

Bupropion-induced acute dystonia in a patient with bulimia nervosa: A case report

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ABSTRACT

Bupropion is taken as an antidepressant for treatment of major depressive disorders, treatment of sexual side effects of selective serotonin reuptake inhibitors, and as a smoking cessation aid, however, it may result in adverse effects such as nausea, dry mouth, headache, insomnia, dizziness, anxiety, tremor, and constipation. We investigate the case of a 34-year-old woman with bulimia nervosa where acute dystonia was induced by bupropion in 8 months. Following this diagnosis and after normal tests and MRI results, the patient was advised to discontinue bupropion intake. In the follow-up done 2 weeks later, 3 months later, and 6 months later, no signs of acute dystonia was observed. A physician who administers dopamine blocking agents must be aware of the prevalence of and the risk factors for acute dystonia and also the way of prevention and treatment.

Keywords: Anxiety. bupropion induced acute dystonia, bulimia nervosa, dizziness, side effects insomnia

Background

Since about 25 years ago, bupropion has been taken as an antidepressant for over 20 years. However, it is typically valid to be used as a 3rd or 4th agent. Due to its unique pharmacology, it leads to inhibit the reuptake of noradrenaline and dopamine and provides potentially a pharmacological augmentation to more conventional antidepressants including selective serotonergic reuptake inhibitors (SSRIs).^[1] It is administered for treatment of major depressive disorders, treatment of sexual side effects of selective serotonin reuptake inhibitors, and also as an aid to smoking cessation.^[2,3] On the other hand, it may result in adverse effects such as nausea, dry mouth, headache, insomnia, dizziness, anxiety, tremor, and constipation.^[3,4] Some case studies have reported that patients are likely to experience

dose-related acute dystonic adverse responses to bupropion in the presence or absence of buspirone augmentation. Dystonia, which typically follows the administration of antipsychotics, has been attributed to acute dopamine depletion and basal ganglion-derived gamma synchronization dysfunction. Acute dystonia symptoms are likely to commence in few hours upon beginning or varying antipsychotic drug dosage; nevertheless, a total rate of 90% of symptoms/signs are seen within the first 3–5 days of beginning or increasing dosage.^[5] Furthermore, bulimia nervosa (BN) is a considerable psychiatric disorder which is usually related to both physical and mental sequelae and often result in serious impairment and distress.^[6] This disease is an intense preoccupation with body weight and shape, with regular episodes of uncontrolled overeating which is relevant to plenty of actions to counteract the feared effects of overeating. If the diagnostic criteria for anorexia nervosa are met for a patient, then its diagnosis takes precedence. Due to extreme secrecy about binge eating and purgative behavior, BN may be identified hardly. In such cases, weight might be normal, but there is often a history of anorexia nervosa or restrictive dieting. Some people have confusion between BN and anorexia nervosa. Almost, all

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BN cases who have been identified in a national community survey presented as an additional psychiatric disorder, and common comorbidities were mood, anxiety, impulse control, and substance misuse disorders.^[7] Due to the non-significant number of studies conducted in this regard, we have investigated a case presentation where bupropion-induced acute dystonia was seen in a patient with BN.

Case Presentation

Upon assurance of patient's consent to participate in the study by signing the written consent form, from 8 months before the investigation, a 34-year-old married female patient (a medical staff) with a history of BN and weight and height of 52 kg and 164 cm, respectively, had been initially treated with slow-release bupropion at an initial dose of 75 mg due to sadness and impatience (mostly in the mornings) as well as hypersomnia and overeating. The mentioned dose reached 300 mg within 2 weeks. The patient was simultaneously taking 300 mg of bupropion with 20 mg of propranolol and 10 mg of chlordiazepoxide 10 at noon. The patient stated that her appetite would be decreased only in case of taking the three pills simultaneously. During the 8 months, the patient lost 6 kg of weight. Accordingly, after a while, she gradually increased the dose of slow-release bupropion to 450 mg/day due to the persistence of weight. Following such an increase in bupropion dose from 300 mg to 450 mg, after 3 days, she was suffering from painful muscular contractions in the legs, thighs, respiration, and swallowing and also abdominal pain, drooling, and suffocation feeling. She then referred the emergency department and received 10 g of diazepam intramuscularly. However, no change in symptoms made her suspected to be with acute dystonia. To this end, she was treated with 2 mg of biperiden intravenously, and then symptoms were resolved shortly. After 3 days, with the beginning use of 450 mg of bupropion again, the symptoms of acute dystonia begin to recur, which is ameliorated by the injection of biperiden. Two days later, the patient took 300 mg of bupropion again, which also led to acute dystonia symptoms.

The patient stated a history of BN disorder since the age of 15, during which she had used different calorie diets, fluoxetine tablets, ritalin tablets, diethylpropion hydrochloride tablets, laxatives, and bisacodyl suppositories as well as the intragastric balloon method. Besides, the patient stated no history of head trauma, convulsions, fever, and drug use. There was also no history of psychiatric disorders and physical diseases in her family.

Normal complete blood cell counts, calcium and magnesium levels, vitamin B12 levels, folic acid levels, and ferritin levels were reported. The patient's brain magnetic resonance imaging (MRI) also reported normal conditions. Accordingly, following diagnosis of bupropion-induced acute dystonia, the patient was advised to discontinue bupropion intake. In the follow-ups done 2 weeks

later, 3 months later, and 6 months later, no signs of acute dystonia was observed.

Discussion

The management of a 34-year-old female with BN becomes more complicated if she is diagnosed with bupropion-induced acute dystonia, as well. She had normal conditions as reported in tests and MRI results.

Interestingly, about 1% of females are likely to have BN which is identified according to an intense preoccupation with body weight, uncontrolled binge-eating episodes, and use of extreme actions to deal with the feared effects of overeating.^[7]

Besides, the complexities get higher when people with BN may be of normal weight, so the diagnosis of BN will be more difficult. Obesity points to both an increased risk of BN and a worse prognosis, as having personality disorders and substance misuse. After 10 years, about half of people with BN will have recovered fully, one-third will have made a partial recovery, and 10% to 20% will still have symptoms.^[7]

In most cases, acute dystonia is seen within 96 h of commencing treatment based on antipsychotic medications or followed by a considerable increase in the dose of such drugs.^[8] Sometimes, acute dystonia is diagnosed during maintenance treatment with a depot antipsychotic within a few days after the depot has been administered.^[9] However, in our case, a female with BN was diagnosed to have acute dystonia which was induced by bupropion. To our knowledge, such a case was not studied formerly but the findings indicated that discontinuation of bupropion is the best solution to stop the recurrence of acute dystonia. Moreover, some case studies have shown that the increased dose of bupropion may also induce acute dystonia.^[10] Taking bupropion along with a serotonin reuptake agent including either buspirone or SSRIs can lead to acute dystonia.^[10]

Regarding the treatment of acute dystonia, the common approaches have typically been oral medications, counseling and education, and botulinum toxin injections as well as plenty of surgical methods.^[11] Besides, those supposed to experience acute dystonia are recommended strongly to be assessed with Wilson's disease, catatonia, tetanus, hypocalcemia, encephalitis as well as conversion and malingering disorders.^[12]

In the case presented by Detweiler and Harpold,^[5] the authors argue that such patients are likely to experience dose-related acute dystonic adverse responses to bupropion in the presence/absence of buspirone. Dystonia cases, which typically follow the prescription of antipsychotics are regularly associated by depletion of acute dopamine as well as basal ganglion-derived γ synchronization dysfunction. Signs and symptoms of acute dystonia are likely to commence in hours of beginning or varying the dosage of an antipsychotic drug; nevertheless, 90% of symptoms are seen within the first 3 to 5 days of dosage increasing/beginning.

Besides, in another similar case,^[10] it was shown that patients suffering from acute dystonia are also likely to experience dose-related acute dystonia as negative responses to bupropion's extent release (ER).

In addition, Elyasi and Mahtiyani^[13] discussed a 34-year-old male patient suffering from a painful neck spasm which was sufficient to wake him up and dystonic distortion followed by using just a single dose of bupropion as much as 75 mg. The patient was diagnosed with obsessive-compulsive disorder (OCD) and treated with 60 mg fluoxetine. For the patient, bupropion was also included in the medications due to the sexual side effects that resulted from the fluoxetine. They concluded that dystonic symptoms must be considered when bupropion is mixed with additional medications that influence the serotonin reuptake.

Similarly, Wang *et al.*^[14] reported a patient suffering from major depression and acute dystonia in two episodes, caused by abrupt discontinuation of bupropion. Episode 1 was seen when medication varied abruptly from bupropion to duloxetine. This patient was asked to do nothing by mouth (i.e., Latin Nil Per Os [NPO]) due to panendoscopic examination. As a result, episode 2 began followed by suspension of the patient from two doses of bupropion. The symptoms including trismus, dysphagia, and torticollis in both episodes were resolved upon the reinstatement of bupropion or injection of biperiden.

Conclusion

Acute dystonia induced by medication like bupropion is likely to be a side effect of treatment with antipsychotic drugs and other drugs, and it may occur at an early phase of treatment. Acute dystonia is often frightening and may seriously disturb the relationship between the doctor and the patient. Therefore, a physician who administers dopamine blocking agents must be aware of the prevalence of and the risk factors for acute dystonia and also the way of prevention and treatment.

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Conflicts of interest

There are no conflicts of interest.

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