Case Report

Journal Of Clinical & Medical Images Case Reports

Open Access, Volume - 2

Pharmacological Management of Bipolar Disorder

Gudisa Bereda*

[*]Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia.

Received Date : Apr 01, 2022
Accepted Date : May 11, 2022
Published Date : May 23, 2022
Archived : www.jcmimagescasereports.org

***Corresponding Author:** Gudisa Bereda, Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia. Tel: +251913118492/+251919622717.
Email: gudisabareda95@gmail.com

Abstract

Bipolar disorder is a mental pathology that has been known since ancient times and has its origin in the concept of "mania," a term that comes from the Greek "μανια," meaning "madness" or "frenzy". Bipolar II is a history of at least one hypomanic episode plus at least one episode of major depression. Drug treatment for bipolar disorder has three symptom targets such as manic symptoms, mixed episodes, or depression and is usually given in stages. Lithium salts showed great efficacy in the treatment of manic disorder and they did so in a short period of time within several days. Lithium is the drug of choice in treating recurrent bipolar affective disorder (i.e., manic-depressive illness). Lithium was also relatively effective in treating manic manifestations in early dementia.

Keywords: Bipolar disorder; management; pharmacological

Introduction

Bipolar disorder is a mental pathology that has been known since ancient times and has its origin in the concept of "mania," a term that comes from the Greek "μανια," meaning "madness" or "frenzy" [1-2]. Bipolar disorder, largely due to its chronic and recurrent course, poses an important burden for the patient, the family and the society and its treatment is essential to avoid the main complications of the disease. In developed countries, bipolar disorder is ranked among the top 10 causes of disability. According to the World Health Organization (WHO), bipolar disorder is the fourth cause of neuropsychiatric disability in people aging 15 to 44 years. Additionally, the use of health resources that bipolar patients make is greater than that of patients with depressive or chronic medical conditions [3, 4]. Bipolar disorder is classically described as clinically significant episodes of depression and elevated mood (mania or hypomania) with intervening periods of normal mood (euthymia) [5, 6]. The substantial morbidity of bipolar disorder arises primarily from the depressive episodes, and there is frequent comorbidity with anxiety disorders and substance misuse [7, 8]. Based on American Psychiatric Association's Diagnostic and Medical Manual of Mental Disorders, Fourth Edition –IV or DSM - IV: bipolar disorders classified as follows bipolar I have a history of at least one episode of mania. Nearly all patients with bipolar I disorder also have episodes of major depression, but these are not required to make the diagnosis; bipolar II is a history of at least one hypomanic episode plus at least one episode of major depression; bipolar disorder not otherwise specified is a bipolar features that do not meet criteria for bipolar I or II disorder, eg, a history of episodes of hypomania with no history of major depression. This disorder is sometimes called bipolar spectrum disorder; cyclothymic disorder is a mild episodes/chronic; rapid cycling is many cycles of mania and depression each year. Four or more episodes a year; schizoaffective are combinations of affective and schizophrenia; intermittent explosive disorder: marked by sudden, unpredictable acts of violent, aggressive behavior in otherwise normal persons; mixed states are the signs of depression and mania at same time [5, 7]. The prevalence of, morbidity from, and mortality and costs associated with bipolar disorder make its effective treatment and, ideally, prevention important goals within psychiatry [9, 10]. Drug treatment for bipolar disorder has three symptom targets such as manic symptoms, mixed episodes, or depression and is usually given in stages. In acute treatment, the objective is to resolve an episode that has already developed. In maintenance treatment, the objective is to delay the occurrence of future episodes, minimize the severity of episodes that do occur, and reduce the severity of symptoms between episodes [11-13].

Lithium: Lithium is coined from the Greek "lithos," meaning stone. Chemically, lithium is the simplest drug among those used in psychiatric therapy, as it is the lightest metal in nature. Lithium salts showed great efficacy in the treatment of manic disorder and they did so in a short period of time within sev-

Citation: Gudisa Bereda. Pharmacological Management of Bipolar Disorder. J Clin Med Img Case Rep. 2022; 2(3): 1152.

eral days. Lithium is the drug of choice in treating recurrent bipolar affective disorder (i.e., manic-depressive illness). Lithium was also relatively effective in treating manic manifestations in early dementia. Lithium is less effective in treatment of mixed and rapid cycling. Three of the six most agitated schizophrenic patients became eased and calm and were docile and treatable for the first time in years. All of them returned to their original state when lithium was stopped. The recommended therapeutic Lithium blood levels for the treatment of acute mania range from 0.6–1.2 mEq/L, whereas maintenance levels could be lower, ranging from 0.6 to 0.9 mEq/L. Levels higher than 1.2mEq/L are potentially toxic. When treating a patient with lithium, creatinine clearance is regarded to be the most reliable marker of kidney function to take into consideration. The adverse effects of lithium therapy have two digestive system (nausea, vomiting, diarrhoea, abdominal pain, etc.) and nervous system (tremors, dizziness, asthenia, depression, etc.) categories of side effects, which were disappeared quickly in 2 to 4 days) after lithium discontinuation; renal problems either acute or chronic; hypothyroidisms; cardiac problems. Drug-drug interactions: angiotensin converting enzyme inhibitors, loop diuretics, metronidazole and thiazides decrease lithium dose by 50%. If lithium coadministered with iodine salts perhaps escalated the risk of hypothyroidism. Sodium containing preparations, theophylline, chlorpromazine etc perhaps reduced the serum levels of lithium. If lithium administered coincidentally with sibutramine perhaps escalated the pitfall of serotonin syndrome [14-17].

Valproate: Valproic acid is FDA approved for the treatment of acute manic episodes. Patients respond relatively rapidly (within 1–2 weeks and often a few days). Valproate appears to have a more robust anti-manic effect than lithium in rapid cycling and mixed episodes. Therapeutic serum levels range between 50 and 150 mg/mL. Side effects of valproic acid are gastrointestinal effects, tremor, sedation, pancreatitis, liver toxicity, increased appetite, hallucinations, hyperammonaemia, hepatotoxicity (fatal adverse effects), pancreatitis, blood dyscrasias, weight gain and polycystic ovarian syndrome. Drug-drug interactions: Rifampicin, phenytoin, phenobarbitone etc decreased valproic acid levels. Aspirin and felbamate increases the valproic acid levels [18, 21].

Carbamazepine: Carbamazepine is approved by the FDA only for the treatment of bipolar mania. The response rate against acute mania is close to 50% (similar to that of valproic). However, the response rate against bipolar depression appears to be lower (roughly 30% or less). Carbamazepine seems to be less effective in the prophylaxis against depressive than against manic/mixed episodes and less effective than lithium. Carbamazepine has been shown to be effective in the treatment of manic-depressive illness and aggression due to dementia in the elderly. Adverse effects are dose-related and include double or blurred vision, dizziness, sedation, ataxia, agranulocytosis, aplastic anemia, hepatic failure, stevens-johnson syndrome, and diplopia, vertigo, gastrointestinal disturbances, cognitive impairment and hematological effects. Drug-drug interactions: Carbamazepine decreased the efficacy of oral contraceptives if given concurrently. Carbamazepine decreased the half-life of doxycycline. Carbamazepine reduces the tolerance to alcohol [22-25].

Lamotrigine: Lamotrigine, at a daily dosage of 50–200 mg may be effective in the treatment of acute bipolar depression but not mania. Treatment should be initiated slowly; 25 mg daily for the first 2 weeks and then 50 mg for another 2 weeks, followed by slow increases, in order to avoid a moderately high incidence of rash. It was also found to be effective in preventing relapse in a six-month study of rapid-cycling BD II patients, most of who suffered from recurrent depressions. Adverse reactions to lamotrigine can include a serious skin rash in a small percentage of patients, which if unchecked can progress into Stevens-Johnson syndrome and toxic epidermal necrosis; dizziness, leucopenia, headache. Drug-drug interactions: Enzyme inducing medications such as phenytoin, carbamazepine, phenobarbitone, rifampicin, etc enhanced the metabolism of lamotrigine. Valproic acid decreases the metabolism of lamotrigine [26-29].

Antipsychotics: First generation (typical) antipsychotics are considered to be the traditional first-line treatment for acute mania. Mostly haloperidol, have been used for long and are generally regarded to act faster than mood stabilizers. Haloperidol is highly binding to dopamine 2 receptors, then cause more extra pyramidal symptoms) and higher incidence of tardive dyskinesia. Unlike First generation (typical) antipsychotics, second generation (atypical) antipsychotics do not induce depression. Olanzapine, risperidone, quetiapine, ziprasidone and aripiprazole have already been approved by the food and drug administration for the treatment of acute mania. Second generation (atypical) antipsychotics adverse drug reactions are more cognitive problems such as more sedation and more anti-cholinergic side effect; more cardiovascular side effect and other side effect [30-34].

Other agents such as antidepressants (currently, fluoxetine, as part of the fluoxetine plus olanzapine combination, is the only antidepressant medication officially approved by the food and drug administration for the treatment of bipolar depression) and lurasidone is the first antidepressants whose efficacy in bipolar disorder was studied in the treatment of the depressive phase exclusively)) [35]; other modern antiepileptic agents such as gabapentin was one of the first third-generation antiepileptic drugs to be studied for bipolar disorder and as almost all of them, it was initially evaluated for the treatment of mania [36].

Conclusion

Bipolar disorder, largely due to its chronic and recurrent course, poses an important burden for the patient, the family and the society and its treatment is essential to avoid the main complications of the disease. In developed countries, bipolar disorder is ranked among the top 10 causes of disability. The prevalence of, morbidity from, and mortality and costs associated with bipolar disorder make its effective treatment and,

ideally, prevention important goals within psychiatry. Lithium is less effective in treatment of mixed and rapid cycling. Three of the six most agitated schizophrenic patients became eased and calm and were docile and treatable for the first time in years. All of them returned to their original state when lithium was stopped.

Acknowledgments: The author would be grateful to anonymous reviewers for the comments that increase the quality of this manuscript.

Data Sources: Sources searched include Google Scholar, Research Gate, PubMed, NCBI, NDSS, PMID, PMCID, Scopus database, Scielo and Cochrane database. Search terms included: pharmacological management of bipolar disorders.

Funding: None.

Availability of data and materials: The datasets generated during the current study are available with correspondent author.

Competing interests: The author has no financial or proprietary interest in any of the material discussed in this article.

References

1. Muñoz FL et al. A History of the Pharmacological Treatment of Bipolar Disorder. Int. J Mol Sci. 2018; 19:2143.

2. Young JW, Henry BL, Geyer MA. Predictive animal models of mania: Hits, misses and future directions. Br. J. Pharmacol. 2011; 164:1263-1284.

3. Vos T, Flaxman AD, Naghavi M. Global Burden of Disease Study 2010. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: A systematic analysis for the Global Burden of Disease Study 2010. Lancet. 2012; 380:2163-2169.

4. Vieta E. Managing Bipolar Disorder in Clinical Practice; Current Medicine Group Ltd. London, UK, 2007.

5. Harrison PJ et al. Innovative approaches to bipolar disorder and its treatment. Ann. N.Y. Acad. Sci. 1366. 2016; 76-89.

6. Phillips ML & DJ Kupfer. Bipolar disorder diagnosis: challenges and future directions. Lancet. 2013; 381:1663-1671.

7. Miller S, B Dell'Osso & TA Ketter. The prevalence and burden of bipolar depression. J. Affect. Disord. 2014; 169(1):S3-S11.

8. Di Florio A, N Craddock &M. van den Bree. Alcohol misuse in bipolar disorder. A systematic review and metaanalysis of comorbidity rates. Eur. Psychiatry. 2014; 29:117-124.

9. Cipriani A, JR Geddes, J Higgins & G Salanti. Conceptual and technical challenges in network meta-analysis. Ann. Intern. Med. 2013; 159:130-137.

10. Mavridis D, M Giannatsi, A Cipriani & G Salanti. A primer on network meta-analysis with emphasis on mental health. Evid. Based Ment. Health. 2015; 18:40-46.

11. Miklowitz DJ et al. The psychopathology and treatment of bipolar disorder. Annu. Rev. Clin. Psychol. 2006; 2:199-235.

12. Goldberg JF, Whiteside JE. The association between substance abuse and antidepressant-induced mania in bipolar disorder: a preliminary study. J. Clin. Psychiatry. 2002; 63:791-95.

13. Kowatch R, DelBello MP. The use of mood stabilizers and atypical antipsychotics in children and adolescents with bipolar disorders. CNS Spectr. 2003; 8:273-80.

14. Baumeister AA, Hawkins MF, López-Muñoz F. Toward standardized usage of the word serendipity in the historiography of psychopharmacology. J. Hist. Neurosci. 2010; 19:254-271.

15. López-Muñoz F, Alamo C, Cuenca E. La Década de Oro de la Psicofarmacología (1950–1960): Trascendencia histórica de la introducción clínica de los psicofármacos clásicos. Psiquiatr. COM. 2000; 4:N◦3.

16. Johnson GFS. Mood Stabilizers (I). Discovering of Antimanic Properties of Lithium Salts. In History of Psychopharmacology. The Revolution of Psychopharmacology: The Discovery and Development of Psychoactive Drugs. TX, USA. 2014; 161-168.

17. Rappa LR, Larose-Pierre M, Branch E, Iglesias AJ, Norwood DA, et al. Desperately Seeking Serendipity: The Past, Present, and Future of Antidepressant Therapy. J. Pharm. Pract. 2001; 14:560-569.

18. Citrome L, Jaffe A, Levine J, Allingham B. Use of mood stabilizers among patients with schizophrenia, 1994-2001. Psychiatr. Serv. 2002; 53:1212.

19. Heenren O, Sanchez de Carmora M, Vasquez G, Cordoba R, Forero J, Madrid L, et al. Psychopharmacological treatment of bipolar disorder in Latin American. Rev. Psiquiatr. Salud Ment. 2011; 4:205-211.

20. Tohen M, Ketter TA, Zarate CA, Suppes T, Frye M, Altshuler L, et al. Olanzapine versus divalproex sodium for the treatment of acute mania and maintenance of remission: A 47-week study. Am. J. Psychiatry. 2003; 169:1263-1271.

21. Goodwin FK, Fireman B, Simon GF, Hunkeler EM, Lee J, Revicki D. Suicide risk in bipolar disorder during treatment with lithium and valproex. JAMA. 2003; 290:1467-1473.

22. García-Bonetto GM, Nieto IR, Chapa R, Adrianzen C, Brnabic A, Meyers AL, et al. Pharmacological treatment outcomes in Latin American patients with bipolar I disorder. Arch. Neurocienc. 2009; 14:215-223.

23. American Psychiatric Association. Practice guideline for the treatment of patients with bipolar disorder. Am. J. Psychiatry. 2002; 159(4):1-50.

24. Álamo C, López-Muñoz F, Guerra JA. Bases neurobiológicas del empleo de antiepilépticos en el trastorno bipolar. Actas Esp. Psiquiatr. 2008; 36(3):3-21.

25. Bowden CL, Calabrese JR, Sach G, Yatham LN, Behnke K, Mehtonen, et al. Lamictal 605 Study Group. A placebo-controlled 18-months trial of lamotrigine and lithium maintenance treatment in recently manic or hypomanic patients with bipolar I disorder. Arch. Gen. Psychiatry. 2003; 60:392-400.

26. Geddes J, Huffman R, Paska W, Evoniuk G, Thompson T. Lamotrigine for acute treatment of bipolar depression: Individual patient data meta-analysis of five randomized, placebo-controlled trials. Bipolar Disord. 2007; 9(1):42-43.

27. Bowden CL, Karren NV. Lamotrigine in the treatment of bipolar disorder. Expert Opin. Pharmacother. 2002; 3:1513-1519.

28. Goodwin GM, Bowden CL, Calabrese JR, Grunze H, Kasper S, et al. A pooled análisis of 2 placebo-controlled 18-month trial of lamotrigine and lithium maintenance in bipolar I disorder. JClin Psychiatry. 2004; 65:432-441.

29. Calabrese JR, Vieta E, Shelton MD. Lastest maintenance data on lamotrigine in bipolar disorder. Eur. Neuropsychopharmacol. 2003; 13(2):57-66.

30. Narasimhan M, Bruce TO, Masand P. Review of olanzapine in the management of bipolar disorders. Neuropsychiatr. Dis. Treat. 2007; 3:579-587.

31. Tohen M, Jacob TG, Grundy SL, McElroy SL, Banov MC, Janicak PG, et al. Efficacy of olanzapine in acute bipolar mania: A double-blind, placebo-controlled study. Arch. Gen. Psychiatry. 2000; 57:841–849.

32. Keck PE, Versiani M, Potkin S, West SA, Giller E, Ice K. Ziprasidone in Mania Study Group. Ziprasidone in the treatment of acute bipolar mania; a three-week, placebo-controlled, double-blind, randomized trial. Am. J Psychiatry. 2003; 160:741-748.

33. Keck PE, Marcus R, Tourkodimitris S, Ali M, Liebeskind A, Saha A, Ingenito G. Aripiprazole Study Group. A placebo-controlled, double-blind study of the efficacy and safety of aripiprazole in patients with acute bipolar mania. Am. J. Psychiatry. 2003; 160:1651-1658.

34. Khanna S, Vieta E, Lyons B, Grossman F, Kramer, M. Risperidone monotherapy in acute bipolar mania. Bipolar Disord. 2003; 5(1):60.

35. Loebel A, Xu J, Hsu J, Cucchiaro J, Pikalov A. The development of lurasidone for bipolar depression. Ann. N. Y. Acad. Sci. 2015; 1358:95-104.

36. Frye MA, Ketter TA, Kimbrell TA, Dunn RT, Speer AM, Osuch EA, Luckenbaugh DA, et al. A placebo-controled study of lamotrigine and gabapentin monotherapy in refractory mood disorders. J. Clin. Psychopharmacol. 2000; 20:607-614.