CASE REPORT: MANAGEMENT OF F-PHENIBUT WITHDRAWAL

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INTRODUCTION

Phenibut is a supplement used for its reported benefits to enhance mood, improve insomnia, assist in exercise recovery, boost cognition, and even aid in sexual performance (1). Excess use of this unregulated supplement can have toxic effects, leading to dependence and withdrawal after discontinuation. Phenibut withdrawal has been well-studied, and is typically treated with a combination of benzodiazepines, baclofen, phenobarbital, antipsychotics, and/or gabapentin (2). This is a case of F-phenibut overuse, withdrawal, and treatment. F-phenibut is an enantiomer of phenibut with higher affinity for the GABA-B receptor whose overuse and withdrawal have not been previously reported. In this report we will describe the differences in presentation and treatment for toxicity of this substance.

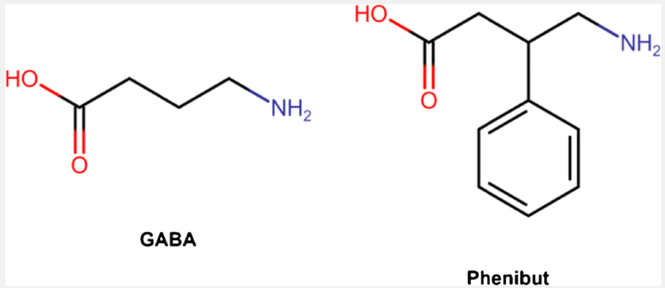

Figure 1: Molecular structure of Phenibut and GABA demonstrating the similarities of these substances (7).

CONCLUSIONS

This case report presented a patient who was experiencing F-phenibut withdrawal and was successfully treated using previously studied treatment methods for phenibut withdrawal. Given the higher binding affinity for the GABA-B receptor compared to phenibut, the management of F-phenibut withdrawal may require higher doses specifically of baclofen, as well as benzodiazepines, phenobarbital, and other pharmacotherapies for symptomatic management . Further research will be necessary to determine ideal medication combinations, dosage, and duration for treatment of this withdrawal syndrome.

CASE PRESENTATION

A 23-year-old male presented to the emergency department for concerns of anxiety, paranoia, and insomnia which had acutely worsened over the past 3-5 days. His vital signs at presentation were 155/111, HR 112, RR 16, Temp 98.3 F, SpO2 99%. He was triaged directly to emergency psychiatry. On assessment, the patient was reported to appear anxious, odd, and preoccupied, along with psychomotor slowing. He also endorsed difficulty expressing his thoughts. On interviewing the patient, he endorsed daily use of kratom and F-phenibut for several months before beginning to wean these substances about one month prior to presentation. He noted that he stopped taking kratom 1 month prior to presentation and F-phenibut 2-3 days previously and had not slept since stopping F-phenibut. He reported taking 900 mg of F-phenibut daily. Collateral obtained from family was consistent with patient's report of kratom and phenibut use as well as reported symptoms.

Labs drawn in the emergency department included CBC, CMP, TSH, ethyl alcohol, urinalysis, acetaminophen, and salicylate levels. These labs were all within normal limits. Urine drug screen was negative. No imaging was performed. In the emergency department the patient was treated with gabapentin 300 mg and propranolol 20 mg for withdrawal symptoms. On reassessment he remained hypertensive and tachycardic and began to develop a tremor in his bilateral upper extremities. He was given baclofen 10 mg after reviewing literature and discussing with other emergency medicine physicians. After receiving a dose of baclofen, the patient's tachycardia resolved, and blood pressure improved. He was admitted to the hospital for observation due to concern for F-phenibut withdrawal as well as concern of psychotic symptoms. The patient was started on treatment of baclofen 20 mg three times per day and gabapentin 300 mg three times per day. The patient was reassessed on day 2 of hospitalization and his mentation and psychotic symptoms were noticeably improved.

When evaluated by the Consultation-Liaison psychiatry team, the patient reported multiple attempts of self-weaning from F-phenibut; however he had been unsuccessful due to resulting panic attacks. Toxicology was consulted and recommended treatment with a 3-day baclofen taper. On discharge, the patient was instructed to continue this taper at home as follows: 20 mg 4 times per day on day 1, 20 mg 3 times per day on day 2, 20 mg 2 times per day on day 3. While hospitalized the patient reported feeling that baclofen doses had provided some relief of his withdrawal symptoms.

DISCUSSION

Phenibut is a GABA analog, whose only structural difference is the addition of a phenyl ring. This allows for increased permeability to the blood brain barrier. Phenibut mainly agonizes GABAB receptors, but also targets GABAA receptors, impacts dopamine metabolism, and possibly binds voltage-dependent calcium channels (3). β-(4-Fluorophenyl)-GABA, better known as F-phenibut, has a higher binding affinity to GABAB receptors than phenibut. Symptoms of phenibut intoxication include sedation, altered level of consciousness, delirium, psychosis, and agitation (3). Other sources have additionally reported seizures, dissociations, and possibly serotonin syndrome (1).

Symptoms of phenibut withdrawal include anxiety, agitation, tremors, palpitations, decreased appetite, and trouble sleeping (3). Other sources have reported additional symptoms, including hallucinations, psychosis, seizures, nausea, vomiting, hyperreflexia, rigidity, and clonus. These symptoms typically present around 2 days after most recent use (5). Due to the increased binding affinity to the $GABA_B$ receptor of F-phenibut compared to phenibut, it is likely that similar, yet more severe symptoms would be seen with its overuse (4).

Treatment of phenibut withdrawal typically requires a length of stay of 7.7 days (2). Medications for withdrawal seem to vary with different cases, and include baclofen, benzodiazepines, phenobarbital, and gabapentin (1). Our patient required a length of stay of 3 days and was treated inpatient with gabapentin and baclofen, and outpatient with an additional 3-day baclofen taper. This treatment method was successful for the patient, and he has not had any further known symptoms.

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