CASE REPORT

Phenibut dependence

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SUMMARY

Phenibut is a γ-aminobutyric acid (GABA) agonist designed and used as an anxiolytic in Russia. In Western countries, phenibut is not a registered medication but is available through online stores as a supplement. We present a case of a patient who used phenibut to self-medicate anxiety, insomnia and cravings for alcohol. While phenibut was helpful initially, the patient developed dependence including tolerance, significant withdrawal symptoms within 3–4 h of last use and failure to fulfil his roles at work and at home. He finally sought medical assistance in our addictions clinic. We have gradually, over the course of 9 weeks, substituted phenibut with baclofen, which has similar pharmacological properties, and then successfully tapered the patient off baclofen. This required approximately 10 mg of baclofen for each gram of phenibut.

BACKGROUND

Phenibut (β-phenyl-γ-aminobutyric acid, or phenylGABA) is a GABA-B agonist that was developed in the Soviet Union in the 1960s and used to treat a variety of conditions including insomnia, anxiety, depression, asthenia, posttraumatic stress disorder, stuttering, vestibular disorders, etc.[1] It is not an approved medication in Western countries, but it can be purchased online as a supplement.[2 3] The extent of the use, safety profile and societal and medical burden associated with such supplements is not known.[4] There is one documented report of phenibut withdrawal.[5] We present a rare case of phenibut dependence.

This case illustrates:

A. The potential therapeutic application of phenibut as a GABA agonist;
B. The abuse potential of phenibut;
C. A potential approach to the treatment of phenibut dependence using baclofen, which has similar pharmacological properties.

CASE PRESENTATION

The patient is a 35-year-old married man with two children, employed full-time as an IT specialist, who presented at our addictions clinic with an unusual case of phenibut dependence. He had purchased phenibut as an online 'supplement' to self-medicate his anxiety, dysphoria and cravings for alcohol. The patient reported alcohol consumption since the age of 12, with daily drinking beginning at the age of 17 and continuing until age 32. He reported using alcohol to cope with stress and the sequelae of parental neglect and emotional and physical abuse. He stopped drinking alcohol at the age of 32, after being diagnosed with gout, and was able to abstain from alcohol since then. However, he substituted a variety of substances to cope with ongoing stress, depression, anxiety and insomnia. He used opioids (various preparations of codeine, poppies, kratom) and benzodiazepines (phenazepam and diazepam). These were obtained from friends' prescriptions, purchased over the counter or online. There is a family history of alcohol use disorders on both the maternal and paternal sides. The patient had never received specialised addiction treatment before.

At the time of the assessment, he was abstinent from alcohol and actively using the 'supplements' phenibut (for 10 months) and kratom (for 2 years). He was taking 8 g of phenibut and 18 g of kratom per day. The patient found these two 'supplements' very helpful for coping with withdrawal symptoms from alcohol, benzodiazepines and poppies. He was unable to stop using them. He made several attempts to decrease his use of phenibut, but experienced heightened anxiety, anger and irritability. He felt very hostile towards his work colleagues and family members. He was isolating himself at home to keep from losing his temper. Discontinuation of kratom precipitated mild-to-moderate opioid withdrawal symptoms.

The patient sought medical advice on how to stop taking these two 'supplements', primarily phenibut. He also wanted help with underlying anxiety and depression that he had experienced for the past 18 years during the periods of abstinence from alcohol and other substances.

INVESTIGATIONS

Samples of both phenibut and kratom were taken to our clinical laboratory for testing. The presence of both substances was confirmed.

TREATMENT

Our treatment strategy was to substitute prescription medications with less abuse potential and better-known pharmacological profiles for the 'supplements' phenibut and kratom, and then taper off. Baclofen was selected for treatment of phenibut dependence due to the similarity of its structure and pharmacological profile to that of phenibut.[1] We also considered using benzodiazepines, but given the patient's previous use of diazepam and phenazepam, their abuse potential and the patient's history of alcohol dependence, we believed that baclofen would be more appropriate. It is worth noting that baclofen can also be used for the treatment of alcohol dependence. We considered substituting suboxone (a combination of buprenorphine and naloxone) for kratom and/or using clonidine for the treatment of potential opioid withdrawal

Table 1 Treatment schedule

Time in treatment	Baclofen (mg/day)	Phenibut (g/day)	Kratom (g/day)	Comments
First assessment	–	8	18	Beginning of treatment
Visit 1 (1 week)	15	7.5	18	Tried to reduce the dose of phenibut down to 6 g/day, but felt very aggressive and irritable
Visit 2 (2 weeks)	20	5	–	Reduced the daily dose of phenibut down to 5 g/day. Stopped using kratom
Visit 3 (3 weeks)	30	5	–	Could not further reduce the dose of phenibut
Visit 4 (4 weeks)	45	2.5	–	Reduced the dose of phenibut to 2.5 g/day, but felt that decrease was too fast
Visit 5 (5 weeks)	45	2.5	–	Adjusted to current doses of baclofen and phenibut
Visit 6 (7 weeks)	60	1	–	Reduced the dose of phenibut down to 1 g/day
Visit 7 (9 weeks)	60	–	–	Completely stopped using phenibut, has a lot of cravings, mostly for alcohol
Visit 8 (12 weeks)	50	–	–	Reduced the dose of baclofen and started experiencing mood swings, tension and anxiety. Prescribed citalopram 20 mg/day
Visit 9 (14 weeks)	40	–	–	Gradual reduction of baclofen dose, no anxiety or mood changes
Visit 10 (17 weeks)	30	–	–	Gradual reduction of baclofen dose, no anxiety or mood changes
Visit 11 (20 weeks)	20	–	–	Gradual reduction of baclofen dose, no anxiety or mood changes
Visit 12 (24 weeks)	–	–	–	Gradual reduction of baclofen dose, no anxiety or mood changes

symptoms. The patient was able to successfully stop using kratom without either intervention, however, as his withdrawal symptoms were relatively mild (self-limiting diarrhoea, diaphoresis and restlessness lasting for several days).

At the time of the assessment, it was not possible to clearly differentiate between primary mood and anxiety disorders and substance-induced disorders in this patient. We decided to address his substance use issues first, given that mood and anxiety symptoms emerged primarily during periods of abstinence from alcohol and drugs, and at the time of assessment he was not experiencing either of them. We increased the dose of baclofen incrementally while reducing the amount of phenibut taken daily as shown in table 1.

After 9 weeks of gradual substitution with baclofen, the patient was able to stop using phenibut completely. He was then tapered off baclofen over the following 12 weeks. He experienced intermittent anxiety, irritability and cravings for alcohol over the course of the treatment. At visit 9 (14 weeks in treatment), the patient was started on citalopram 20 mg once daily to manage re-emerging anxiety and depression.

OUTCOME AND FOLLOW-UP

The patient was discharged from the clinic in sustained full remission from alcohol and early full remission from phenibut after 24 weeks of treatment. He was not using any other substances and was not experiencing any problematic mood or anxiety symptoms. His only medication at the time of discharge was citalopram 20 mg/day.

DISCUSSION

This is the first and only case of phenibut dependence observed in our clinic out of approximately 1000 patients treated annually. We could locate only one published clinical case related to phenibut, which is a case of phenibut withdrawal,[5] describing symptoms very similar to those experienced by our patient. The case presented here suggests that phenibut may have therapeutic potential in attenuating cravings for alcohol as well as the anxiety, mood changes and insomnia that developed after our patient stopped drinking alcohol. It also very likely prevented the development of withdrawal symptoms when our patient stopped using benzodiazepines, which is consistent with previously published data on the use of phenibut for benzodiazepine withdrawal.[6] However, the patient developed not only signs and symptoms of phenibut withdrawal,[5] but also other features of DSM-IV substance dependence, including an inability to stop using phenibut on his own. We believe that this case illustrates the abuse potential of phenibut. In light of this, we believe that phenibut should not be made available as a supplement, but rather as a regulated prescription medication, as it is in Russia where it was originally synthesised.[1] Furthermore, we believe that sales of substances with proven psychoactive properties should be better regulated.

Another interesting aspect of this case was the pattern of interaction between alcohol, benzodiazepines, phenibut and baclofen. Phenibut was used by the patient to prevent a relapse to alcohol dependence; it very likely prevented benzodiazepine withdrawal and was substituted with baclofen. Given the similar pharmacological mechanisms of action on GABA receptors for all four substances,[1] we assumed cross-tolerance. The data on dose equivalence between phenibut and baclofen have not been published anywhere yet. In our case, we found that 8–10 mg of baclofen is a dose sufficient to substitute 1 g of phenibut, which may be helpful for establishing tapering schedules in future cases.

Learning points

- Phenibut has abuse potential and should not be considered as a supplement, but rather as a medication.
- Baclofen can be used for treatment of phenibut dependence.
- One gram of phenibut may be substituted with approximately 8–10 mg of baclofen.

Competing interests None.

Patient consent Obtained.

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