CASE REPORT

Venlafaxine Overdose in a Patient with Huntington’s Disease

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Abstract

Huntington’s disease is incurable neurodegenerative disorder associated with high rate of suicide. About 9.3 – 13 % of patients with HD commits suicides, compared to 1 – 1.5 % in the general population. Venlafaxine is a serotonin-norepinephrine reuptake inhibitor used widely for depression and anxiety treatment. Venlafaxine poisoning can lead to adverse cardiovascular effects, including ventricular tachycardia, seizure, serotonin syndrome, and lactic acidosis. Herein, we report a case of a woman with HD who attempted suicide with venlafaxine. This case is exemplary for successful management of venlafaxine overdose management with lorazepam, yielding an excellent treatment outcome. Possible mechanism by which venlafaxine causes adverse effects is also discussed.

Keywords: Venlafaxine, Huntington’s Disease, Overdose, Intoxication, Suicide

Introduction

Huntington’s disease (HD) is incurable and progressive neurodegenerative disorder, characterized by motor abnormality, cognitive decline, and psychiatric disturbance. HD is inherited in an autosomal dominant pattern and occur in about 7 – 10 people per 100,000 individuals [1]. Approximately 9.3 – 13 % of patients with HD commits suicides, compared to 1 – 1.5 % in the general population [2]. Multidisciplinary efforts are needed to proactively prevent suicide attempts in this high risk population. Also, provision of prompt and appropriate treatment in cases of intoxication from suicidal attempts is critical.

Venlafaxine is a serotonin-norepinephrine reuptake inhibitor used mostly for major depression, generalized anxiety, social anxiety, and panic disorder. Venlafaxine poisoning can lead to ventricular tachycardia, seizure, and serotonin toxicity [3]. Central nervous system depression, lactic acidosis, and Tako-Tsubo cardiomyopathy also have been reported in cases of severe intoxication [4, 5]. Herein, we report a case of a woman with HD who attempted suicide with venlafaxine. This case is exemplary for successful management of venlafaxine overdose management with lorazepam, yielding an excellent treatment outcome.
Case Presentation

A middle aged woman with Huntington’s disease complicated with Chorea presented with acute ingestion of 22 pills of 37.5 mg of extended release venlafaxine (total 825 mg) in an attempt of suicide. Reported time of ingestion was about an hour prior to her arrival to the Emergency Department. Her medical history was significant for recurrent major depressive disorder. She appeared very agitated and confused – which were not part of her baseline. Her neurological status was at baseline with slurred speech and mumbling. Her blood pressure, heart rate, respiration rate, temperature, and oxygen saturation at room air were 105/67 mmHg, 120 /min, 31 /min, 98.3 °F, and 97 %, respectively.

The initial electrocardiogram (ECG) revealed sinus tachycardia with normal QTc interval of 476 ms and a normal QRS interval of 78 ms. Other laboratory parameters, including complete blood count, basic metabolic panel, cardiac enzymes, and thyroid hormone panel, were all within normal limit. CT of her brain did not show any abnormality, except atrophy of the caudate nucleus, which was consistent with her history of Huntington’s disease. Patient was immediately given 1mg of intravenous lorazepam three times over the first four hours.

In the following day, she was started on clonazepam 1 mg and thioridazine 100 mg twice daily for agitation and anxiety. The ECG taken on the second day showed sinus rhythm with QTc interval of 412 ms and a normal QRS interval of 78 ms. On third day, she was given intramuscular injection of 1 mg haloperidol due to persistent agitation. Afterward, the acute anxiety and agitation resolved. Subsequently, she was switched over to haloperidol 0.5 mg twice daily. On 5th day of hospitalization, she was discharged on haloperidol 0.5 mg. At the time of discharge, she was stable with blood pressure, heart rate, respiration rate, temperature, and oxygen saturation at room air were 126/88 mmHg, 68 /min, 16 /min, 97.8 °F, and 96 %, respectively. She had resolution of acute anxiety and agitation. Echocardiography done as an outpatient follow-up showed left ventricular ejection fraction of 55 % and did now visualize any abnormality.

Discussion

As venlafaxine overdose is rare, there is no evidence based guideline for treatment. Thus, only symptomatic and supportive treatment is provided for patients presenting with venlafaxine poisoning. Pathophysiology underlying the toxicity of venlafaxine and effective treatment strategy is a future area of research. Although the mechanism by which venlafaxine causes adverse effects remains largely unknown, there are two plausible hypotheses proposed. First hypothesis is that venlafaxine causes increased level of dopamine and norepinephrine, which, in turn, overstimulate beta receptors. In particular, this increased sympathetic outflow can cause tachycardia in heart. Alternative explanation is the blockage of sodium channels by venlafaxine, resulting in ventricular arrhythmia [3, 6].

In the present case, the patient who attempted suicide had HD. Suicide prevention and follow-up care are inherent challenges associated in caring for patients with HD. Thorough and frequent suicidal risk assessment, early diagnosis and intervention of comorbid mental illness, and support group therapy with other individuals with HD might reduce the risk of suicide. Also, use of medications with less adverse
effect profile, when possible, is strongly recommended for this patient population at risk for suicide.

In conclusion, we presented a case of a patient with HD who attempted suicide by ingesting 825 mg of venlafaxine. Patient was tachypneic, tachycardiac, and agitated. This case of venlafaxine poisoning was promptly managed with lorazepam. Symptoms of venlafaxine fully resolved and the patient was discharged in a good condition. This case highlights the danger of venlafaxine poisoning and high risk associated with HD. Clinicians caring for patients with HD should be aware of the risk of drug overdose and choose pharmacotherapy with low adverse profile, when possible.

References


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