illness: pharmacotherapy, psychotherapy and life-adjustment skills education. The pharmacotherapeutic phase is the one aspect of this treatment approach that holds the greatest relevance for dental management protocols. Initial pharmacologic management involves the administration of so-called mood stabilizers. Lithium carbonate, an alkali metal, is one such mood stabilizer that was previously regarded as the treatment of choice for this illness.<sup>12,13</sup> It is effective as an antimanic agent and also prevents recurrent depression and stabilizes mood swings. The exact mechanism of action of lithium resides in its capacity to alter membrane function, through the ease with which it is substituted for other cations involved in the cell membrane-transport mechanism. Lithium enhances the uptake of norepinephrine and serotonin into the synaptosomes, thereby reducing their action. The onset of lithium activity is slow, and up to 10 days may be required to achieve the desired effect, which can be attained in up to 80% of patients if compliance is maintained. However, lithium has a variety of side effects involving many systems in the body<sup>12,14</sup> (Table 2).

In recent years, several new medications have been developed for even more effective management of bipolar disorder,<sup>12</sup> including anticonvulsants such as divalproex, a derivative of valproic acid. This particular medication is being used more frequently as a first-choice treatment for mania because it is safer than lithium.<sup>12</sup> Other medications include antipsychotics such as risperidone and olanzapine, both of which display fewer side effects and less interference with cognitive functioning than lithium. Carbamazepine (an antiseizure drug) and verapamil (a calcium-channel blocker) have also been employed with

**Table 3 Dental management of the patient with bipolar disorder**

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Consult with physician or psychiatrist
Patient's current medication regimen and potential drug interactions
Degree of compliance with pharmacotherapy
Current status and psychological profile
Undertake aggressive preventive education program
Oral hygiene instruction
Frequent recall appointments
Regular use of topical fluorides (e.g., dentifrices, gels in custom trays)
Dietary counselling
Manage xerostomia and mucosal pathology
Salivary substitutes and stimulants
Chlorhexidine mouth rinses
Regular examination of oral soft tissues
Use local anesthetic agents containing epinephrine judiciously: aspirate and inject slowly, and avoid use of epinephrine in retraction cords, hemostatic agents, etc.
Avoid or use reduced dosages of sedative and hypnotic agents and narcotic analgesics

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increasing frequency in patients with bipolar disorder in whom the response to lithium has been inadequate.<sup>5,12</sup> Antidepressant medications such as tricyclic antidepressants and selective serotonin reuptake inhibitors may be added to the therapeutic regimen in some instances to assist in the management of the depressive phase.<sup>15</sup> Patients with bipolar disorder who have demonstrated medication compliance can be maintained indefinitely on these therapeutic regimens with few harmful side effects, which allows them to lead relatively productive and active lives. Consequently, the community dental practitioner will see such individuals for dental treatment and must consider the special problems and concerns related to this particular illness.

Electroconvulsive therapy (ECT) may be indicated for patients with severe depressive episodes that are refractory to medication.<sup>15</sup> With ECT, a central nervous system seizure is created by means of an electric current; the seizure is thought to accentuate the responsiveness of neuronal membranes to norepinephrine and serotonin. It is important for the anesthetist or dental consultant to assess the patient's dentition before ECT to rule out any loose or broken teeth that could be aspirated during the treatments.<sup>15</sup> As well, partial or complete dentures must also be identified. A bite block is generally placed between the teeth by the anesthetist to protect both the teeth and the tongue from the clenching that occurs upon stimulation of the masseter muscles.

### Dental Therapeutic Considerations

Through encouragement, motivation and education about improving health, the dental practitioner can enhance the sense of identity and self-esteem for patients

with bipolar disorder, thereby contributing in some degree to their psychological rehabilitation.<sup>16</sup> The overall goal of treatment planning must incorporate the maintenance of oral health, comfort and function as well as the prevention and control of specific oral disease (Table 3). Before commencing any treatment, the dental practitioner should consult with the patient's physician or psychiatrist to confirm or update information about the current medication regimen, degree of compliance, ability to provide consent and overall psychological profile.<sup>17</sup> The dental practitioner should also be aware that depressed patients may be uncooperative for even simple routine procedures.

During depressive episodes, many patients exhibit a distinct decline in the level of oral hygiene, coupled with a rise in dental caries and periodontal disease, which often progress to an unmanageable situation.<sup>18-20</sup> Dental hygiene is neglected, and any existing prostheses may become ill-fitting and may be discarded.<sup>21</sup> Conversely, during manic periods, overzealous use of oral health aids (such as toothbrushes and floss) may be associated with a corresponding increase in the incidence and severity of cervical abrasion, as well as occasional mucosal or gingival lacerations.<sup>22,23</sup> Unfortunately, medical pharmacotherapy for bipolar disorder can result in moderate to severe xerostomia, which further compounds the severity of any dental disease.<sup>24-26</sup> With reduced salivary flow there is a rapid increase in the degree of dental deterioration, mucosal dryness and dysphagia. Patients often experience a sharp increase in rampant cervical caries not only because of the anticholinergic effects of lithium and other psychotropic medications, but also because they use candies or sweetened beverages to provide some form of oral lubrication.<sup>5,15</sup> High caffeine intake and heavy smoking exacerbate the drying effects of various medications.<sup>27</sup> Other consequences of hyposalivation can include an increased incidence of yeast infections (*Candida*),<sup>26</sup> fissuring of the corners of the mouth (perlèche)<sup>28</sup> and lips, and difficulty in chewing, speaking and swallowing.<sup>28</sup>

There have been numerous reports of the oral side effects of long-term lithium therapy, which can have some importance to dental management. Lichenoid stomatitis has been reported as an adverse reaction to lithium carbonate<sup>14,29</sup> and is thought to represent a response to alterations in immunoregulation induced by the lithium therapy. Nonspecific stomatitis in association with lithium therapy has also been reported.<sup>30</sup> Other patients have reported a metallic taste sensation while taking lithium therapy.<sup>8</sup>

As in the pharmacotherapeutic management of any disease, there is a wide range of interactions between the drugs used in managing bipolar disorder and those used by dental practitioners. Concomitant administration of lithium and metronidazole or tetracycline may cause renal retention of lithium, which could lead to toxic effects.<sup>5</sup>

Nonsteroidal anti-inflammatory drugs such as ibuprofen are reported to increase plasma lithium levels by as much as 60%, so more frequent monitoring of plasma lithium levels may be needed.<sup>5,8</sup>

Preventive dental education for these patients and their families continues to be the mainstay for not only institutional but also community-based dental treatment programs. Studies have shown that the longer the period of hospitalization for psychiatric illness, the greater the incidence of dental caries, periodontitis and subsequent tooth loss; conversely, outpatients have in general demonstrated better oral health than inpatients.<sup>2,18,31,32</sup> Reinforcement of both tooth-brushing and flossing techniques are required to maintain and enhance plaque removal. The use of a chlorhexidine gluconate mouth rinse can be effective in reducing the severity of gingivitis. However, the secondary effects of staining of teeth reported in the literature must be reviewed with the patient.<sup>33</sup> A protocol for dry mouth management may be required.<sup>28,34</sup> Commercially available saliva substitutes, either in liquid form (Mouth Kote, Parnell, Mississauga, Ont.) or gel form (Oral Balance, Laclede, Inc., Rancho Dominguez, Calif.), provide temporary relief from symptoms in both dentate and edentulous individuals wearing complete dentures. Avoidance of both caffeinated and alcoholic beverages reduces the intensity of xerostomia. Sugar-free candies and chewing gum offer some stimulus to increase salivary flow. Taking frequent sips of water throughout the day also relieves symptoms. Regular use of 0.05% sodium fluoride mouth rinses or fluoride gels in custom trays or daily application of 1.1% sodium fluoride dentifrice (Prevident, Colgate, Canton, Mass.) facilitates enamel remineralization and reduces the incidence of dental caries. Depending on the patient's motivation and compliance and the severity of the xerostomia, recall appointments may have to be scheduled more frequently than usual, often at 3- to 4-month intervals.

In general, all aspects of dental care can be undertaken with adequate local anesthesia and judicious use of vasoconstrictive agents. Various psychotropic medications (e.g., phenothiazines and related antipsychotics, as well as tricyclic antidepressants) block the  $\alpha$ -adrenergic receptors (which are responsible for vasoconstriction in smooth muscle), thereby preventing the usual effect of the vasoconstrictor epinephrine. Instead, a vasodilating effect is promoted, as the action of epinephrine is unopposed on the  $\beta$ -adrenergic receptors. Hypotension and reflex tachycardia could result. The duration of local anesthesia is also shortened.<sup>9,25</sup>

Fixed prosthodontic treatment including implants requires a case-by-case analysis, with review of such factors as the degree of xerostomia, compliance with optimum oral hygiene, ability to tolerate more lengthy appointments and, in many cases, financial resources.

## Conclusions

Cases of bipolar disorder represent a significant proportion of patients with mental illness. The general dental practitioner must be prepared to consider the special problems and features unique to this type of psychiatric disease. With a thorough medical history (often generated in consultation with the physician or psychiatrist), appropriate examination and knowledge of the diagnosis, most dental services can be provided to clients with bipolar disorder, often in association with an aggressive program of preventive dental education. The dentist's ability to contribute to the increased feelings of self-worth and overall psychotherapeutic management of these individuals can be a rewarding experience and demonstrates the harmonious interaction that can be achieved in the overall medical and dental management of patients with bipolar disorder. ♦

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