Treatment of Depression with Vortioxetine in a Patient with Comorbid Major Depressive Disorder and Restless Legs Syndrome: A Case Report

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ABSTRACT

Many case reports have shown that the use of antidepressants can lead to restless legs syndrome (RLS). Vortioxetine is a new generation antidepressant with a multimodal mechanism of action on serotonin receptors. In this case report, partial improvement in RLS symptoms after treatment with vortioxetine in a patient with a co-diagnosis of major depressive disorder and restless legs syndrome will be discussed. A 59-year-old female patient was admitted to the psychiatry outpatient clinic due to depressive complaints for three months. In the control examination, it was learned that the patient had complaints of RLS that had been going on for about 20 years. RLS symptoms were increased with selective serotonin reuptake inhibitors (SSRIs) used by the patient. In the follow-up examination in the first month after vortioxetine treatment, clinically significant improvement was observed in the patient’s depressive complaints, while a partial reduction in RLS symptoms was observed.

Keywords: Antidepressant, dopamine, restless legs syndrome, vortioxetine

INTRODUCTION

Restless Legs Syndrome (RLS) is a motor-sensory disorder characterized by unpleasant and painful sensations, particularly in the legs, and an irresistible urge to move them, felt during sleeping or at rest. Symptoms typically occur in the evening or at night, are relieved by movement, and often lead to sleep disturbance (1). RLS may develop in the presence of a number of medical conditions, including iron deficiency, end-stage renal disease, diabetes mellitus, rheumatic disorders, and multiple sclerosis (2). In addition, several antidepressants have been implicated in RLS, including mainly selective serotonin reuptake inhibitors (SSRIs) and mirtazapine (3,4). The dopaminergic system is believed to play a key role in the RLS development (5). It has been suggested that SSRIs induce RLS development by decreasing dopamine activity and increasing serotonin levels (6,7).

Vortioxetine is a new generation antidepressant with a multimodal mechanism of action. Vortioxetine is an inhibitor of serotonin (5-HT) transporter, an antagonist of 5-HT3, 5-HT7, and 5 HT1-D receptors, a partial agonist of 5-HT1-B, and a 5-HT1-A agonist (8). Moreover, in animal studies, vortioxetine has been demonstrated to increase serotonin, noradrenaline, dopamine, acetylcholine, and histamine levels in various brain parts (9).

In this case report, a 59-year-old female patient whose symptoms of RLS partially improved after starting treatment with vortioxetine for major depressive disorder will be presented.

CASE

A 59-year-old female patient (married, with two children, high school graduate, housewife) presented to the psychiatry clinic with complaints of low mood, loss of interest, lack of energy, anhedonia, and fatigue. She reported experiencing depression symptoms for three months, and this was the first time she presented to the psychiatric outpatient clinic. She was fully conscious, cooperative, and oriented on mental status examination. Her self-care was good, and her affect and mood were depressive. She had clear, comprehensible speech and harmonious

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Yılıbaş. The Use of Vortioxetine in MDD Accompanying HBS

In our case, family history was positive for RLS, and no laboratory abnormalities which could be associated with RLS were detected at the time of initial presentation. Moreover, the patient did not have any medical condition that could be suggestive of secondary RLS. She has been receiving antihypertensive treatment for two years, but her RLS symptoms persisted at the same severity level for nearly twenty years. She has not been receiving any other medication, and therefore, drug-induced RLS was excluded. Ultimately, she was diagnosed with primary RLS. In our case, there was a significant increase in RLS symptoms with the use of antidepressants, both of which were SSRIs (citalopram and escitalopram).

In the literature, there are many case reports of restless legs syndrome induced by SSRIs (12). However, a recent study did not find a link between antidepressant use and RLS development (13). Decreased dopaminergic activity is believed to play a key role in RLS development. RLS symptoms ameliorate with low-dose dopamine agonists (5). It is considered that SSRIs cause RLS symptoms by inducing an increase in serotonergic activity and a decrease in dopaminergic activity (6,7).

With its multiple pharmacological modes of action, vortioxetine acts as a serotonin (5-HT) transporter inhibitor, a 5-HT3, 5-HT7, and 5HT1-D receptor antagonist, a 5-HT1-B partial agonist, and a 5-HT1-A agonist (8).

Additionally, animal studies have demonstrated that vortioxetine increases serotonin, noradrenaline, dopamine, acetylcholine, and histamine in different parts of the brain (9). Enhanced release of dopamine in the brain by vortioxetine demonstrated in vivo may explain the improvement of RLS symptoms in our patient. On the other hand, mirtazapine, which has been shown to induce RLS in several case reports, has a high affinity for histamine 1 receptor and strongly blocks this type of receptors (3,14). In addition, it is known that antihistamines may also cause RLS (1). For these reasons, the partial improvement of RLS symptoms in our patient may be associated with increased histamine levels in the brain by vortioxetine, as demonstrated by animal studies. At the same time, marked improvement in depression symptoms following vortioxetine treatment as observed in our patient may have led to a reduction in her RLS symptoms. However, when we reviewed her history, she has never sought psychiatric help before, and experienced depression symptoms for the last three months. Additionally, our patient had RLS symptoms for quite a long time and has a family history of RLS. Taking into account all of these considerations, it was concluded that RLS symptoms of our patient were not associated with major depressive disorder.

It is not possible to present definitive evidence that vortioxetine improves RLS symptoms based on our case report. There is no literature data to support such a conclusion. Nevertheless, our case report suggests that vortioxetine can be a safe therapeutic option in the treatment of depression symptoms in patients with major depressive disorder presenting with RLS. Prospective studies examining the possible relationship between antidepressants and RLS are warranted.

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