

Case Report

MANAGEMENT OF ALCOHOL WITHDRAWAL STATE IN A PATIENT WITH RESPIRATORY DEPRESSION

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ABSTRACT

Alcohol withdrawal state is generally managed using benzodiazepines. In various studies, it was found that anticonvulsants, including oxcarbazepine, are as effective as benzodiazepines in managing alcohol withdrawal state. This case report highlights the efficacy of oxcarbazepine in acute alcohol withdrawal state where benzodiazepines were contraindicated due to respiratory depression. We report the case of managing alcohol withdrawal state in a 50-year-old male with respiratory depression.

Key words: Alcohol, respiratory depression, carbamazepine, benzodiazepines

INTRODUCTION

Alcohol withdrawal state refers to a group of symptoms of variable clustering and severity, occurring on absolute or relative withdrawal of alcohol after repeated and usually prolonged and/or high dose use of alcohol.¹ It is managed primarily with benzodiazepines and thiamine supplementation.² Benzodiazepines have side effects like intolerance, hepatotoxicity, and respiratory depression.³ Hence, non-benzodiazepine agents may have to be used in such situations.⁴ Here is a case of managing complicated alcohol withdrawal in a patient with comorbid severe respiratory depression. This case is reported after obtaining consent from the patient.

CASE DETAILS

A 50-year-old male working as a manual

labourer was admitted to the pulmonology department with breathlessness and tiredness. He was diagnosed with multi-lobar pneumonic consolidation and hypoxia. There was a family history of alcohol dependence in his father. He had a history of alcohol dependence for the past 20 years, and no other history of substance use was reported. Also, he had a history of withdrawal delirium five years back. On the second day of admission, a psychiatry consultation was done when he developed withdrawal symptoms like tremors and insomnia. His last use of alcohol was four days back. Investigations done during the admission showed increased total count, mildly deranged renal function, and liver function tests. After consultation, he was started on oral lorazepam for the management of his alcohol withdrawal state, but on the first dose of oral lorazepam

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itself, his respiratory condition worsened, and he became more hypoxic. (SpO2 level dropped below 90% even with maximum oxygen flow). On day three of admission, he developed severe agitation and went into delirium, which further complicated the picture. As benzodiazepines were contraindicated, because of the worsening of his respiratory condition, he was started on Tab. Oxcarbazepine at a dose of 150 mg and gradually increased to 600mg over four days. Oral haloperidol 0.5mg twice daily was also given to control agitation. Thiamine supplementation was given parenterally. On the seventh day of admission, when his respiratory condition improved, a low dose of oral lorazepam, 4 mg in divided doses, was given for persistent mild withdrawal symptoms, such as insomnia and tremors. Serum electrolytes were monitored serially as there was a risk of hyponatremia due to the interaction of oxcarbazepine with diuretics. He responded well after this, and his delirium cleared in the next five days. He was discharged from the pulmonology department when his respiratory condition improved. Deaddiction treatment was continued on an outpatient basis from the psychiatry department.

DISCUSSION

In this patient, the alcohol withdrawal state could not be treated even with 2 mg of lorazepam in the initial phase as he had respiratory depression. Non-benzodiazepine anticonvulsants are found to be useful in managing alcohol withdrawal state.⁴ Schik et al. compared the efficacy and tolerability of oxcarbazepine with carbamazepine in 29 individuals in an alcohol withdrawal state. The oxcarbazepine group showed a significant improvement with lesser side effects and less craving.⁵ Hence Tab. Oxcarbazepine was chosen as the primary agent to treat acute alcohol withdrawal state in this case. Oral haloperidol for agitation and thiamine supplementation were also given. Low-dose lorazepam, 4 mg per day in divided doses, was added when his respiratory condition improved. At this dose of

lorazepam, there was no respiratory depression once his respiratory condition improved.

Primarily, for alcohol detoxification, benzodiazepines are used effectively. As it was contraindicated, a non-benzodiazepine like oxcarbazepine was found to be effective in managing severe alcohol withdrawal state in this case. The mechanisms of action of oxcarbazepine, which are helpful in alcohol withdrawal state, are inhibition of voltage-gated sodium channels and GABAergic potentiation.⁶ Considering the side effects of excessive sedation, abuse, and addiction, related to benzodiazepines, non-benzodiazepines like oxcarbazepine gained interest in treating acute alcohol withdrawal state.⁷ It reduces the seizure potential and promotes a reduction in alcohol withdrawal symptoms. Hence, it can be used effectively in managing moderate to severe alcohol withdrawal states in selected cases.⁸ Carbamazepine and oxcarbazepine also have some advantages over lorazepam as they have long half-lives and also reduce psychological symptoms associated with alcohol withdrawal state.^{5,9}

In this case, we could successfully manage a case of complicated alcohol withdrawal with comorbid respiratory depression, primarily with the non-benzodiazepine agent oxcarbazepine. Non-benzodiazepine anticonvulsants can be used to treat alcohol withdrawal state when the patients do not tolerate benzodiazepines.

REFERENCES

1. World Health Organization. The ICD-10 classification of mental and behavioural disorders: diagnostic criteria for research. Geneva: World Health Organization; 1993.
2. Bounds CG, Nelson VL. Benzodiazepines. [Updated 2021 Nov 14]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK470159/>
3. LiverTox: Clinical and research information

- on drug-induced liver injury [Internet]. Bethesda (MD): National Institute of Diabetes and Digestive and Kidney Diseases; 2012-. Benzodiazepines. [Updated 2017 Jan 24]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK548298/>
4. Barrons R, Roberts N. The role of carbamazepine and oxcarbazepine in alcohol withdrawal syndrome. *J Clin Pharm Ther* 2010;35:153-67. DOI: 10.1111/j.1365-2710.2009.01098.x.
 5. Schik G, Wedegaertner FR, Liersch J, Hoy L, Emrich HM, Schneider U. Oxcarbazepine versus carbamazepine in the treatment of alcohol withdrawal. *Addict Biol* 2005;10:283-8.
 6. Hammond CJ, Niciu MJ, Drew S, Arias AJ. Anticonvulsants for the treatment of alcohol withdrawal syndrome and alcohol use disorders. *CNS Drugs* 2015;29:293-311.
 7. Rojo-Mira J, Pineda-Álvarez M, Zapata-Ospina JP. Efficacy and safety of anticonvulsants for the inpatient treatment of alcohol withdrawal syndrome: A systematic review and meta-analysis. *Alcohol Alcohol* 2022;57:155-64.
 8. Farrokh S, Roels C, Owusu KA, Nelson SE, Cook AM. Alcohol withdrawal syndrome in neurocritical care unit: Assessment and treatment challenges. *Neurocrit Care* 2021;34:593-607.
 9. Malcolm R, Myrick H, Brady KT, Ballenger JC. Update on anticonvulsants for the treatment of alcohol withdrawal. *Am J Addict* 2001;10(s1):s16-s23.