

**BIPOLAR DISORDER IN ADULTS**

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ABSTRACT

Bipolar disorder is a chronic illness, which may require life-long treatment. Patients will spend 3-5 times more days in the depressed episode than in the manic phase. Due to this variability in episodes, polypharmacy is used quite frequently in practice, though the evidence to do this remains quite limited. Many positive and negative outcomes can occur from this practice. Bipolar disorder is the 6th leading cause of disability in the developed world among those between the ages 15 and 44 years age groups. Serotonin is one of the neurotransmitter in the brain, and one of that strongly affects the person mood. Clozapine (clozaril), olanzapine (zyperexa), risperidone (Risperdal), and ziprasidone (zeldox) and the clozapine may be helpful as mood stabilizer for people who do not respond to lithium and anticonvulsant.

Keywords: Bipolar disorder, Mania, Types of bipolar disorder.

INTRODUCTION

Bipolar disorder is characterized by the occurrence of at least one manic or mixed-manic episode during the patient's lifetime. Most patients also, at other times, have one or more depressive episodes. In the intervals between these episodes, most patients return to their normal state of well-being. Thus bipolar disorder is a "cyclic" or "periodic" illness, with patients cycling "up" into a manic or mixed-manic episode, then returning to normal, and cycling "down" into a depressive episode from which they likewise eventually more or less recover. Bipolar disorder, also known as manic depressive illness, is a brain disorder that cause unusual shift in mood, energy, activity level and ability to carry out day to day task. Bipolar disorder expresses itself in an irregular pattern of changes in mood, energy, and thinking. Bipolar disorder is also associated with significant mortality risk, with approximately 25% of patient attempting suicide and 11% completing. Bipolar disorder is also which appear in early adult life bipolar disorder is frequently diagnosed and very serious emotional disorder bipolar is still untreated too, with patients suffering such symptoms 31.9% of the time over nearly 13 years people with this illness suffer recurrent episodes of high, or elevated mood and depression. Most experienced both high and the lows. Occasionally people can experience mixture of both high and low at the same time, or switch during the day. The depression and bipolar support alliance has taken a leading role in educating patients, their family, medical professionals mental health professionals and the public at large about manic depressive illness. The National Alliance of the Mentally Ill (NAMI) has also sought information by surveying family member about utilization and value of mental health services¹.

Epidemiology

Bipolar disorder is the 6th leading cause of disability in the developed world among those between the ages 15 and 44 years age group. The suicide rate among patients with polar disorder likely greater than in patients with polar². A more recent analysis of data from a second US National Co-morbidity Survey found that 1% met lifetime prevalence criteria for bipolar I, 1.1% for bipolar II, and 2.4% for sub-threshold symptoms. Rates are similar in men and women

and, broadly, across different cultures and ethnic groups. A 2000 study by the World Health Organization found that prevalence and incidence of bipolar disorder are very similar across the world. Age-standardized prevalence per 100,000 ranged from 421.0 in South Asia to 481.7 in Africa and Europe for men and from 450.3 in Africa and Europe to 491.6 in Oceania for women. However, severity may differ widely across the globe. Disability-adjusted life year rates, for example, appear to be higher in developing countries, where medical coverage may be poorer and medication less available. Late adolescence and early adulthood are peak years for the onset of bipolar disorder.

The U.S National co morbidity survey replication indicates that bipolar disorder is more common than previously thought. The lifetime prevalence for bipolar-I and II disorder was 1.0% and 11% respectively³. The most common age of onset of bipolar disorder is 17-21 year. It is highly disabling illness, and in fact a study conducted by WHO identified bipolar disorder. The suicide rate among patients with bipolar disorder is likely greater than in patient with major depression, and up to 17% to 19% of patient will die by suicide. Co morbid condition, such as alcohol and substance abuse, anxiety disorders are common and addition, most of research on treatment outcomes has not include in this group of patient.

Etiology and Pathophysiology

The causes of bipolar disorder are genetic factors, neurochemical factors and environmental factors.

Genetic factors in Bipolar Disorder

Bipolar disorder tends to be familiar, meaning that it "runs in families." About half the people with bipolar disorder have a family member with a mood disorder, such as depression. A person who has one parent with bipolar disorder has a 15 to 25 percent chance of having the condition. A person who has a non-identical twin with the illness has a 25 percent chance of illness, the same risk as if both parents have bipolar disorder. A person who has an identical twin (having exactly the same genetic material) with bipolar disorder has an even greater risk of developing the illness about an eightfold greater risk than a nonidentical twin. A study of adopted

twins (where a child whose biological parent had the illness is raised in an adoptive family untouched by the illness) has helped researchers. Researchers conclude that the lifetime chance of an identical twin (of a bipolar twin) to also develop bipolar disorder is about 40% to 70%. In more studies at Johns Hopkins University, researchers interviewed all first-degree relatives of patients with bipolar I and bipolar II disorder and concluded that bipolar II disorder was the most common affective disorder in both family sets. The researchers found that 40% of the 47 first-degree relatives of the bipolar II patients also had bipolar II disorder; 22% of the 219 first-degree relatives of the bipolar I patients had bipolar II disorder. Studies at Stanford University that explored the genetic connection of bipolar disorder found that children with one biological parent with bipolar I or bipolar II disorder have an increased likelihood of getting bipolar disorder. In this study, researchers reported that 51% of the bipolar offspring had a psychiatric disorder, most commonly major depression, dysthymia (mild depression), bipolar disorder, or attention deficit hyperactivity disorder (ADHD). Interestingly, the bipolar parents in the study who had a childhood history of ADHD were more likely to have children with bipolar disorder but not ADHD.

Bipolar disorder is frequently inherited, with genetic factors accounting for approximately 80% of the cause of the condition. If one parent has bipolar disorder, there is a 10% chance that his or her child will develop the illness. If both parents have bipolar disorder the likelihood of their child developing the illness rises to 40%. However, just because one family member has the illness, it is not necessarily the case that other family members will also develop the illness. The following factors might also be involved in the onset of bipolar disorder.

Neurochemical factors in Bipolar Disorder

Three important brain chemicals are noradrenalin, (norepinephrine), serotonin, and dopamine. Norepinephrine and 5 hydroxytryptamin (serotonin) have been consistently linked to psychiatric mood disorder such as depression and bipolar depression the brain chemical serotonin is connected to many body functions, sleep wakefulness, eating sexual activity, learning, and memory. Biochemical imbalance in the brain that makes a person vulnerable to experiencing mood episodes. A recent theory about cause of bipolar disorder is that is related to abnormal serotonin chemistry in the brain. Serotonin is one of the neurotransmitter in the brain, and one of that strongly affects the person mood. An imbalance is thought to be caused by irregular hormone production or certain neurotransmitter, which act as a messenger between nerves cell. New research has found stress hormone may change the way gene function, allowing illness like bipolar disorder to emerge⁴ brain imaging studies are helping scientist learn what goes wrong in the brain to produce bipolar disorder and other mental illness^{5,6}. New brain – imaging techniques allows researchers to take pictures of living brain at work, to examine its structure and activity, without the need for surgery or other invasive procedure. This technique include magnetic resonance imaging (MRI), positron emission tomography (PET), and functional magnetic resonance imaging (fMRI). There is evidence that images of brain of people have bipolar disorder is different from healthy people. As a biological disorder, it may lie dormant and be activated on its own or it may be triggered by external factors such as psychological stress and social circumstances. A wide range of neuroanatomical and

neuroimaging studies are being conducted to learn more about bipolar disorder. Lesions in the frontal and temporal lobes are most frequently associated with bipolar disorder. Left-sided lesions tend to be associated with depression and right-sided lesions with mania, though differences may be reversed in the posterior regions of the brain (e.g., the association of depression with right parietooccipital lesions). No abnormalities have been found consistently via computed tomography (CT) studies, though ventricular enlargement has been suspected. Magnetic resonance imaging (MRI) studies reveal an increase in white matter intensities associated with bipolar disorder and correlated with age, though the clinical significance is unknown. Overall, most functional imaging studies (single-photon emission computer tomography [SPECT] and positron emission tomography [PET]) have noted prefrontal and anterior paralimbic hypoactivity in bipolar depression, while preliminary studies of manic patients have yielded inconsistent findings⁷.

Environmental factors in Bipolar Disorder

A life event may trigger a mood episode in a person with a genetic disposition for bipolar disorders. Even without clear genetic factors, altered health habits, alcohol or drug abuse or hormonal problems can trigger an episode. Among those at risk for the illness, bipolar disorder is appearing at increasingly early ages. This apparent increase in earlier occurrences may be due to under diagnosis of the disorder in the past. This change in the age of onset may be a result of social and environmental factors that are not yet understood. Although substance abuse is not considered a cause of bipolar disorder, it can worsen the illness by interfering with recovery. Use of alcohol or tranquilizers may induce a more severe depressive phase. While the onset of bipolar disorder may be linked to a stressful life event, it is unlikely that stress itself is a cause of bipolar disorder. Notwithstanding this, people who suffer from bipolar disorder often find it beneficial to find ways of managing and reducing stress in their lives (as do people without the disorder! Again - while not a cause - seasonal factors appear to play a role in the onset of bipolar disorder, with onset chance increasing in spring. The rapid increase in hours of bright sunshine is thought to trigger depression and mania by affecting the pineal gland.

Symptoms of Bipolar Disorder

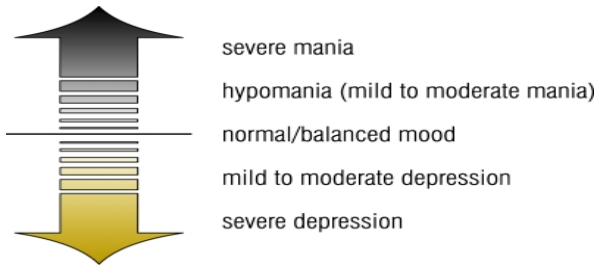
In bipolar disorder it is a combination of depressive and manic episodes. Firstly, the symptoms of mania:

- Increased of energy level, activity, and restlessness
- Excessive high- euphoric mood
- Extreme irritability
- Talking very fast
- Distractibility, can't concentrate well
- Unrealistic beliefs
- Poor judgement
- Increased sexual drive

Symptoms of depressive episode

- Lasting sad, anxious, or empty mood
- Feeling hopeless and pessimism
- Feeling guilt, worthlessness, or helplessness
- Loss of interest or pleasure activities once enjoyed
- Decreased energy, feeling of fatigue
- Difficulties in concentrating, remembering, making decisions

- Restlessness or irritability
- Sleeping too much or can't sleep
- Change appetite, or weight loss or gain
- Thought of death or suicide, or suicide attempts



Types of Bipolar Disorder

There are four types of bipolar disorder bipolar I, bipolar II, cyclothymia and bipolar disorder not otherwise specified (BP-NOS).

Bipolar-I disorder

In bipolar- I disorder, the person has manic episodes and almost always experience depression at some stages. This occurs at least seven days, or by manic symptoms that are so severe that the person needs immediate hospital care. Usually, the person also has depressive episodes, typically lasting at least two weeks. Bipolar disorder is the severe disorder, in this case the patients are more likely to experience mania, have longer highs. In this disorder the people have experienced one or more episodes of mania, most people experienced both mania and depression and few people have episodes of mania alone.

Bipolar-II disorder

The person have only hypomanic (the milder form of mania) this disorder may be hard to recognise if the person is seen as normally excitable, highly energised, and very productive.

Cyclothymia (rapid cyclic bipolar disorder)

There are at least four episodes per year, in any combination of mania, hypomania or depression. This is seen in 5 to 15% of people with bipolar disorder .and this is more chronic unstable mood disorder.

Bipolar disorder not otherwise specified (BP-NOS)

Bipolar NOS (“not otherwise specified”) refers to a condition in which people have experienced periods of elevated mood, but do not meet criteria for any of the other three defined subtypes of bipolar disorder. For example, a person can have some symptoms of hypomania followed by an episode of depression. Because the symptoms of hypomania never lasted that long, the person would not qualify for a diagnosis of bipolar II, since he or she did not have a full-blown hypomanic episode, but he or she would qualify for a diagnosis of bipolar NOS. Some health care providers giving this diagnosis also may call bipolar NOS “atypical bipolar” disorder⁸.

Mania

People with bipolar disorder go through unusual mood changes. Sometimes they feel very happy and “up,” and are much more active than usual. This is called mania. Mania typically causes obvious problems in daily functioning and often leads to serious problems with a person’s relationships or work functioning.

Types of mania and response to medication

Patients with euphoric or pure mania respond to lithium between 59 and 91 percent of the time, and at slightly lower rates to valproate treatment⁹.

- Dysphoric or mixed- It is severe type, and difficult to treat. A review of studies revealed associations with suicidality, an earlier age of onset, their episode is longer duration, and higher rates of personal and family depression, higher concomitant alcohol or sedative-hypnotic abuse, more neuropsychiatric abnormalities, their poorer outcome¹⁰. Patients in acute episodes of mixed mania respond better to valproate than lithium. Most atypical antipsychotics have an indication, too, for mixed mania, though combinations are often needed.
- Rapid cycling- Cycling ranges from four or more per year (rapid cycling: 15–20%) they occurred from weeks to several days (ultra-rapid cycling) to distinct, abrupt shifts and less than 24 hours (ultradian cyclers)¹¹. Cyclers are more likely to be female, have associated hypothyroidism¹², and lower likelihood of recovery in the second year of follow-up, but not permanently. It may be a parameter of treatment resistance, in general, with many patients not responding even to combinations of mood stabilizers. Conceptually, treatment parallels mixed episodes. In acute episodes, patients with a rapid cycling pattern appear to respond better to quetiapine, lamotrigine, or valproate. Other treatment options include adding thyroid hormone to a mood stabilizer (at a dose to achieve 150% of normal function) using a combination of standard mood stabilizers, clozapine as a monotherapy, and clozapine in combination with lithium or valproate.

Diagnosis

Diagnosis is based on the self-reported experiences of an individual as well as abnormalities in behaviour reported by family members, friends or co-workers, followed by secondary signs observed by a psychiatrist, nurse, social worker, clinical psychologist or other clinician in a clinical assessment. There are lists of criteria for someone to be so diagnosed. These depend on both the presence and duration of certain signs and symptoms. Assessment is usually done on an outpatient basis; admission to an inpatient facility is considered if there is a risk to oneself or others. The most widely used criteria for diagnosing bipolar disorder are from the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, the current version being DSM-IV-TR, and the World Health Organization's International Statistical Classification of Diseases and Related Health Problems, currently the ICD-10. The latter criteria are typically used in Europe and other regions while the DSM criteria are used in the USA and other regions, as well as prevailing in research studies. The DSM-V, to be published in 2013, will likely include further and more accurate sub-typing. An initial assessment may include a physical exam by physician. Although there are no biological tests which confirm bipolar disorder, tests may be carried out to exclude medical illnesses such as hypo- or hyperthyroidism, metabolic disturbance, a systemic infection or chronic disease, and syphilis or HIV infection. An EEG may be used to exclude epilepsy, and a CT scan of the head to exclude brain lesions. Investigations are not generally repeated for relapse unless there is a specific medical indication. Several rating scales for the screening and evaluation of bipolar disorder exist, such as the bipolar

spectrum diagnostic scale. The use of evaluation scales cannot substitute a full clinical interview but they serve to systematize the recollection of symptoms. On the other hand instruments for the screening of bipolar disorder have low sensitivity and limited diagnostic validity.

Medication

First one is the mood stabilizers. Different types of mood stabilizer are– lithium, the first mood stabilizing medication approved by the U.S. food and drug administration (FDA) for treatment of mania. Anticonvulsant medications, such as valproate (Depakote) or carbamazepine (tegretol), also have mood stabilizing effects and may be especially useful for difficult to treat bipolar episode. Valproate was FDA-approved in 1995 for manic condition. New anticonvulsant medications like Lamotrigine (lamictal), gabapentine (Neurontin) and topiramats. There is some evidence that valproate cause hormonal changes in teenage girls and polystic ovary syndrome in women. Carefully monitored by physicians before taking this medication. Expecting mother or who became pregnant face challenges due to harmful or adverse effect of mood stabilizing medications on the fetus¹³. The new treatment with reduce risk of pregnancy and lactation.

Atypical Antipsychotic Medications

Clozapine (clozaril), olanzapine (zyperexa), risperidone (Risperdal), and ziprasidone (zeldox) and the clozapine may be helpful as mood stabilizer for people who do not respond to lithium or anticonvulsant¹⁶, and controlling manic or mixed episode. olanzapine also help for psychotic depression¹⁴. Olanzapine is also available in an injectable form. If the insomnia is a problem, the benzodiazepine medication such as clonazepine (klonopin) or lorazepam. (Ativan) may be helpful for better sleep. It may be prescribed for short-term basis because of habit forming drug. Other sedative medication, like zolpidem (Ambien) is sometime used instead. Aripiprazole (Abilify), like olanzapine, is approved for treatment of manic or mixed episode. It is also used for maintenance treatment after a severe or sudden episode. Quetiapine (seroquel) relieves the symptoms of severe and sudden manic episode. In 2006, it became the first atypical antipsychotic to also receive FDA approval for treatment of bipolar disorder.

This medicine is used to treat symptoms of depression in bipolar disorder who takes antidepressant as a mood stabilizer too. Physician usually require this because of taking only an antidepressant drug can increase person's risk of switching to mania or hypomania or developing rapid cycling symptoms . Recently, a large scale, NIMH funded study showed that for many people, adding an antidepressant to a mood stabilizer is also more effective in treating the depression than using only a mood stabilizer. Fluoxetine (Prozac), paroxetine (paxil), sertraline (Zoloft) and bupropion (wellbutrin).

Psychotherapy

Psychotherapy and talk therapy can also very effective treatment for bipolar disorder. It can provide support, guidance and education to people. Some psychotherapy treatments are-

- Cognitive Behavioral Therapy (CBT) - Help the people who are suffering from the bipolar disorder learn to change harmful or negative thought pattern and behaviours.

- Family–focused Therapy- It helps enhance family coping strategies, such as recognising new episodes. Early and helping their loved one. This therapy also improves communication and problem–solving.
- Interpersonal and social rhythm Therapy – It helps people with bipolar disorder improve their relationship with other and manage their daily routines. Daily routine and sleep schedule may help protect against manic episode.
- Psycho-education- It teaches about the bipolar disorder and illness and there treatment. This treatment help people recognize signs of relapse so they can seek treatment early, before a full blown episode occurs.

Other treatments

- Electroconvulsive Therapy- If the medication and psychotherapy does not work, electroconvulsive therapy (ECT) may be useful, ECT formally known as ‘shock therapy’. Before ECT is administrated, a patient takes a muscles relaxant and is put under brief anaesthesia. On average ECT treatment last from 30-90 sec. people who have ECT usually recover after 5-15 min and are able to go have same day It is effective but not first line drug. ECT may cause some short term side effect, including confusion, disorientation, and memory loss. But this side effect typically clears soon after treatment.
- Sleep Medication- Those have trouble sleeping usually sleep better after getting treatment for bipolar disorder.
- Herbal Supplement- In general there is not much research about herbal or natural supplements. An herb called St. John’s wort (*hypericum perforatum*) often marketed as natural antidepressant may cause switch to mania in some people with bipolar disorder¹⁵

Scientist also researching omega- 3 fatty acid (found in fish oil) to measure their usefulness of long term treatment of bipolar disorder.¹⁶

Side effects of Antidepressant drug

The psychiatrist prescribing the medication or pharmacist can also answer questions about side effects. Over the last decade, treatments have improved, and some medications now have fewer or more tolerable side effects than earlier treatments. However, everyone responds differently to medications. In some cases, side effects may not appear until a person has taken a medication for some time.

People being treated for bipolar disorder should not stop taking a medication without talking to a doctor first. Suddenly stopping a medication may lead to “rebound,” or worsening of bipolar disorder symptoms. Other uncomfortable or potentially dangerous withdrawal effects are also possible.

The following sections describe some common side effects of the different types of medications used to treat bipolar disorder.

Mood Stabilizers

In some cases, lithium can cause side effects such as:

- Restlessness
- Dry mouth
- Bloating or indigestion
- Acne
- Unusual discomfort to cold temperatures
- Joint or muscle pain
- Brittle nails or hair.

Atypical Antipsychotics

Some people have side effects when they start taking atypical antipsychotics. Most side effects go away after a few days and often can be managed successfully. People who are taking antipsychotics should not drive until they adjust to their new medication. Side effects of many antipsychotics include:

- Drowsiness
- Dizziness when changing positions
- Blurred vision
- Rapid heartbeat
- Sensitivity to the sun
- Skin rashes
- Menstrual problems for women

Atypical antipsychotic medications can cause major weight gain and changes in a person's metabolism. This may increase a person's risk of getting diabetes and high cholesterol¹⁷.

In rare cases, long-term use of atypical antipsychotic drugs may lead to a condition called tardive dyskinesia (TD). The condition causes muscle movements that commonly occur around the mouth. A person with TD cannot control these movements. TD can range from mild to severe, and it cannot always be cured. Some people with TD recover partially or fully after they stop taking the drug.

Antidepressants

The antidepressants most commonly prescribed for treating symptoms of bipolar disorder can also cause mild side effects that usually do not last long. These can include:

- Headache, which usually goes away within a few days.
- Nausea (feeling sick to your stomach), which usually goes away within a few days.
- Sleep problems, such as sleeplessness or drowsiness. This may happen during the first few weeks but then go away. To help lessen these effects, sometimes the medication dose can be reduced, or the time of day it is taken can be changed.
- Agitation (feeling jittery).
- Sexual problems, which can affect both men and women. These include reduced sex drive and problems having and enjoying sex.

Women with bipolar disorder who are pregnant or may become pregnant face special challenges. The mood stabilizing medications in use today can harm a developing fetus or nursing infant¹⁸. But stopping medications, either suddenly or gradually greatly increases the risk that bipolar symptoms will recur during pregnancy¹⁹. Scientists are not sure yet, but lithium is likely the preferred mood-stabilizing medication for pregnant women with bipolar disorder. However, lithium can lead to heart problems in the fetus. Women need to know that most bipolar medications are passed on through breast milk²⁰. Pregnant women and nursing mothers should talk to their doctors about the benefits and risks of all available treatments.

CONCLUSION

Bipolar disorder is a serious mental illness with significant negative impact on multiple domains of an individual's life. Its diagnosis and treatment presents many clinical challenges. The optimal management of bipolar disorder requires both pharmacological and psychosocial treatments to be delivered

in a collaborative manner to achieve the best possible outcome.

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REFERENCES

1. Hatfield AB, Gearson J S, Coursey RD. Family members rating of the use and value of mental health services: result of a national NAMI survey. *Psychiatric services* 1996; 47: 825- 51. PMID:8837153
2. Akrikal HS. The prevalent clinical spectrum of bipolar disorder; beyond DSM-IV. *J Clin Psychopharm* 1996; 16: 2 suppl 45-14S.
3. Merikangas KR, Akiskal HS, Angst J, et al, Lifetime and 12- month prevalence of bipolar spectrum in the national comorbidity survey replication. *Arch Gen Psychiatry* 2007; 64: 543-552. <http://dx.doi.org/10.1001/archpsyc.64.5.543> PMID:17485606 PMCid:1931566
4. Andresscu C, et al, complementary and alternative medicine in the treatment of bipolar disorder. A review of the evidence. *Journal of Affective Disorders* 2008; 110-16.
5. Soares J C, Mann JJ. The anatomy of mood disorder review of structural neuroimaging studies *Biological Psychiatry*, 1997; 41(1): 86- 106. [http://dx.doi.org/10.1016/S0006-3223\(96\)00006-6](http://dx.doi.org/10.1016/S0006-3223(96)00006-6)
6. Soares J C Mann JJ. The functional neuroanatomy of mood disorder, *Journal of Psychiatric research*, 1997; 31(4); 393- 432. [http://dx.doi.org/10.1016/S0022-3956\(97\)00016-2](http://dx.doi.org/10.1016/S0022-3956(97)00016-2)
7. Goodwill FK, Jamison KR. Manic- depressive illness. New York, NY oxford university press; 1990.
8. Altshuler LL, Curran JG, Huaser P, Mint Z. Hypersensitive in bipolar disorder; magnetic resonance imaging comparison and literature metaanalysis. *American J Psychiatry*, 1995; 152: 1139-44. PMID:7625460
9. Coryell W, Endicott J, Keller M. Rapidly cycling affective disorder. *Arch Gen Psychiatry*. 1992; 49:126-31 <http://dx.doi.org/10.1001/archpsyc.1992.01820020046006> PMID:1550465
10. Bauer MS, Whybrow PC. Rapid cycling bipolar affective disorder. *Arch Gen Psychiatry*. 1990; 47:435-40 <http://dx.doi.org/10.1001/archpsyc.1990.01810170035006> PMID:2184796
11. Calabrese JR, Shelton MD, Rapport DJ, et al. A 20-month, double-blind, maintenance trial of lithium versus Divalproex in rapid-cycling bipolar disorder. *Am J Psychiatry*. 2005; 162:2152-61 <http://dx.doi.org/10.1176/appi.ajp.162.11.2152> PMID:16263857
12. Calabrese JR, Markovitz PJ, Kimmel SE, et al. Spectrum of efficacy of valproate in 78 rapid-cycling bipolar patients. *J Clin Psychopharmacol*. 1992; 12:53-6. <http://dx.doi.org/10.1097/00004714-199202001-00008>
13. Llewellyn A, Stowe ZN, Stader JR. The use of lithium and management of women with bipolar disorder during pregnancy and lactation. *J clin psychiatry* 1998;59(6): 57-64 PMID:9674938
14. Rothschild AJ, Bates KS, Boehringer KL, Syed A. Olanazine response in psychotic depression. *Journal of clinical psychiatry* 1999; 60(2): 116-8. <http://dx.doi.org/10.4088/JCP.v60n0208> PMID:10084638
15. Nieren berg AA, Burt T, Matthews, Weiss AP. Mania associated with St. John wort. *Boil psychiatry*. 1999; 16(12): 1707- 08.
16. Stoll AL, Severus WE, Freeman MP, Rueter S, Zboyan HA, Diamond E. Omega 3 fatty acids in bipolar disorder; a preliminary double blind, placebo – controlled trial. *Arch gen psychiatry* 1999; 56(5): 407- 12
17. Lieberman JA, Stroup TS, McEvoy JP, Swartz MS, Rosenheck RA, Perkins DO. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *N Engl J Med* 2005; 353(12):1209-1223.
18. Lieberman JA, Stroup TS, McEvoy JP, Swartz MS, Rosenheck RA, Perkins DO. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *N Engl J Med* 2005; 353(12):1209-1223. <http://dx.doi.org/10.1056/NEJMoa051688> PMID:16172203
19. Llewellyn A, Stowe ZN, Stader JR. The use of lithium and management of women with bipolar disorder during pregnancy and lactation. *J clin psychiatry* 1998;59(6): 57-64 PMID:9674938
20. Viguera AC, Whitfield T, Baldessarini RJ, Newport J, Stowe Z, Remnick A. Risk of recurrence in women with bipolar disorder during pregnancy: prospective study of mood stabilizer discontinuation. *Am J Psychiatry* 2007; 164(12):1817-24 <http://dx.doi.org/10.1176/appi.ajp.2007.06101639> PMID:18056236
21. Yonkers KA, Wisner KL, Stowe Z, Leibenluft E, Cohen L, Miller L. Management of bipolar disorder during pregnancy and the postpartum period. *Am J Psychiatry*. 2004 Apr; 161(4):608-20 <http://dx.doi.org/10.1176/appi.ajp.161.4.608> PMID:15056503

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