



Altered Mental Status Takes a New Form

A Unique Case of Phenibut Intoxication

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Case Presentation

HPI: A 29-yo male presented to the emergency room with acute altered mental status. He was undergoing physical therapy at a rehabilitation facility for an injured ankle, and his medications were disbursed under supervision. His stay was unremarkable until the evening prior to his presentation, when he was found to be **agitated, verbally abusive, and displaying odd limb posturing.**

PMHx:

- ADHD
- Anxiety
- Depression
- OCD

Medications:

- Nortriptyline 25mg qhs
- Gabapentin 600mg qid
- Methadone 5mg bid
- Oxycodone 5mg q4hrs prn pain
- Hydroxyzine 100mg q6hrs prn
- Methylphenidate 5mg tid

Social History:

- Lived with father
- Never smoked, no alcohol, no tobacco, no other drug use

Physical Exam:

- *Vital signs:* T 97.5C, BP 139/79 mmHg, P 65 RR 18, SpO2 100% RA
- *General:* diaphoretic, somnolent, then agitated when awake
- *HEENT:* bilateral mydriasis
- *Neurologic:* CN 2-12 intact, reflexes 1/4 in upper and lower extremities, normal sensation, negative babinski sign, no nuchal rigidity.
- *Psychologic:* alert, oriented to self but not place or time, hallucinating “spies” outside of his room

Labs:

- Urine toxicology: + benzo, opiate, oxycodone, methadone
- Negative serum: alcohol, salicylate, acetaminophen
- Renal & liver function normal
- CBC unremarkable

Other tests:

- EKG normal sinus rhythm
- EEG unremarkable
- Non-contrast CT head within normal limits

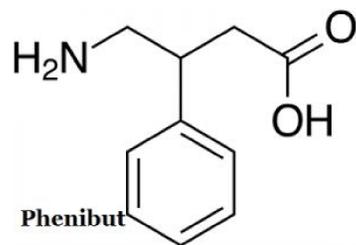


Figure 1. Phenibut molecular structure

Hospital Course

The patient initially presented with **agitation, dystonia, hyperreflexia, mydriasis, and visual hallucinations**; then developed **sedation and catatonia** within a day. **Agitation, insomnia, and psychosis** recurred again, lasting for several days. There was initially concern for anticholinergic toxicity; however, he did not exhibit blurry vision, dry mouth, or urinary retention consistent with the toxidrome. Overdose or withdrawal arising from his prescribed medications was considered unlikely. He ultimately required antipsychotics, benzodiazepines, and supportive care. Severe anxiety and irritability were the dominant symptoms prior to discharge.

A more detailed **OTC and recreational drug history**, specifically focusing on changes in manner of consumption, revealed that he was taking **Phenibut**, an anxiolytic his father **purchased for him online** and brought to the rehabilitation facility. Although he had taken the supplement for several months to treat anxiety, he had **switched from the crystalline to the powder form** just prior the onset of his altered mental status.

Discussion

Phenibut (β -phenyl- γ -aminobutyric acid) is a **GABAergic anxiolytic** and **cognition-enhancing** supplement. It primarily acts at **GABA-B receptors** and to a lesser extent **GABA-A receptors**. The pharmacological activity of Phenibut is similar to baclofen. Although not approved for medicinal use in the United States, Phenibut is a potentially dangerous supplement that is easily available online. **Sedation, dystonia, pupillary dilation, and agitated delirium** were intoxication symptoms noted in our case and have been reported in several other case reports. **Stupor, hypothermia, nausea, and vomiting** have also been documented. Withdrawal symptoms can include tremors, muscle spasms, increased anxiety, and irritability.

The key factor in our patient's unintended intoxication was the **change in supplement modality**. The crystalline form is **83%** of the drug by weight compared to **99.5%** for the powder form, making the **powder form much more potent**.

Unregulated supplements pose a risk to the general public, and there is little information available about the harm associated with taking various forms of supplements. By describing this case, our goal is not only to report another case of Phenibut intoxication, but to highlight the **unexpected consequences** of increasing the dose of a supplement by **changing the form of consumption**.

Teaching Points

- **Switching** between different forms of the same supplement can cause **unintentional intoxication**.
- Phenibut is a potentially dangerous **unregulated anxiolytic gaining popularity**. Intoxication signs and symptoms can include **sedation, somnolence, dystonia, hypothermia, pupillary dilation, and agitated delirium**.
- Asking about recent changes in **manner or form** of supplement consumption may reveal the cause of a new symptom.

References

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A B C



Figure 2.

Forms of 200g Phenibut.

- A) Large crystals
B) Small crystals C) Free Fatty Acid or Powder