



# Medical Journal IMJ Health

ISSN: 2395-6291

Volume-10, Issue-12, December 2024

[www.imjhealth.org](http://www.imjhealth.org)

Download Now

Contact us



+91-7665235235



[www.imjhealth.org](http://www.imjhealth.org)



[info@imjhealth.org](mailto:info@imjhealth.org)

## Preface

We would like to present, with great pleasure, the inaugural volume-10, Issue-12, December 2024, of a scholarly journal, *International Multispecialty Journal of Health*. This journal is part of the AD Publications series *in the field of Medical, Health and Pharmaceutical Research Development*, and is devoted to the gamut of Medical, Health and Pharmaceutical issues, from theoretical aspects to application-dependent studies and the validation of emerging technologies.

This journal was envisioned and founded to represent the growing needs of Medical, Health and Pharmaceutical as an emerging and increasingly vital field, now widely recognized as an integral part of scientific and technical statistics investigations. Its mission is to become a voice of the Medical, Health and Pharmaceutical community, addressing researchers and practitioners in below areas

### **Clinical Specialty and Super-specialty Medical Science:**

It includes articles related to General Medicine, General Surgery, Gynecology & Obstetrics, Pediatrics, Anesthesia, Ophthalmology, Orthopedics, Otorhinolaryngology (ENT), Physical Medicine & Rehabilitation, Dermatology & Venereology, Psychiatry, Radio Diagnosis, Cardiology Medicine, Cardiothoracic Surgery, Neurology Medicine, Neurosurgery, Pediatric Surgery, Plastic Surgery, Gastroenterology, Gastrointestinal Surgery, Pulmonary Medicine, Immunology & Immunogenetics, Transfusion Medicine (Blood Bank), Hematology, Biomedical Engineering, Biophysics, Biostatistics, Biotechnology, Health Administration, Health Planning and Management, Hospital Management, Nephrology, Urology, Endocrinology, Reproductive Biology, Radiotherapy, Oncology and Geriatric Medicine.

### **Para-clinical Medical Science:**

It includes articles related to Pathology, Microbiology, Forensic Medicine and Toxicology, Community Medicine and Pharmacology.

### **Basic Medical Science:**

It includes articles related to Anatomy, Physiology and Biochemistry.

### **Spiritual Health Science:**

It includes articles related to Yoga, Meditation, Pranayam and Chakra-healing.

Each article in this issue provides an example of a concrete industrial application or a case study of the presented methodology to amplify the impact of the contribution. We are very thankful to everybody within

that community who supported the idea of creating a new Research with *IMJ Health*. We are certain that this issue will be followed by many others, reporting new developments in the Medical, Health and Pharmaceutical Research Science field. This issue would not have been possible without the great support of the Reviewer, Editorial Board members and also with our Advisory Board Members, and we would like to express our sincere thanks to all of them. We would also like to express our gratitude to the editorial staff of AD Publications, who supported us at every stage of the project. It is our hope that this fine collection of articles will be a valuable resource for *IMJ Health* readers and will stimulate further research into the vibrant area of Medical, Health and Pharmaceutical Research.



Dr. Kusum Gaur  
(Chief Editor)



Mr. Mukesh Arora  
(Managing Editor)

## **Board Members**

### **Dr. Kusum Gaur (Editor-in-chief)**

Dr. Kusum Gaur working as professor Community Medicine and member of Research Review Board of Sawai Man Singh Medical College, Jaipur (Raj) India.

She has awarded with WHO Fellowship for IEC at Bangkok. She has done management course from NIHFWS. She has published and present many research paper in India as well as abroad in the field of community medicine and medical education. She has developed Socio-economic Status Scale (Gaur's SES) and Spiritual Health Assessment Scale (SHAS). She is 1st author of a book entitled " Community Medicine: Practical Guide and Logbook.

**Research Area:** Community Medicine, Biostatistics, Epidemiology, Health and Hospital Management and Spiritual Health.

### **Mukesh Arora (Managing Editor)**

BE (Electronics & Communication), M.Tech (Digital Communication), currently serving as Assistant Professor in the Department of ECE.

### **Dr. AMER A. TAQA**

**Dr. AMER A. TAQA** is Professor and Head in Dental Basic Science Mosul University, Mosul, IRAQ. He has been registrar of department of Dental Basic Science Mosul University, Mosul, IRAQ. He has published about 100 of research papers and out of that 50 were of international level. He has awarded many times for scientific researches by Government. He has been member of many examination committees and also is a Member in Iraqi Scientific Staff. He has been working as Editor - reviewer in many journals.

**Research Area:** Dental Science.

### **Dr. I.D. Gupta**

Dr. I. D. Gupta is Professor Psychiatry and working as additional Principal and Dean of student welfare in SMS Medical College, Jaipur.

He is recipient of Prof. Shiv Gautam oration award by Indian Psychiatric Society. He has done training in YMRS at Monte Carlo and BPRS at Singapore. He has been President Indian Psychiatric Society, Rajasthan State Branch. He is author of "Psycho Somatic Disorder" chapter in 1st edition post graduate text book of Psychiatry by Vyas and Ahuja. He has also worked with National Mental Health Programme and has a lot of publication.

**Research Area:** Community Mental Health, Psycho somatic and liaison Psychiatry.

## **Dr. Lokendra Sharma**

Dr. Lokendra Sharma is Associate Professor Pharmacology and working as Nodal officer of SMS Medical College, Jaipur.

He is recipient of WHO Fellowship award on Poison Patient Management at Vietnam. He is resource faculty for Experimental Toxicology and Basic Course for Medical Education. He is presented and published a lot of research articles at national and international level.

**Research Area:** PHARMACOLOGY

## **Dr. Anuradha Yadav**

Dr. Anuradha Yadav is working as Professor Physiology, SMS Medical College, Jaipur (Rajsthan) India. She is a popular medical teacher and research scholar who had many publications in indexed journals.

**Research Area:** CVS & CNS physiology, Medical Education and Spiritual Health.

## **Dr. Rajeev Yadav**

Dr. Rajeev Yadav is working as Associate Professor Community Medicine, SMS Medical College, Jaipur (Rajsthan) India. He is member of Research Review Board of the Institute.

He has authored a book entitled "Community Medicine: Practcal Guide and Logbook".

**Research Area:** His area of Interest are Epidemiology, Biostatistics and Spiritual Health.

## **Prof. Dillip Kumar Parida**

Professor and Head in the Department of Oncology, AIIMS, Bhubaneswar.

He has done the Professional Training in Japan (Osaka University, NIBI, AHCC Research Association, Hyogo Ion Beam Center), ESTRO Fellowship in Denmark and India(AIIMS Delhi, BARC Mumbai, SCB Medical College-Cuttak, MKCG Medical College-Berhampur).

**Research Area:** Brachytherapy, Total Skin Electron Irradiation, Palliative Radiotherapy, Stereotactic & Conformal radiotherapy, Radiation Cell Biology, Cancer Genetics.

## **Dr. Praveen Mathur**

Dr. Praveen Mathur is working as Professor- Pediatric Surgery and is recipient of Commonwealth Fellowship in Pediatric Laparoscopy from Uk and fellowship award in minimal access Surgery (FMAS). He has done Clinical observer ship in the Department of Pediatric Surgery, Johns Hopkins University, Baltimore, USA. (2008). He has presented and published a number of research articles at national and international level. He is reviewer of prestigious Journal of Pediatric Surgery (JPS) and World Journal of Gastroenterology, Journal of neonatal Surgery (JNS).

**Research Area:** Pediatric Surgery & Laparoscopy.

## **Dr. Lokendra Sharma**

Dr. Lokendra Sharma is Associate Professor Pharmacology and working as Nodal officer of SMS Medical College, Jaipur.

He is recipient of WHO Fellowship award on Poison Patient Management at Vietnam. He is resource faculty for Experimental Toxicology and Basic Course for Medical Education. He is presented and published a lot of research articles at national and international level.

**Research Area:** PHARMACOLOGY.

## **Dr Rajeev Sharma (MS; FMAS; FIMSA;FCLS)**

He is working as Professor, Department of Surgery, Government Medical College, Chandigarh, India. He has done FMAS, FIMSA and FCLS along with MS (Gen Surgery).

He has about 50 international and national publications to his credit. He has held various positions in the Association of Minimal Access Surgeons of India (AMASI) from time to time. He has also acted as instructor of various AMASI skill courses held at different places in India. He has established Surgical Technique learning centre at GMCH Chandigarh for imparting training to the budding surgeons in the field of minimal access surgery. He is also the reviewer in the subject in various journals.

**Research Area:** Minimal Access Surgery.

## **Dr Anshu Sharma (MS ANATOMY)**

She is Presently working as assistant professor in the department of Anatomy, GMCH, Chandigarh. She has many publications in various national and international journals. She is executive member of Anatomical Society of India (ASI) and North Chapter of ASI. She is also a member of editorial board of Journal of Medical College Chandigarh.

**Research Area:** Congenital Malformation, Developmental Anatomy.

## **Dr. Rajeev Yadav**

Dr. Rajeev Yadav is working as Associate Professor Community Medicine, SMS Medical College, Jaipur (Rajsthan) India. He is member of Research Review Board of the Institute.

He has authored a book entitled "Community Medicine: Practical Guide and Logbook".

**Research Area:** His areas of Interest are Epidemiology, Biostatistics and Spiritual Health.

## **Dr. Dilip Ramlakhyani**

Dr. Dilip Ramlakhyani working as Associate professor Pathology and member of IT Committee of Sawai Man Singh Medical College, Jaipur (Raj) India. He has published many articles in indexed journals.

## **Dr. Virendra Singh**

Dr. Virendra Singh worked as Supernatant and head of department of Pulmonary Medicine, SMS Medical College, Jaipur (Rajsthan) India.

He has gone abroad for many training courses and to present research papers. He had been chairman of Research Review Board of SMS Medical College, Jaipur. He is a great research scholar and had published book related to his faculty and had many publications in indexed journals.

## **Dr. Mahesh Sharma**

Dr. Mahesh Sharma is a Principle specialist General Surgery in Rajasthan State Government, India. He has been PMO of district hospitals for more than 15 years. He has gone abroad as observer of many of training related to his speciality. He has published and present many research paper in India as well as abroad.

He has developed Spiritual Health Assessment Scale (SHAS) with Dr. Kusum Gaur.

**Research Area:** General Surgery, Health and Hospital management and Spiritual Health.

## **Dr. Ravindra Manohar**

Professor Community Medicine, working as head of department of PSM, SMS Medical College, Jaipur (Rajsthan) India.

Previously he has worked in BP Kiorala Institute of Medical Sciences, Nepal. He has visited CDC Atlántica for a Statistical workshop. He has been convener of MBBS and PG exams. He is a research scholar and had many publications in indexed journals.



## **Dr. Praveen Mathur**

Dr. Praveen Mathur is working as Professor- Pediatric Surgery and is recipient of Commonwealth Fellowship in Pediatric Laparoscopy from Uk and fellowship award in minimal access Surgery (FMAS). He has done Clinical observer ship in the Department of Pediatric Surgery, Johns Hopkins University, Baltimore, USA. (2008). He has presented and published a number of research articles at national and international level. He is reviewer of prestigious Journal of Pediatric Surgery (JPS) and World Journal of Gastroenterology, Journal of neonatal Surgery (JNS).

**Research Area:** Pediatric Surgery & Laparoscopy.

# Table of Content

Volume-10, Issue-12, December 2024

S.No	Title	Page No.
1	<p><b>Bipolar Disorder with Comorbid Substance Use Disorder in a Young Male not Responding to Combination Therapy: Endoxifen Use for 2 Years</b></p> <p><b>Authors:</b> Dr. Amarpreet Singh</p> <p> <b>DOI:</b> <a href="https://dx.doi.org/10.5281/zenodo.14575890">https://dx.doi.org/10.5281/zenodo.14575890</a></p> <p> <b>Digital Identification Number:</b> IMJH-DEC-2024-1</p>	01-04



# Bipolar Disorder with Comorbid Substance Use Disorder in a Young Male not Responding to Combination Therapy: Endoxifen Use for 2 Years

Dr. Amarpreet Singh

Associate Professor, KD Medical College, Mathura, India

Received:-27 November 2024/ Revised:- 13 December 2024/ Accepted: 20 December 2024/ Published: 31-12-2024

Copyright © 2024 International Multispecialty Journal of Health

This is an Open-Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted

Non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Abstract**— Impulsivity is common to both bipolar disorder (BD) and substance use disorder (SUD). Bipolar disorder is in fact a risk factor for SUD, wherein substances may be used to achieve symptom relief. Impulsivity is associated with excessive protein kinase C (PKC) activity, and is implicated in the development of BD. This case report describes the use of endoxifen, a direct PKC inhibitor, for the management of a young male with BD and SUD who was not responsive to combination therapy with pharmacotherapies including lithium, haloperidol, and risperidone. The inclusion of endoxifen in the treatment regimen while discontinuing haloperidol and tapering of the dose of lithium led to reduced substance use and improvement of the symptoms of bipolar I mania within 3 weeks. The patient tolerated the treatment well, including long-term use for 2 years. Therefore, the utility of endoxifen in the management of SUD could be explored in larger studies.

**Keywords**— bipolar disorder, endoxifen, impulsivity, protein kinase C, substance use disorder.

## I. INTRODUCTION

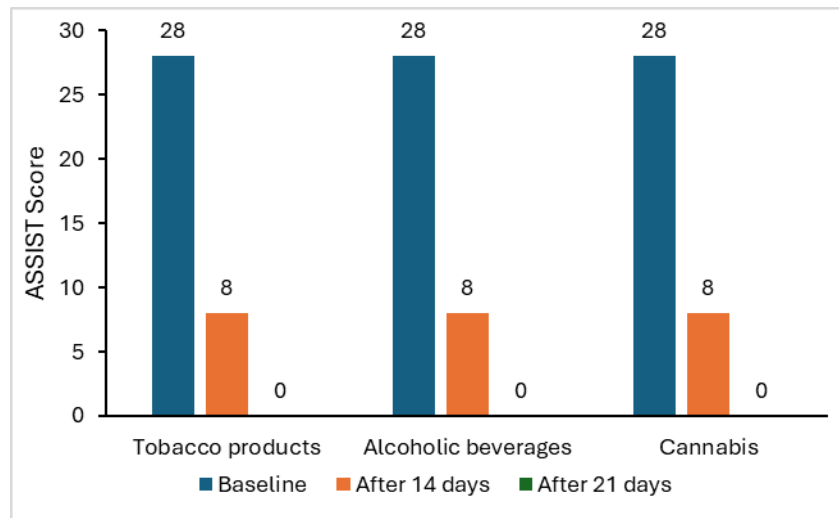
Impulsivity is a phenomenon that is common to bipolar disorder (BD) as well as substance use disorder (SUD). Excessive protein kinase C (PKC) activity is associated with prefrontal cortex deficits, and dysregulation in this brain region is associated with impulsivity.<sup>1,2</sup> Inhibition of PKC may help alleviate impulsivity in both BD and SUD patients. BD is a risk factor for addictions to alcohol, tobacco, opiates, cannabis, etc.<sup>3</sup> Comorbid addictions in BD could be mediated by shared neurobiology or involvement of neurotransmitter mechanisms. Furthermore, individuals with BD may “self-medicate” with substances to alleviate symptoms.<sup>4</sup>

This case report describes the management of a young male with BD and SUD (alcohol, tobacco, and cannabis), who was not responsive to combination therapy despite adherence to therapy. The inclusion of endoxifen in the treatment regimen led to a favorable response for mania, SUD and overall impulsivity. A full recovery was noted within 3 weeks of initiating endoxifen usage. Long-term treatment with endoxifen for 2 years did not lead to adverse effects and the patient did not consume substances during the treatment. Being a direct PKC inhibitor, endoxifen treatment leads to a faster response in reducing impulsivity in both SUD and BD.

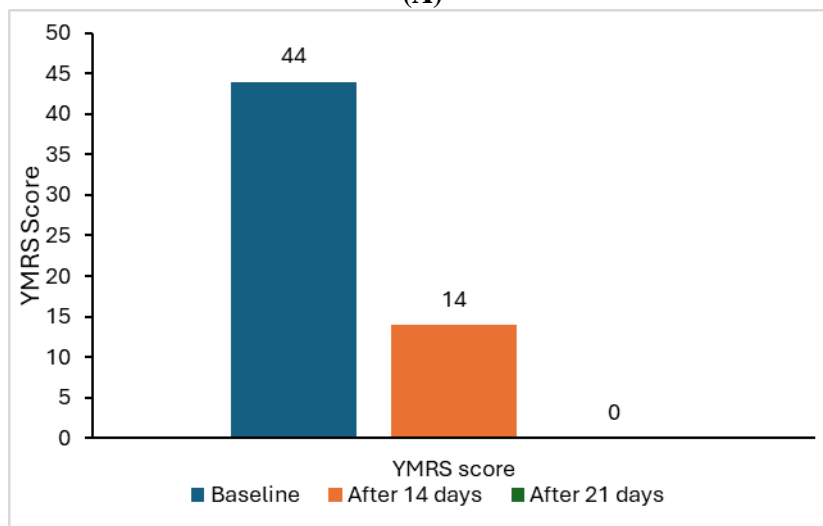
## II. CASE REPORT

A 25-year-old male diagnosed with BD 2 years and 2 months prior presented with an increase in symptoms for 3-4 weeks. The patient had a history of polysubstance use (alcohol, tobacco, and cannabis) which was absent before the diagnosis of BD. He consumed 350 mL of alcohol, 30 cigarettes and two joints of cannabis daily.

This patient was an engineer who used to work from home. He lived with his family and was unmarried. The patient presented with grandiosity, overactivity, over-talkativeness, substance use and decreased sleep. There was a high impulsivity to consume alcohol, tobacco and cannabis. The Young Mania Rating Scale (YMRS) score was 44 out of 60, and the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) score was 28 out of 36 for tobacco products, 28 out of 36 for alcoholic beverages, and 28 out of 36 for cannabis, indicating the need for more intensive treatment (Figures 1A and 1B).



(A)



(B)

**FIGURE 1. (A) Change in ASSIST scores with endoxifen treatment (B) Change in YMRS score with endoxifen treatment.**

*ASSIST: Alcohol, Smoking and Substance Involvement Screening Test; YMRS: Young Mania Rating Scale. Maximum ASSIST score: 36 for each substance; maximum YMRS score: 60.*

Based on the diagnosis of BD and SUD, the patient was initiated on lithium (450 mg twice-daily), haloperidol (15 mg daily) and risperidone (4 mg twice-daily) for 1 month. This treatment was targeted to mania, substance use, and impulsivity, since it was likely that SUD was linked to BD. The patient was adherent to the therapy and no side effects occurred; however, there was no improvement noted in the symptoms.

The patient was hospitalized and the treatment regimen was altered. Haloperidol was discontinued. Endoxifen 8 mg was prescribed for 2 days, after which the dose was increased to 8 mg twice-daily. Lithium was tapered off over 15 days, as endoxifen was included in the treatment regimen as a mood stabilizer. Risperidone was continued at a dose of 4 mg daily. The patient was discharged after 7 days. At the first follow-up visit (7 days after discharge) it was noted that alcohol consumption had reduced by 60-70% while the consumption of tobacco and cannabis had ceased. At this point the ASSIST score was 8 out of 36 for each of tobacco products, alcoholic beverages and cannabis, and the YMRS score was 14 out of 60 (Fig. 1A and 1B).

Full recovery was noted within 3 weeks of initiating endoxifen treatment, at which time the patient did not consume alcohol, tobacco and cannabis. In addition, symptoms of bipolar I mania, such as grandiosity, overactivity, over-talkativeness and decreased sleep had diminished. Overall impulsivity had reduced as well. The ASSIST score and the YMRS score were both 0 (Fig. 1A and 1B). The patient was stable on endoxifen 8 mg once-daily and risperidone 4 mg daily with no recurrent symptoms. The patient has been on endoxifen monotherapy for 2 years with no adverse events and no substance consumption.

The patient was compliant with the treatment and the patient's family was happy with the treatment. He continues his job as an engineer working from home without work distress and disability due to his psychiatric condition.

### III. DISCUSSION

There is a strong association between BD and alcohol and nicotine dependence, as well as the use of illicit drugs.<sup>3</sup> Individuals who consume illicit substances may be unable to quit or reduce consumption due to deficient impulse control.<sup>2</sup> BD is characterized by dysregulation in the prefrontal cortical deficits, and lesions in this brain region are associated with impulsivity.<sup>1</sup> Increased PKC activity can lead to impulsivity, and impulsivity is noted in both BD and SUD. Reducing PKC can reduce impulsivity and improve the patients of BD and SUD.<sup>1,2,5</sup>

In the case described, the patient was working from home, which could have led to increased stress due to the blurred boundaries of work-life balance. The paucity of face-to-face interactions and absence of workplace support can increase the likelihood of developing a mood disorder.<sup>6</sup> BD and the associated extreme mood states can damage social relationships, and patients with BD are less likely to be married.<sup>7</sup> Individuals with BD may consume illicit substances to improve mood, alleviate tension or boredom, increase energy, or to escape from reality. There are several consequences of comorbid SUD, including higher severity of BD with more relapses and poor response to pharmacotherapy. In addition, the risk of suicide and tendency to commit violent crimes is higher. Individuals with comorbid SUD and BD tend to have a higher lifetime risk of infection with hepatitis C virus and HIV. Therefore, effective pharmacotherapy is essential for the management of these comorbid conditions.<sup>3</sup> The complexity in the development of BD and the social impact of this condition underscores the need for an effective and safe therapeutic option which resolves both manic symptoms and substance use, and can be used for long-term treatment.

Both BD and SUD are characterized by impulsivity. Impulsivity involves the attenuation of control mechanisms that would otherwise suppress reward-driven responses. The resulting 'disinhibition' or predisposition towards can present as SUD.<sup>2</sup> Dysregulation in the prefrontal cortex are known to impulsivity and poor judgment. Individuals with BD have prefrontal cortical deficits, associated with altered PKC intracellular signaling. Excessive PKC activation can disrupt prefrontal cortical regulation, thus leading to signs of impulsivity.<sup>1</sup>

Endoxifen is a direct PKC inhibitor which reduces the signs of impulsivity in both mood disorder and substance use,<sup>6,7</sup> unlike lithium and valproate which are indirect inhibitors of PKC. Being independent of CYP2D6 genetic polymorphisms, endoxifen has predictable bioavailability and lacks drug-drug interactions unlike the parent molecule, tamoxifen. Endoxifen achieves early remission in patients with BD which could be attributed to the direct inhibition of PKC.<sup>5</sup>

In this case study, endoxifen was added to the treatment regimen as it is a direct PKC inhibitor. PKC can lead to impulsivity through its action in the prefrontal cortex, and endoxifen inhibits PKC, potentially alleviating symptoms of mania as well as impulsivity associated with substance abuse. This was needed as PKC inhibition is necessary to reduce impulsivity in BD and SUD. Endoxifen was well-tolerated and its rapid efficacy within 3 weeks permitted the reduction of other drugs and reduced the pill burden. Furthermore, long-term use of endoxifen for 2 years did not lead to adverse effects, and the patient did not consume substances throughout treatment and was maintained on remission. Phase II and III clinical trials have demonstrated that endoxifen has rapid antimanic effects compared with divalproex and reduces the YMRS score significantly.<sup>5,8</sup> There have been several recent case reports which highlight the efficacy of endoxifen in managing impulsivity in BD and SUD.<sup>9-11</sup> The current case report adds to the growing evidence base for the utility of endoxifen in mood disorders and the comorbid conditions thereof.

### IV. CONCLUSION

Endoxifen is effective for the management of mania and comorbid SUD because it directly inhibits PKC and hence reduces impulsivity in both mania and SUD. This case study additionally demonstrates the safety of the 2 years of long-term use of endoxifen. It would be beneficial to explore the utility of endoxifen in the management of SUD based on its known tolerability profile and efficacy in reducing impulsivity.

### REFERENCES

- [1] Birnbaum SG, Yuan PX, Wang M, Vijayraghavan S, Bloom AK, Davis DJ, et al. Protein kinase C overactivity impairs prefrontal cortical regulation of working memory. *Science*. 2004;306(5697):882–4. <https://www.science.org/doi/abs/10.1126/science.1100021>.
- [2] Verdejo-García A, Lawrence AJ, Clark L. Impulsivity as a vulnerability marker for substance-use disorders: Review of findings from high-risk research, problem gamblers and genetic association studies. *Neurosci Biobehav Rev*. 2008;32(4):777–810. <https://www.sciencedirect.com/science/article/abs/pii/S0149763408000067>.

- [3] Preuss UW, Schaefer M, Born C, et al. Bipolar disorder and comorbid use of illicit substances. *Medicina*. 2021;57:1256. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8623998/>.
- [4] Stokes PRA, Kalk NJ, Young AH. Bipolar disorder and addictions: The elephant in the room. *Br J Psychiatry*. 2017;211(3):132-134. <https://www.cambridge.org/core/journals/the-british-journal-of-psychiatry/article/bipolar-disorder-and-addictions-the-elephant-in-the-room/125A34D8E4D994D6DF2BD805E73599F7>.
- [5] Ahmad A, Sheikh S, Khan MA, Chaturvedi A, Patel P, Patel R, et al. Endoxifen: A new, protein kinase C inhibitor to treat acute and mixed mania associated with bipolar I disorder. *Bipolar Disorders*. 2021;23(6):595–603. <https://onlinelibrary.wiley.com/doi/10.1111/bdi.13041>.
- [6] Bodner A, Ruhl L, Barr E, Shridhar A, Skakoon-Sparling S, Card KG. The impact of working from home on mental health: A cross-sectional study of Canadian worker's mental health during the third wave of the COVID-19 pandemic. *Int J Environ Res Public Health*. 2022;19(18):11588. <https://www.mdpi.com/1660-4601/19/18/11588>.
- [7] Owen R, Gooding P, Dempsey R, Jones S. The reciprocal relationship between bipolar disorder and social interaction: A qualitative investigation. *Clin Psychol Psychother*. 2017;24(4):911-918. <https://onlinelibrary.wiley.com/doi/abs/10.1002/cpp.2055>.
- [8] Ahmad A, Sheikh S, Shah T, Reddy MS, Prasad BSV, Verma KK, et al. Endoxifen, a new treatment option for mania: A double-blind, active-controlled trial demonstrates the antimanic efficacy of endoxifen. *Clin Transl Sci*. 2016;9(5):252-259. <https://ascpt.onlinelibrary.wiley.com/doi/10.1111/cts.12407>.
- [9] Ali SM, Ahmad A, Shahabuddin S, Ahmad MU, Sheikh S, Ahmad I. Endoxifen is a new potent inhibitor of PKC: a potential therapeutic agent for bipolar disorder. *Bioorg Med Chem Lett*. 2010;20:2665–7. <https://www.sciencedirect.com/science/article/abs/pii/S0960894X10002143>.
- [10] Dave M, Shanmugasundaram N. Endoxifen for the management of bipolar disorder with comorbid substance use disorder: A report of two cases. *Arch Biol Psychiatr*. 2023;1(1):25–28. <https://archivesbiologicalpsychiatry.org/endoxifen-for-the-management-of-bipolar-disorder-with-comorbid-substance-use-disorder-a-report-of-two-cases/>.
- [11] Kulkarni YA. Management approach to a patient with borderline personality disorder, trichotillomania, and alcohol dependence syndrome: use of endoxifen. *Int Multispecialty J Health*. 2024;10(3):1-4. <https://dx.doi.org/10.5281/zenodo.10899862>.

The background of the page is a dark red color with a light red grid pattern. In the center, there is a large, faint, light red caduceus symbol. To the left and right of the caduceus, there are faint, light red ECG (heart rate) lines. The overall design is clean and professional, typical of a medical or healthcare organization's branding.

**AD Publications**

**Sector-3, MP Colony, Bikaner, Rajasthan, INDIA**

**[www.adpublications.org](http://www.adpublications.org), [www.imjhealth.org](http://www.imjhealth.org), [info@imjhealth.org](mailto:info@imjhealth.org)**