# t is illegal to post this copyrighted PDF on any website. Phembut Dependence and Withdrawal

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**P**henibut is a neuropsychotropic drug that is currently used at increasing rates due to online availability as an unregulated supplement. Case reports<sup>1,2</sup> have shown its potential to produce abuse and dependence and withdrawal symptoms after discontinuation. Research<sup>3</sup> has shown that drugs with similar structures can be utilized to alleviate phenibut withdrawal symptoms. This case report demonstrates the use of benzodiazepines to alleviate the withdrawal symptoms of phenibut in a 26-year-old man who visited the emergency department (ED) multiple times.

# **Case Report**

A 26-year-old man with a past psychiatric history of opioid use disorder initiated an over-the-counter phenibut supplement (200-500 mg) for anxiety and alleviation of his opiate withdrawal symptoms. He purchased the supplement through online retailers and reportedly continued using it for over a year. Over the course of a few months, he developed tolerance and thus increased the dose to 1,000-1,500 mg to get relief. A year later, he had unsuccessful attempts to taper off phenibut, with symptoms of continuous extreme agitation, irritability, fidgeting, poor sleep, anxiety, restlessness, pain, and burning under the skin. During this time, he was admitted for 1 month of inpatient detoxification with behavioral management and had only mild relief of symptoms. The patient and his mother agreed to outpatient baclofen taper treatment (as a few case reports<sup>3</sup> have shown success with this treatment). He was then discharged with the following baclofen taper dosing regimen: 5 mg 3 times/ day for 2 days, then 5 mg twice/day for 1 day, then 5 mg in the morning and 2.5 mg in the evening for 1 day, then 2.5 mg twice/day, and, finally, 2.5 mg once/day.

Following discharge, he reported minor relief of his symptoms but continued to have cravings for phenibut. He also had trouble with social and occupational functioning including not being able to attend college. A review of his chart revealed multiple ED visits for unremitting symptoms of severe anxiety, suicidal ideations, and akathisia-like symptoms. He had multiple short periods of remission lasting

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less than a month and subsequent relapse back to phenibut. His last ED visit documented unsuccessful baclofen taper. He was later hospitalized and started on clonazepam 1 mg 3 times/day, which alleviated his symptoms within a week. He is currently prescribed clonazepam 1 mg 3 times/day with significant improvement in phenibut withdrawal symptoms and abstained from phenibut use for at least 5 months of follow-up. The patient was treated for his opioid use disorder with buprenorphine 8 mg twice/day and is in remission from any opiate use as well.

# Discussion

Phenibut (4-amino-3-phenyl-butyric acid) is a neuropsychotropic drug with reported anxiolytic and cognition-enhancing properties.<sup>4</sup> It was originally produced in Russia and is still used there as an antidepressant and anxiolytic and for posttraumatic stress disorder.<sup>4</sup> It is not approved for use in the United States but can be purchased online as a supplement to help with relaxation, cognition, and physical performance.<sup>2,4</sup> The common desired effects are decreased social anxiety and euphoria.<sup>5</sup> Phenibut acts as an agonist primarily on γ-aminobutyric acid (GABA)-B receptors, GABA-A receptors, and dopamine receptors.<sup>2,4,5</sup> This drug's anxiolytic properties may be due to its action on the GABA-A receptor. Phenibut was initially designed to be an analog of GABA that has the potential to cross the blood-brain barrier upon oral ingestion.<sup>6</sup> Significant phenibut effects are most likely due to its action on GABAsignaling pathways either by directly interacting with GABA receptors or by increasing the endogenous GABA release.<sup>7</sup> It has identical structure to baclofen.<sup>4</sup> Baclofen, phenibut, and benzodiazepines produce many similar effects most likely due to their agonist action on the GABA receptor. The action of phenibut typically produces effects of decreased anxiety but can also cause irritability and agitation.<sup>4</sup> Reported symptoms of withdrawal include rebound anxiety, insomnia, and, in rare cases, visual and auditory hallucinations.<sup>5</sup>

A baclofen taper has been used in several case reports<sup>1,3,8</sup> as a method of treating phenibut withdrawal. This case report demonstrates the possibility that phenibut withdrawal can take months if not adequately treated and may not always respond to baclofen taper. This patient continued to have symptoms of anxiety, restlessness, and physical discomfort for several months after stopping phenibut. He did not have remission of his symptoms even after 2 baclofen tapers. It is likely that initiation of a benzodiazepine controlled his anxiety symptoms, which may have been induced by his dependence on phenibut. Therefore, benzodiazepines may be another treatment modality for those in protracted

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### Sethi et al It is illegal to post this copyrighted PDF on any website. withdrawal from phenibut. As a result, clinicians will Ther. 2017;24(5):e639-e640.

have to be careful to prevent the potential development of benzodiazepine use disorder.

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