High-Dose Intranasal Bupropion Insufflation

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Nasal insufflation of pulverized bupropion hydrochloride (bupropion) tablets has been previously reported as a growing public health problem and can induce effects similar to illicit stimulant drugs.[1] Bupropion is approved by the US Food and Drug Administration for the management of depression and smoking cessation. Bupropion is a cathinone derivative that selectively blocks dopamine and norepinephrine reuptake.[2,3] The current recommended maximum extended-release formulation is 450 mg/d via oral ingestion.[3]

We found 7 case reports[4–10] in the literature that included the terms *insufflation* and *bupropion*. The maximum currently reported dose of insufflated bupropion is 2,100 mg/d.[11] The effects of nasally insufflated bupropion varied among the 7 cases, ranging from a "mild buzz" to paranoia and seizure. Associated hyponatremia or suicidal ideation have not been recorded for this method of bupropion use. In this report, we present the case of a patient who reported intranasal insufflation of bupropion, up to 2,700 mg, every other day. The patient presented with hyponatremia and suicidal ideation secondary to bupropion-induced psychosis.

Case Report

A middle-aged man with a history of schizoaffective disorder and bipolar disorder was brought to the emergency department (ED) by the police after threatening to kill himself with a knife. The patient reported visual hallucinations, such as "seeing devils." Both the suicidal ideation and hallucinations resolved by the time the addiction team was consulted. Upon interview, he reported crushing and insufflating 8 to 9 random combinations of 150-mg and 300-mg tablets of bupropion every other day for the past 3 years with a goal of experiencing euphoria. He obtained his bupropion prescription monthly from his psychiatrist (30 150-mg tablets and 30 300-mg tablets). Per his medical record, the bupropion prescription dosage remained the same for the past 6 to 7 years. The patient also has history of multiple suicide attempts, including stabbing himself, attempting to jump off a bridge, and brandishing multiple knives threatening to kill himself, as well as visual and auditory hallucinations, following bupropion insufflation for at least the past 6 years.

During the interview, the patient reported running out of the bupropion prescription within 10 days of filling it. He reported buying additional bupropion off the streets. He also had a history of infrequent methamphetamine and cannabis use, neither of which were his drug of choice, as well as a remote history of alcohol use. His family reported that the patient is quiet and calm with no baseline auditory or visual hallucinations; however, he becomes disruptive with bupropion insufflation. Laboratory results in the ED revealed a negative urine drug screen, except for cannabis, and a serum sodium level of 124 mEq/L. The patient was subsequently admitted to the hospital, and his hyponatremia resolved the next day following treatment with intravenous normal saline.

Discussion

Insufflation or "snorting" bypasses first-pass metabolism, resulting in a more rapid, elevated plasma concentration of the drug. The insufflation of crushed bupropion tablets is a more frequent abuse phenomenon in correctional settings.[3,12] Our patient presented with hyponatremia, presumably from chronic bupropion use. A handful of case reports[13–15] have shown that hyponatremia occurs in the elderly with standard oral bupropion administration. Although our patient did not have a seizure, hyponatremia placed this patient at an even higher risk of seizure, which is a known side effect of bupropion. Bupropion is also known to cause hallucinations, a rare side effect, in those with and without underlying psychosis. In our patient, the psychosis led to suicide attempts on multiple occasions. This case adds to the emerging literature documenting the abuse potential of bupropion, manifesting in hyponatremia and bupropion-induced psychosis leading to suicidal ideation.[4–10]

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Prim Care Companion CNS Disord 2022;24(2):21cr03056

To cite: Termulo K, Kiyokawa M, Busch G. High-dose intranasal bupropion insufflation. *Prim Care Companion CNS Disord.* 2022;24(2):21cr03056.

To share: https://doi.org/10.4088/PCC.21cr03056

Published online: March 29, 2022.
Potential conflicts of interest: None.
Funding/support: None.
Additional information: Information was de-identified to protect patient anonymity.

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