



## Now Phenibut! What's Next?

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### Abstract

A 30-year-old woman started using Phenibut around 48 months ago to self-medicate for depression and anxiety disorder in the background of emotionally unstable personality disorder. Evidence of treatment around Phenibut is elusive and there is lack of clarity. This case-report summarizes use of Benzodiazepines for inpatient detox treatment of Phenibut and the mechanism behind them.

### Introduction

Phenibut is a central nervous system depressant available in oral and intravenous forms (Figure 1). It is structurally related to the neurotransmitter  $\gamma$ -aminobutyric acid (GABA) and hence is a GABA analogue [1]. It primarily acts on the GABA-A receptors, similar to baclofen and  $\gamma$ -hydroxybutyrate (GHB). However, at low concentrations, phenibut mildly increases the concentration of dopamine in the brain, providing stimulatory effects in addition to the anxiolytic action [2]. Subsequent research has found that it is also a potent blocker of  $\alpha_2\delta$  subunit-containing Voltage-Dependent Calcium Channels (VDCCs), similarly to gabapentinoids like gabapentin and pregabalin [3].

It is marketed for medical use in Russia, Ukraine, Kazakhstan and Latvia, not approved for clinical use in the USA and most of Europe. It is easily sold over the internet and used recreationally producing multitude of effects including and not limited to addiction, dependence and withdrawal [4]. The suggestive treatment for phenibut is based on its structural analogue to the GABA receptors. By writing this case report, is to provide further clinical guidance on treatment [5].

### Case Presentation

A 30 year-old Caucasian female was transferred to the inpatient unit for Phenibut detox along with amphetamines. Client was going through emotional breakdown 48 months ago and described symptoms consistent with emotionally unstable personality disorder mainly feeling of insecurity, abandonment, identity issues and variable mood. Client had difficulties relating with her young child due to her emotional state and started exploring over the internet for medications. Client tried various medications sourced over from the internet, felt well with Phenibut. She started initially with a single tablet and over few months to about 8 tablets a day due to change in tolerance and effectiveness. Client described feeling settle with emotional state, improved motivation, reduction in anxiety and improved relationship with her children. Client decided to reduce her Phenibut over period of few months and then relapsed with similar presentation in relation to her emotional state. She recommenced Phenibut and over 2 months started using 8 tablets daily to the point of admission to the hospital for detox. It is at the same time, client started using Amphetamines to complement effect of Phenibut. Client felt prior to the admission difficulties in coming off the Phenibut and illicit amphetamines and requested for detox.

### Treatment

Diazepam was considered due to structural analogue with to the neurotransmitter  $\gamma$ -aminobutyric acid (GABA). A literature search revealed that, diazepam was used in similar cases before, though the evidence is not satisfactory. Client was commenced on reducing dose of Diazepam, starting at 10 mgs 4 times a day, gradually reduced over period of 5 days. Client was also prescribed PRN Diazepam. This was supplemented with promazine for amphetamine detox. With continuing observation and monitoring on the unit and support of the therapy team, it was observed that the client responded well to the treatment. There was gradual reduction in her anxiety with improved emotional state and future planning. The patient was discharged after a further short uneventful period of monitoring.

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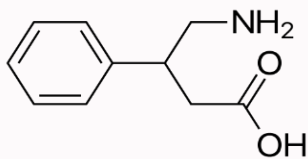
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**Figure 1:** Phenibut, is a central nervous system depressant available in oral and intravenous form.

## Outcome and Follow-up

The client has remained stable at point of discharge from the unit and will continue to receive support from the community drugs and alcohol team along with mental health services.

## Discussion

Phenibut is used to treat anxiety and sleep disturbances in Russia, Ukraine and Latvia [6-8]. It has also other indicators mainly treatment of depression, alcoholism, PTSD, alcohol withdrawal and tics [9]. Though it is generally well-tolerated, it has been associated with significant withdrawal symptoms that included and not just limited to rebound anxiety, severe insomnia, anger, irritability, restlessness, agitation, perceptual disturbances and acute psychosis [10-12].

Due to its structural similarities with GABA, Diazepam was used to treat the withdrawal symptoms. It is imperative that appropriate questions are asked regarding use of any form of illicit substances that are sourced from the internet or the dark web, as they are easy to be missed. This can lead to protracted treatment or failures [13].

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