



Case Report *Psychiatry*

Polysubstance puzzle: A case report on alcohol, pregabalin, cyproheptadine, and dexamethasone dependence

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ABSTRACT

This case report explores the intricate landscape of polysubstance dependence, focusing on a 24-year-old male presenting with concurrent reliance on alcohol, pregabalin, cyproheptadine, and dexamethasone. This unique case underscores the complexities inherent in diagnosing and managing overlapping substance use disorders, emphasizing the need for thorough assessment and comprehensive intervention strategies. With substance dependence representing a significant global health concern, this report contributes valuable insights to the scientific literature by elucidating the multifaceted dynamics of polysubstance misuse. A 24-year-old male of asthenic built, with a history of alcohol consumption for 8 years initiated by peer pressure and escalated by life stressors, presented with depressive symptoms and reliance on multiple substances. His main concerns included mood disturbances, fatigue, and decreased appetite. Clinical evaluation revealed depressive features, substance dependence, and comorbidities associated with polysubstance misuse. Notably, he self-medicated with pregabalin for its euphoric effects, consumed cyproheptadine and dexamethasone to alter his body weight, and relied on alcohol as a coping mechanism. Treatment involved pharmacotherapy and motivational enhancement therapy, resulting in significant improvement and subsequent abstinence from all substances. This case underscores the complexities encountered in diagnosing, treating, and managing polysubstance dependence, exemplified by the dependencies on alcohol, pregabalin, cyproheptadine, and dexamethasone within a single patient. A comprehensive treatment approach incorporating detoxification, tapering, and psychological counseling facilitated significant progress. Achievements included successful abstinence from alcohol and notable reductions in cravings for pregabalin, cyproheptadine, and dexamethasone.

Keywords: Poly-substance dependence, Alcohol, Pregabalin, Cyproheptadine, Dexamethasone, Detoxification, Tapering

INTRODUCTION

The case report illustrates the intricate nature of polysubstance dependence involving alcohol, pregabalin, cyproheptadine, and dexamethasone. It underscores the complexity of diagnosing and treating individuals with overlapping substance use disorders, highlighting the necessity for comprehensive assessment and interventions. Substance dependence remains a critical global health issue, affecting numerous individuals grappling with addiction to various substances.

Alcohol dependence triggers significant alterations in the brain's reward and stress mechanisms. Prolonged and excessive alcohol consumption can foster dependence, characterized by a withdrawal syndrome manifesting in physical and psychological distress upon cessation or

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significant reduction of alcohol intake. Consequently, the symptoms experienced upon discontinuing chronic alcohol use are diametrically opposed to the effects of intoxication.^[1]

Analysis of the international EudraVigilance AE reporting system provided compelling evidence of gabapentinoid abuse, identifying 7639 misuse/abuse/dependence reports for pregabalin and 4301 for gabapentin from 2004 to 2015, with 75% of events reported since 2012.^[2] Pregabalin is a commonly prescribed drug for conditions such as neuropathic pain, fibromyalgia, and generalized anxiety disorder. Its potential in addiction treatment, notably in addressing benzodiazepine withdrawal and preventing relapse in alcohol dependence, has garnered considerable interest.^[3]

Cyproheptadine, categorized as a first-generation antihistamine with supplementary anticholinergic, anti-serotonergic, and local anesthetic properties, boasts a wide range of applications. A study revealed a misuse rate of 72.9%, with higher usage among females and a decline with age.^[4] Its therapeutic uses include treating allergic reactions, nightmares linked to posttraumatic stress disorder, cyclical vomiting syndrome, stimulating appetite, managing drug-induced hyperhidrosis, and addressing selective serotonin reuptake inhibitor-induced sexual dysfunction.^[5]

Dexamethasone, a powerful synthetic glucocorticoid, is utilized in the treatment of diverse inflammatory and autoimmune disorders, including rheumatoid arthritis, bronchospasm, idiopathic thrombocytopenic purpura, adrenal insufficiency, and Addison's disease.^[6] A study in Morocco examining fattening practices found that 20.73% of women seeking to increase their weight resorted to oral corticosteroids.^[7]

This case stands out due to its inclusion of a variety of substances, each with the potential for interactions. Understanding the complexities involved in treating such cases is crucial.

CASE REPORT

A 24-year-old male of asthenic build with a normal birth history and developmental milestones belonging to lower middle socio-economic class was brought to the outpatient department by his father, who complained that for the past 8 years, the patient was having regular intake of multiple substances such as alcohol, pregabalin, cyproheptadine, and dexamethasone along with sadness of mood, loss of interest, easy fatigability, irritability, decreased sleep, and appetite. There was no family history of alcohol or any psychoactive substance abuse.

He started to consume alcohol under peer pressure around 8 years ago. Initially, he began with beer at a friend's party, then he gradually increased the quantity of alcohol, and

within a year, he was consuming around 180–250 mL of country-made alcohol every 2 days. The patient also used to have discord with his wife over his alcohol consumption habit. Then, one day, the patient met with an accident in which he suffered a fracture of his right tibia, for which he was applied a Plaster of paris (POP) cast for approximately 1½ months. During this time, the patient lost his job, there was no source of income, and was consuming alcohol, which was provided to him by his friends. This caused more discords between the couple and one day, the wife left the patient and filed for divorce. After this, the patient started to experience sadness of mood, loss of interest, and decreased sleep. Due to this, the patient increased the quantity of alcohol to around 350 mL per day, and it continued in this manner. Also, in the past, around 2–3 years ago, with a suggestion from his friend, had once consumed a high dose of pregabalin, about 7–8 tablets, which he got on his own from a medical store and experienced a euphoric effect, so he started to consume pregabalin 75 mg tablet in high doses, i.e., around 10 tablets in one go for its euphoric effect. He used to consume it 2–3 times a week. On several occasions, after buying the tablets as soon as he exited the medical store, he would swiftly ingest 10–15 tablets all at once. In addition, he started to increase the amount to 20 pregabalin tablets of 75 mg simultaneously in pursuit of an intensified euphoric sensation despite knowing that taking so many tablets together was not good for health and could have serious side effects. This lasted for about 1½–2 years, i.e., until admission to the hospital. Along with this, the patient had a decreased appetite and an asthenic build, which did not look appropriate to him, for which his friends taunted him. Therefore, he started taking tablet cyproheptadine 4 mg twice a day and dexamethasone 5 mg twice a day daily, which was given to him by a pharmacist to help him gain weight. He consumed these twice daily and a few weeks later got dependent on them. He tried to quit them, but after 2–3 days, he started to have a loss of appetite and restlessness, so he again started taking them for 1–1½ years. Due to multiple factors like unemployment, an ongoing case in court, depressed mood, and irritability, the patient further increased the consumption of alcohol. Hence, the patient was then brought to the outpatient department by his father, where he was assessed and admitted for further management; then, his relevant investigations were sent and management was started.

On Mental status examination (MSE), a young looking male of asthenic build having normal gait. Sitting on the chair with his shoulders drooped, eye contact was made and sustained, the patient was cooperative during the interview, and rapport was established. Psychomotor activity was decreased, speech productivity was slightly decreased, and reaction time was slightly increased. Affect appeared depressed and was congruent to mood and thought content. Thought content revealed ideas of worry and ideas of worthlessness. Insight was grade 3.

The patient was admitted, and after sending relevant investigations, the patient was initially started on a tablet chlordiazepoxide 100 mg/day, a tablet thiamine 300 mg/day, and tablet escitalopram 10 mg/day. Then, within 1 week dose of tablet chlordiazepoxide was increased to 125 mg/day and tablet escitalopram to 20 mg/day. Along with these, motivational enhancement therapy was also started, and the patient was given six to seven sessions. At the end of 10 days, there were no withdrawal symptoms, no craving for any of the substances, no irritability, sleep was improved, little depressive symptoms were present, and mood also improved. In the next 4 days, tablet chlordiazepoxide was tapered to 75 mg, and the patient was then discharged on the medication. Tablet dexamethasone, tablet pregabalin, and Cyproheptadine were tapered and then stopped over 10 days from the day of admission. At present, the patient is on regular follow-up and abstinent from alcohol, pregabalin, cyproheptadine, and dexamethasone.

DISCUSSION

Poly-substance abuse is common in the realm of substance dependence. Individuals may engage in the concurrent use of multiple substances for various reasons, such as seeking different effects or attempting to alleviate the side effects of one substance with another. The prevalence of polysubstance abuse is influenced by factors such as social environment, availability of substances, co-occurring mental health disorders, and individual vulnerabilities.

Alcohol use disorder poses a significant health challenge, as highlighted by a recent epidemiological survey. According to WHO one-fourth to one-third of the male population consumes alcohol in India.^[8] Alcohol consumption is generally more common in male than females. The interplay of psychosocial stressors and the reinforcing effects of alcohol can exacerbate the development and maintenance of dependence.

The euphoric effect of pregabalin was reported by more patients (1–10%) as compared to placebo (0.5%). It is thought that pregabalin's euphoric effect increases the risk of its abuse.^[9] Withdrawal symptoms of pregabalin may include insomnia, nausea, headaches, anxiety, excessive sweating, and diarrhea. In this scenario, the patient opted to self-medicate with pregabalin to experience its euphoric effects, aiming to alleviate his underlying depressive mood and feel better.

Cyproheptadine was commonly employed as an appetite stimulant, especially for conditions such as anorexia nervosa and cachexia. However, its long-term usage has shown limited effectiveness in promoting weight gain, leading to a shift away from its general recommendation for such purposes. In addition, there is apprehension about the inappropriate

promotion and usage of cyproheptadine as an appetite stimulant in some developing countries.^[10] As discussed in this case, the patient used to consume cyproheptadine to increase his body weight and later became dependent on it. When he tried to stop the drug, he started having loss of appetite and restlessness, which made him continue its use.

There are very few case reports of patients abusing pregabalin, cyproheptadine, and dexamethasone individually. As per our knowledge, there is no case report of polysubstance abuse of alcohol, pregabalin, cyproheptadine, and dexamethasone all in a single patient. Gabapentinoids and alcohol use may interact due to biological effects, psychological motivations like self-medication, and social factors such as peer influence. Understanding these dynamics is crucial for addressing polysubstance misuse effectively. Therefore, in the future, further research needs to be conducted to study these substances independently to understand the prevalence, clinical characteristics, risk factors and protective factors, pharmacological mechanisms, interventions and treatment guidelines, and public health implications.

CONCLUSION

This case sheds light on challenges faced in diagnosing, treating, and managing polysubstance dependence, encapsulated by the dependencies on alcohol, pregabalin, cyproheptadine, and dexamethasone in a single patient. Through a treatment strategy, including detoxification, tapering, and psychological counseling, the patient achieved substantial progress. At present, there is a dearth of studies to inform the management of cyproheptadine, dexamethasone, and pregabalin abuse in patients. More research in this area would also provide valuable insights for managing these conditions when they co-occur in a single patient, like the index case.

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Ethical approval

Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Conflicts of interest

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Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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