

Bipolar Disorder

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Fig. 1 Bipolar Disorder

Abstract - A complex group of severe and chronic conditions known as bipolar disorders includes bipolar I disorder, which is characterized by the occurrence of a syndromal, manic episode, and bipolar II disorder, which is characterized by the occurrence of a syndromal, hypomanic episode as well as a major depressive episode. More than 1% of people worldwide suffer from bipolar disorders, which are recurrent, chronic conditions. Because they can cause cognitive and functional impairment as well as increased mortality, notably from cardiovascular disease and suicide, bipolar disorders are among the main causes of disability among young people. Patients frequently have medical comorbidities, both psychiatric and nonpsychiatric, which may also raise the risk of death.

Since the onset of bipolar disorder typically occurs during a depressive episode and shares characteristics with unipolar depression, accurate diagnosis of the condition is challenging in clinical practice. Furthermore, the disorder currently lacks any reliable biomarkers. As a result, clinical assessment continues to play a crucial role.

Key Words: Bipolar disorder, Manic, Hypomanic, Depressive, cognitive impairment, mortality, Unipolar depression, biomarkers.

INTRODUCTION

Bipolar disorder, once called manic-depressive illness, is a mental condition that causes unusual swings in a person's feelings, energy, how active they are, and how focused they can be. These swings can make it tough to do everyday tasks. There are three kinds of bipolar disorder, and all of them involve clear changes in a

person's mood, energy, and activity. These mood changes range from times of feeling very "up," excited, easily annoyed, or full of energy (called manic episodes) to times of feeling very "down," sad, uninterested, or without hope (called depressive episodes). There are also less intense "up" periods known as hypomanic episodes.

Sometimes, a person can have symptoms of bipolar disorder that don't fit into the three main categories. This is called "other specified and unspecified bipolar and related disorders." Bipolar disorder is often diagnosed in late adolescence or early adulthood, but it can also show up in children. Even though the symptoms can change over time, people with bipolar disorder typically need ongoing treatment. Following a treatment plan as advised can help them handle their symptoms and have a better quality of life.[1]

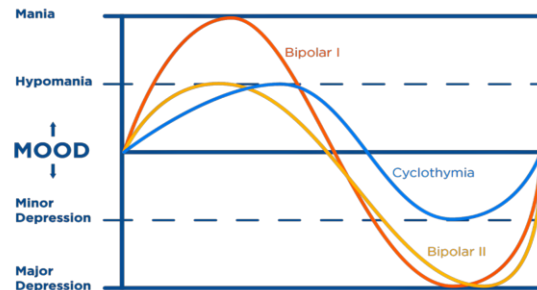


Fig.2 Types of bipolar disorder

Pathophysiology of bipolar disorder

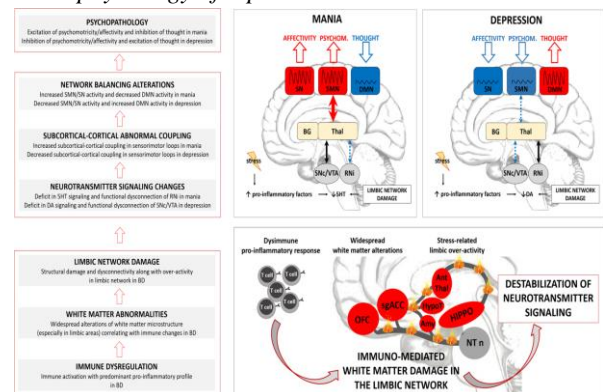


Fig.3 Pathophysiology of bipolar disorder

Types of bipolar disorder

Bipolar disorder has three main types, all with noticeable shifts in mood and energy. Sometimes, a person feels super excited and energetic (mania), while other times they feel very sad and low

(depression). There can be periods of normal mood mixed with depression. If someone has four or more manic or depressive episodes in a year, it's called "rapid cycling."

Effects of Neurotransmitters:

<i>Serotonin</i>	<i>Dopamine</i>
1) Serotonin is frequently appertained to as the “ feel-good” neurotransmitter because it contributes to Passions of well- being and happiness. 2) In bipolar disorder, serotonin levels may be imbalanced, particularly during depressive episodes. Low serotonin levels are associated with symptoms of depression, such as low mood, sadness, and anxiety.	3) Dopamine is a neurotransmitter associated with reward, pleasure, motivation, and the regulation of mood. 4) In bipolar disorder, abnormalities in dopamine function are often linked to manic or hypomanic episodes. Excessive dopamine activity can contribute to the heightened energy, euphoria, and impulsivity seen in mania.

Causes Of Bipolar Disorder

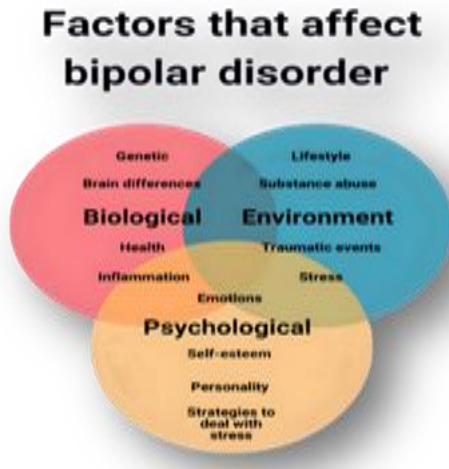


Fig.4 Factors affecting on bipolar disorder

- 1) *Bipolar I Disorder* means having really strong manic episodes that last at least a week, or they're so extreme that you need to go to the hospital. Usually, you'll also have separate times when you feel very depressed for at least two weeks. Sometimes, your mood can be mixed, with both manic and depressive symptoms at the same time.
- 2) *Bipolar II Disorder* means having times when you're very down (depressive episodes) and other times when you're a bit up but not to the extreme (hypomanic episodes), unlike the super high manic episodes seen in Bipolar I.
- 3) *Cyclothymic Disorder*, also known as cyclothymia, is when you have ongoing periods of feeling a bit up (like hypomanic) and sometimes a bit down (like depressive). These moods aren't super intense, and they don't last very long, unlike the stronger mood swings in

other types of bipolar disorder. For adults, these symptoms typically continue for at least two years, and for kids and teenagers, it's about one year.

- 4) *Other Specified and unidentified Bipolar and Affiliated diseases*" is a category for when someone has symptoms of bipolar disorder, but these symptoms do not fit into the specific types we talked about earlier. It's kind of like a catch-all for cases that don't neatly fit into the known categories.[2]

- 1) *Genetic factors/ Heritability*: A family history of the disorder can increase the risk. Bipolar disorder has a hereditary component, meaning that it tends to run in families. If you have a family member with bipolar disorder, your risk of developing the condition is higher compared to individuals without a family history of the disorder.
- 2) *Brain chemical imbalances*: Specifically involving neurotransmitters like serotonin and dopamine:
 - *Effect of Neurotransmitter*
- 3) *Environmental factors*:
 - *Stressful Life Events*: Stressful life events, such as major life changes, relationship problems, financial difficulties, or work-related stress, can act as triggers for mood episodes in individuals with a predisposition to bipolar disorder.
 - *Trauma*: Traumatic experiences, including physical or emotional abuse, neglect, accidents, or other significant traumas, can contribute to the

development of bipolar disorder in some individuals.[3]

- *Sensitization*: The kindling-sensitization model suggests that repeated exposure to stress or mood episodes may sensitize the brain, making individuals more vulnerable to future episodes.
 - *Circadian Rhythms*: Disruptions in circadian rhythms, such as those caused by shift work, jet lag, or irregular sleep patterns, can trigger mood episodes in individuals with bipolar disorder. Circadian rhythms are intimately connected to mood regulation.
 - *Substance Abuse*: Substance abuse, including the use of alcohol or recreational drugs, can trigger and exacerbate mood episodes in individuals with bipolar disorder. It can also complicate treatment and worsen the course of the condition.
 - *Gene-Environment Interaction*: Environmental factors do not act in isolation. They interact with an individual's genetic predisposition. Some people may be more genetically susceptible to the effects of stress and trauma.[4]
- 4) *Complex interplay*: Bipolar disorder likely results from a combination of genetic, biological, and environmental factors.
 - 5) *Ongoing research*: Scientists continue to study and understand the exact causes of bipolar disorder.[5]

Signs And Symptoms

The symptoms of bipolar disorder can differ from individual to individual. People with bipolar disorder can go through periods of high energy (manic episodes), low mood (depressive episodes), or even a mix of both (mixed episodes). These mood swings typically last for a week or more, sometimes longer. During these episodes, these symptoms are there every day, most of the day. These mood swings are strong, with intense feelings, and they come with noticeable changes in behavior, energy, and activity levels that others can see.[6]

Signs and symptoms of bipolar disorder

SYMPTOM	MANIC EPISODE	DEPRESSIVE EPISODE
Mood	Euphoric, irritable, elevated.	Profound sadness, hopelessness.
Energy and Activity	High energy, restlessness, increased activity.	Low energy, lethargy,

		decreased activity.
<i>Sleep Patterns</i>	Reduced need for sleep, sometimes going without sleep.	Increased need for sleep, excessive daytime sleepiness.
<i>Thoughts and Behavior</i>	Racing thoughts, impulsivity, increased risk-taking.	Slow thinking, difficulty in concentrating, isolation.
<i>Speech</i>	Rapid and pressured speech.	Slower and quieter speech.
<i>Impact on Functioning</i>	Can lead to reckless and impulsive actions, social and occupational problems.	May result in withdrawal from social activities, decline in work/school performance.

Diagnosis Of Bipolar disorder

Diagnosing bipolar disorder is a complex process that should be conducted by a qualified mental health professional, such as a psychiatrist or a clinical psychologist. Here are the general steps involved in the diagnosis of bipolar disorder

- I. *Clinical Assessment*: The diagnostic process begins with a thorough clinical assessment. The healthcare provider will gather detailed information about the individual's symptoms, medical history, family history, and any other relevant factors. It's crucial for the individual to be honest and open about their experiences and feelings.[7]
- II. *Mood Episodes*: To diagnose bipolar disorder, the person must have experienced at least one manic or hypomanic episode and one major depressive episode. The healthcare provider will assess the duration, severity, and impact of these episodes. Manic episodes are characterized by elevated mood, increased energy, and other symptoms, while hypomanic episodes are milder but still distinct from normal behavior. Major depressive episodes involve persistent low mood and other associated symptoms.[8]
- III. *Duration and Recurrence*: The mood episodes should meet specific criteria in terms of duration. For instance, a manic or hypomanic episode typically lasts at least one week, while a major depressive episode lasts for at least two weeks. It's also important that these episodes occur at different times and not be caused by other factors or substances.

- IV. *Rule Out Other Causes:* The healthcare provider will consider and rule out other medical or psychiatric conditions that may mimic the symptoms of bipolar disorder. This may include substance use disorders, medical conditions, or other mood disorders.[9]
- V. *Diagnostic Criteria:* The diagnosis of bipolar disorder is usually based on the criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). The DSM-5 provides a set of standardized criteria for various mental disorders, including bipolar disorder.[10]
- VI. *Family History:* A family history of bipolar disorder or other mood disorders may also be taken into consideration during the diagnostic process.
- VII. *Observation and Clinical Judgment:* The healthcare provider will use their clinical judgment to make a diagnosis, taking into account all the information gathered during the assessment.[11]

Treatment of Bipolar Disorder

Bipolar disorder can be challenging, but treatment can help. Without treatment, manic episodes can last 3 to 6 months, and depressive episodes may last 6 to 12 months. However, with proper treatment, episodes usually get better. Most individuals with bipolar disorder can manage it by using a combination of various treatments.

Treatment of bipolar disorder can include one or more of the following :

- 1) *Medicine:* You might take mood stabilizers regularly to prevent mood swings. When manic or depressive episodes occur, specific medicines can help manage those symptoms.
- 2) *Recognizing Triggers:* Learning to spot signs of depression or mania can be valuable in managing the condition.
- 3) *Talk Therapy:* Talking to a therapist can help you cope with depression and improve relationships.
- 4) *Lifestyle Guidance:* Making positive lifestyle changes like exercising, engaging in enjoyable activities, improving your diet, and getting enough sleep can be beneficial.

Medicines for bipolar disorder

Lithium:

It's a long-term treatment for both manic and depressive episodes, usually taken for at least 6 months. The right dosage is crucial for its effectiveness, and the wrong dose can lead to side effects like diarrhea and vomiting. While on lithium, avoid using non-steroidal anti-inflammatory drugs (NSAIDs) like ibuprofen unless your GP prescribes them.

Anticonvulsant medicines:

These medicines can serve as both treatments for episodes of mania and long-term stabilizers of mood. In some cases, a single anticonvulsant medicine may be used. However, when lithium alone doesn't work for bipolar disorder, these medicines can also be used in combination with lithium to achieve better results. Anticonvulsants medicines include following drugs like:

1) Valproate:

Valproate, a medication often used to treat bipolar disorder and epilepsy, is generally not recommended for women of childbearing age due to the increased risk of birth defects in babies exposed to the drug during pregnancy. This risk includes the potential for physical and developmental abnormalities in the newborn.[12]

2) Carbamazepine:

Carbamazepine is an anticonvulsant medication that is sometimes used in the treatment of bipolar disorder. It helps to stabilize mood swings and prevent or reduce the intensity of manic or depressive episodes in some individuals with bipolar disorder. Carbamazepine works by affecting certain neurotransmitters in the brain.[13]

3) Lamotrigine:

Lamotrigine works by modulating certain neurotransmitters in the brain and stabilizing abnormal electrical activity, which can help in regulating mood.[14]

Antipsychotic medicines

Mania episodes are occasionally treated with antipsychotic medication.

4) Haloperidol:

Haloperidol is not typically a first-line treatment for bipolar disorder. It is an antipsychotic medication primarily used for conditions like schizophrenia and other psychotic disorders. In some cases, it may be used in bipolar disorder when there are severe manic

or mixed episodes with psychotic features or when other treatments have proven ineffective.[15]

5) *Olanzapine*:

It is an atypical antipsychotic medication that is sometimes used in the treatment of bipolar disorder. It can be effective in managing various aspects of bipolar disorder, including acute manic or mixed episodes, as well as preventing future episodes. Olanzapine is often prescribed alongside other mood stabilizers to help stabilize mood swings in individuals with bipolar disorder.[16]

Psychotherapy

Psychotherapy, also known as talk therapy, is an important component of the treatment for bipolar disorder. It is typically used in conjunction with medication to help individuals manage their symptoms and improve their overall quality of life.

Types of Psychotherapy:

- 1) *Cognitive-Behavioral Therapy (CBT)*: Cognitive-Behavioral Therapy (CBT) is a therapeutic approach that aims to recognize and modify harmful thought patterns and behaviors, with the goal of aiding individuals in handling symptoms of depression and mania and decreasing the likelihood of recurrence.
- 2) *Interpersonal and Social Rhythm Therapy (IPSRT)*: IPSRT helps individuals stabilize their daily routines and manage social interactions, which can be crucial in preventing mood episodes
- 3) *Family-focused Therapy (FFT)*: FFT involves family members in the treatment process and aims to improve communication and support within the family, which can be important for recovery.
- 4) *Psychoeducation*: This involves providing individuals and their families with information about bipolar disorder, its symptoms, and treatment options. Education can empower individuals to manage their condition more effectively.[17]

Additional treatment options for managing bipolar symptoms include:

- 1) *Electroconvulsive therapy (ECT)*: ECT involves administering a controlled electrical current to the brain. This electrical stimulus induces a brief seizure in the brain. The procedure is done under anesthesia, so the person doesn't feel pain and is unaware during the treatment.[18]

- 2) *Repetitive Transcranial Magnetic Stimulation (rTMS)*: rTMS therapy involves the use of magnetic fields to stimulate specific regions of the brain. rTMS uses a coil placed on the scalp that generates a rapidly changing magnetic field. When this coil is placed near the head, it induces electrical currents in the brain. [19]
- 3) *Light Therapy*: Some people with bipolar disorder feel worse during the dark and cold months of the year. Light therapy involves sitting in front of a special bright light for a certain amount of time each day. It can help to improve mood, especially during these darker times of the year. [20]
- 4) *Meditation And Yoga Therapy*: Certainly, meditation and guided meditation techniques like yoga nidra are effective in promoting deep relaxation and self-regulation, which can be invaluable for preventing relapses and managing the challenges of bipolar disorder. Comprehensive yoga therapy has the potential to significantly enhance mood stability and alleviate associated symptoms for many individuals with bipolar disorder.[21]

CONCLUSION

Bipolar disorder is a significant public health concern, leading to a lot of suffering and a higher risk of death. Dealing with it is a complicated because moods can change rapidly and have a big impact on a person's well-being. Also, people sometimes don't stick with their treatment, and other mental health issues can be involved. There are guidelines for dealing with the different phases of the disorder, like mania and depression. Researchers are currently studying various medicines and therapy options in controlled trials.

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