Intermittent Explosive Disorder in an Adolescent Treated Successfully with a Combination of Oxcarbazepine and a High Dose of Sertraline – Case Report and Review on the Management of Intermittent Explosive Disorder

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Introduction

Intermittent explosive disorder (IED) is characterized by failure to resist an impulse or drive that can harm to oneself and others. Usually, the person feels uncomfortable before and has a sense of gratification after the act. The presenting problem is the lack of control over oneself during the act.[1] IED is classified as disruptive, impulse control, and conduct disorder under the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).[2] In the International Classification of Diseases-10th revision (ICD-10),[3] it is included under habit and impulse disorders, and ICD-11[4] has included it under impulse control disorders.

We reviewed the literature using various databases such as MEDLINE, Embase, and Google Scholar with the search terms "Management of IED." Only relevant articles pertaining to the current case report were considered in this article.

In IED, anger outbursts are seen upon minor provocation and have a rapid onset. It may last up to 30 min with little or no prodromal period. It may present with verbal and physical violence, which can cause bodily injury and property damage.[5] Episodes are associated with subjective distress and impairment in personal, interpersonal, and socio-occupational functioning and can result in legal issues.[1] In the United States, the prevalence of IED is 5.4%–6.9%.[5] Males are twice as commonly affected as females; symptoms appear at prepubertal age and peak in mid-adolescence, with a mean age of onset around 13–21 years.[1] IED is associated with comorbidities such as mood disorders, anxiety disorders, substance use disorders, antisocial and borderline personality disorders, and other impulse control disorders. This often leads to challenges in pharmacological and psychological management.

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There is limited literature on IEDs and their treatment in India. Here, we describe a case of long-standing IED in an adolescent girl.

Case Report

A 17-year-old adolescent girl from middle socioeconomic status presented to our outpatient department with complaints of physical aggression toward parents and peers, anger outburst, and reduced sleep and appetite from 10 years of age. Symptoms worsened in the past 4 months with increased frequency and intensity and were associated with physical aggression, school refusal, low mood, fatigue, and death wishes. Her symptoms were characterized by episodes of aggressive behavior involving physical assault lasting for 1 h, which are unprovoked and caused significant distress and dysfunction to her and the family. Symptoms are neither premeditated nor committed to achieving any tangible objectives.

She was born of a second-degree consanguineous marriage; there was no history of any peripartum complications; she had attained age-appropriate developmental milestones, had normal intellectual functioning and satisfactory academic functioning till 10 years of age, and is slow to warm temperament. No

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problematic behaviors in school or any complaints from teachers were reported and had a congenial family environment during childhood. She had a tuberculosis infection of the lungs at the age of 2 years and was treated with antitubercular medications.

The patient was treated elsewhere for 4 months with sertraline 100 mg and risperidone 4 mg; due to poor response, she was brought to us for consultation. After a detailed assessment, the diagnosis of IED was made as per the DSM-5 criteria. No mood symptoms were elicited. Atypical depression was ruled out there were no symptoms of laden paralysis, increased sleep, increased appetite, or interpersonal rejection sensitivity. The oppositional defiant disorder was ruled out as the agitation was not confined to the home environment but was also present in outside places and there were no features of blaming others for her mistakes or no features of annoying people deliberately. Disruptive mood dysregulation disorder was ruled out as between the anger episodes her mood was calm without any irritability. Systemic examination, metabolic parameters, and electroencephalogram were normal. Psychological assessments were done, and the 16-personality factor test report suggested low frustration tolerance, emotional sensitivity, and being aloof. The Temperament and Character Inventory suggested high harm avoidance and low self-directedness scores. The sentence completion test indicated disturbances in areas of self-concept.

The patient was continued on oral sertraline and the dose was increased to 200 mg gradually, as evidence suggests that selective serotonin reuptake inhibitors (SSRIs) are efficacious in IED.[6] The Modified Overt Aggression Scale (MOAS)[7] was used to assess the severity of aggression, initially score was 19. As the symptoms partially responded with a high dose of sertraline (MOAS score of 16), we added oral 150 mg of oral oxcarbazepine and increased it to 600 mg over 1 month. The patient and family reported a subjective improvement of 30% 1 week after starting oxcarbazepine, which was corroborated objectively by a MOAS score of 12. She was discharged on the same medications and followed up regularly. The symptoms significantly improved after a month corroborated objectively by a MOAS score of 0 and she started attending school regularly in the 2nd month. No significant adverse effects were noted during dose titration or follow-ups in the next 5 months. Informed consent was taken from the patient and family to use their details for publication purposes on follow-up.

Discussion

Patients diagnosed with IED may have several comorbidities, thus complicating the presentation. Hence, pharmacological management becomes challenging. There are no approved management guidelines on the best pharmacological interventions for IEDs. Our rationale for continuing sertraline is based on the evidence that low serotonin levels in the brain are the primary pathology in IED.[6] The evidence also suggests that oxcarbazepine is helpful in impulsive aggressive behaviors, thus we added oxcarbazepine.[8] Among other medications, randomized controlled trials (RCTs) are available for fluoxetine, showing promise in reducing aggressive behaviors in personality disorders.[9,10] Further, existing research suggests that lithium, propranolol, SSRI, and anticonvulsants show a reduction in impulsive aggressive behaviors in IED,[10-15] but results with valproate and levetiracetam were similar to that of placebo.[15,16] Psychological interventions like cognitive behavioral therapy have also shown some improvement in aggressive and impulsive behaviors.[17] However, in our patient, during the hospital stay, the psychological intervention was not done. Hence, the reduction of symptoms is due to medical management.

Review on pharmacological management of intermittent explosive disorder

Accurate diagnosis of IED is the key step in effective management. This review helps in understanding the evidence for the management of IEDs. SSRIs, anticonvulsants and mood stabilizers, benzodiazepines, and neuroleptics are the different medications used for IED. The available evidence, which is sparse, suggests that mild aggression is treated with SSRI, and severe forms of aggression are treated with anticonvulsants and mood stabilizers. Knowing which treatment is beneficial for each patient would still be challenging due to comorbidities and psychosocial factors. Hence, it would be better if treatment decisions are made by weighing the risk–benefit ratio for each medication in any given patient.[10]

Selective serotonin reuptake inhibitors for intermittent explosive disorder

Literature suggests that serotonergic dysfunction is associated with IED. Hence, SSRIs are used as they enhance serotonergic neurotransmission. Among the SSRIs, fluoxetine is studied more, and compared with other drugs by RCTs and is found to be helpful in the reduction of impulsive aggressive behavior.[11,13,18,19] Sertraline also helps reduce aggression in patients diagnosed with IED.[6] However, randomized trials are lacking for sertraline. There are no confirmed predictors for response to SSRI medications. However, evidence suggests that the symptoms of higher aggression, irritability, higher pretreatment neuroticism, and lower harm avoidance responded well to SSRI medications.[13,20] A detailed assessment of neurobiological correlates may be required to assess better predictors of response to SSRIs.

Anticonvulsants and mood stabilizers

There are overlapping affective states in aggression. Mood stabilizers and anticonvulsants such as valproate, lithium, and oxcarbazepine are also widely studied to reduce impulsive aggressive behaviors.[8,11,14,16,21-24]

Lorcaserin

Impulsive aggression was reduced in people treated with lorcaserin. However, the improvement was not statistically significant.[11]

Propranolol

Reduced impulsive aggressive behaviors have been noted in elderly patients with aggression but its use in IEDs is still questionable.[9]

Benzodiazepines

Benzodiazepines are used to treat aggressive behavior in patients with personality disorders. However, there is scant literature on the use of benzodiazepines in IEDs. Furthermore, there is potential for abuse. Hence, benzodiazepines are unlikely to be appropriate in IEDs.[25]

Conclusion

IED often poses challenges to the clinician in management. It requires detailed evaluation to rule out comorbidities and an individually tailored treatment plan. As seen in our case, the combination of SSRI and oxcarbazepine can significantly reduce the symptoms of IED when a response to monotherapy is poor. More detailed clinical studies are needed to streamline the management of IEDs.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

References

1. Coccaro EF. A family history study of intermittent explosive disorder. J Psychiatr Res 2010;44:1101-5.
2. Shapse SN. The Diagnostic and Statistical Manual of Mental Disorders. Lincoln: Steven N Shapse; 2008.
3. Coccaro EF, Posternak MA, Zimmerman M. Prevalence and features of intermittent explosive disorder in a clinical setting. J Clin Psychiatry 2005;66:1221-7.
4. Reed GM, First MB, Kogan CS, Hyman SE, Gureje O, Gaebel W, *et al.* Innovations and changes in the ICD-11 classification of mental, behavioural and neurodevelopmental disorders. World Psychiatry 2019;18:3-19.
5. Coccaro EF. Intermittent explosive disorder as a disorder of impulsive aggression for DSM-5. Am J Psychiatry 2012;169:577-88.
6. Feder R. Treatment of intermittent explosive disorder with sertraline in 3 patients. J Clin Psychiatry 1999;60:195-6.
7. Chukwujekwu DC, Stanley PC. The modified overt aggression scale: How valid in this environment? Niger J Med 2008;17:153-5.
8. Mattes JA. Oxcarbazepine in patients with impulsive aggression: A double-blind, placebo-controlled trial. J Clin Psychopharmacol 2005;25:575-9.
9. Jenkins SC, Maruta T. Therapeutic use of propranolol for intermittent explosive disorder. Mayo Clin Proc 1987;62:204-14.
10. Lee RJ, Wang J, Coccaro EF. Pharmacologic Treatment of the Intermittent Explosive Disorder. Intermittent Explosive Disorder. United States: Academic Press; 2019. p. 221-33.
11. Tahir T, Wong MM, Maaz M, Naufal R, Tahir R, Naidoo Y. Pharmacotherapy of impulse control disorders: A systematic review. Psychiatry Res 2022;311:114499.
12. Saha A. A case of intermittent explosive disorder. Ind Psychiatry J 2010;19:55-7.
13. Coccaro EF, Lee R, Breen EC, Irwin MR. Inflammatory markers and chronic exposure to fluoxetine, divalproex, and placebo in intermittent explosive disorder. Psychiatry Res 2015;229:844-9.
14. Hollander E, Tracy KA, Swann AC, Coccaro EF, McElroy SL, Wozniak P, *et al.* Divalproex in the treatment of impulsive aggression: efficacy in cluster B personality disorders. Neuropsychopharmacology 2003;28:1186-97.
15. Mattes JA. Comparative effectiveness of carbamazepine and propranolol for rage outbursts. J Neuropsychiatry Clin Neurosci 1990;2:159-64.
16. Mattes JA. Levetiracetam in patients with impulsive aggression: A double-blind, placebo-controlled trial. J Clin Psychiatry 2008;69:310-5.
17. McCloskey MS, Noblett KL, Deffenbacher JL, Gollan JK, Coccaro EF. Cognitive-behavioral therapy for intermittent explosive disorder: A pilot randomized clinical trial. J Consult Clin Psychol 2008;76:876-86.
18. Coccaro EF, Kavoussi RJ. Fluoxetine and impulsive aggressive behavior in personality-disordered subjects. Arch Gen Psychiatry 1997;54:1081-8.
19. Coccaro EF, Lee RJ, Kavoussi RJ. A double-blind, randomized, placebo-controlled trial of fluoxetine in patients with intermittent explosive disorder. J Clin Psychiatry 2009;70:653-62.
20. Phan KL, Lee R, Coccaro EF. Personality predictors of antiaggressive response to fluoxetine: Inverse association with neuroticism and harm avoidance. Int Clin Psychopharmacol 2011;26:278-83.
21. Sheard MH, Marini JL, Bridges CI, Wagner E. The effect of lithium on impulsive aggressive behavior in man. Am J Psychiatry 1976;133:1409-13.
22. Barratt ES, Stanford MS, Felthous AR, Kent TA. The effects of phenytoin on impulsive and premeditated aggression: A controlled study. J Clin Psychopharmacol 1997;17:341-9.
23. Stanford MS, Houston RJ, Mathias CW, Greve KW, Villemarette-Pittman NR, Adams D. A double-blind placebo-controlled crossover study of phenytoin in individuals with impulsive aggression. Psychiatry Res 2001;103:193-203.
24. Young JL, Hillbrand M. Carbamazepine lowers aggression: A review. Bull Am Acad Psychiatry Law 1994;22:53-61.
25. Berman ME, Taylor S. The effects of triazolam on aggression in men. Exp Clin Psychopharmacol 1995;3:411.