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LETTER TO THE EDITOR

Withdrawal symptoms associated with bupropion

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Dear Editor,

Bupropion is an atypical antidepressant used to treat major depressive disorder and is also approved for managing tobacco use disorder. This non-nicotine medication helps individuals quit tobacco by alleviating withdrawal symptoms and has also been suggested as potentially effective for treating attention deficit hyperactivity disorder (ADHD) (1). Bupropion's therapeutic effects in these disorders stem from its role as a norepinephrine-dopamine reuptake inhibitor and a nicotinic receptor antagonist. Due to its minimal serotonergic activity, withdrawal symptoms from abrupt discontinuation are typically unlikely (2). However, this report describes a case of a patient with both ADHD and tobacco use disorder who experienced withdrawal symptoms after discontinuing bupropion.

The patient, a 36-year-old female, presented with symptoms of distractibility, hypersensitivity to sounds, difficulty maintaining focus, and frequent attention lapses. She also had a longstanding history of smoking.

During psychiatric assessments, it was noted that she was easily distracted, though no other significant findings emerged from psychiatric and physical examinations. Following comprehensive evaluations, including MOXO testing, she was diagnosed with ADHD according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (3). She had previously taken methylphenidate, at a dose of 5–10 mg daily for about one month, 10 years earlier, to treat ADHD. At that time, she experienced intense withdrawal symptoms and had difficulty tolerating the medication. Additionally, she had been smoking one pack of cigarettes per day for 18 years and was diagnosed with nicotine use disorder according to the DSM-5. Treatment was initiated with bupropion XL, starting at 150 mg per day for the first seven days, followed by an increase to 300 mg per day. However, due to gastrointestinal side effects such as reflux, the dosage of bupropion was reduced to 150 mg/day. Her attention symptoms significantly decreased. While she did not quit smoking entirely, her cigarette consumption was reduced to 7–8 cigarettes per day. Owing to her preference to avoid further medication, the treatment continued for four months before the medication was discontinued. Two days after stopping the medication, she experienced body aches, drowsiness, dizziness, anxiety, and agitation. She consulted a healthcare provider, and after undergoing a complete blood count, biochemistry tests, and a viral panel, no disease or infection was found that could explain her symptoms. As no other explanation could account for the findings, bupropion XL 150 mg was initiated, considering the possibility of drug withdrawal. Within two days of starting bupropion XL 150 mg, the patient's symptoms completely ceased. It was planned for the patient to continue the medication for a period and gradually taper off, eventually taking it every other day.

Reports of bupropion withdrawal are rare (4, 5). Thus, as demonstrated in this case, withdrawal symptoms may be mistaken for other conditions. Potential withdrawal symptoms include anxiety, sleep disturbances, irritability, headaches, muscle pain, and fatigue (4). Due to the variable half-life of 12–30 hours,

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withdrawal symptoms may not manifest until several days after bupropion cessation. Although the exact mechanism is unknown, it is hypothesized that the withdrawal phenomenon may result from cholinergic rebound, with dopamine, norepinephrine, and gamma-aminobutyric acid (GABA) possibly playing roles (5, 6). Until discontinuation or withdrawal syndrome is better defined, physicians must remain vigilant for withdrawal symptoms and educate patients about possible drug withdrawal symptoms. This form of psychoeducation can enhance compliance and prevent patients from abruptly discontinuing antidepressants.

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