A Feasibility Study of Patients with Major Depression and Substance Use Disorders: Vortioxetine as Maintenance Treatment

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Background

Limited studies have evaluated the effectiveness of vortioxetine in real-world settings, and none of them has involved patients with dual depression (major depressive disorder [MDD] and substance use disorder [SUD]). The objective of the study was to describe the effectiveness of vortioxetine in clinical practice and determine its effect on affective symptoms, cognitive function, quality of life, and substance use in patients with MDD and SUD.
Therefore, the objective of the present study was to describe the effectiveness of vortioxetine in routine clinical practice and determine its effect on affective symptoms, cognitive function, quality of life, and substance use in patients with MDD and SUDs.

Methods

Post-authorization, retrospective, multicenter, descriptive, and observational study in 80 patients with MDD and SUD receiving a maintenance treatment with vortioxetine for six months between January 2017 and April 2021.

Results

Compared with baseline, scores significantly decreased after 3 and 6 months of treatment in the Montgomery-Åsberg Depression Rating Scale total (from 28.9 to 17.7 and 12.0), and global functional impairment of the Sheehan Disability Inventory (from 26.3 to 19.1 and 16.7). The number of correct answers in the symbol digit modalities test significantly improved during vortioxetine treatment (from 40.4 to 43.8 and 48.4). Regarding the clinical global impression scale, the score for disease severity significantly decreased from 3.8 to 3.0 and 2.4. Compared with baseline, there was a significant reduction in consumption of practically all substances, especially of alcohol, cannabis, and cocaine.

Discussion

We found that vortioxetine is effective in clinical practice for alleviating depressive symptoms and functional impairment, while improving cognitive and executive functions and disease severity for the management of MDD and SUD.
The treatment approach for MDD is changing to cope the heterogeneity of clinical phenotypes and endophenotypes of depression, especially when SUDs is also present. An adequate treatment for patients with both disorders aims at improving the depression-related symptoms (including affective, somatic, and cognitive dimensions), reducing the behaviors associated with seeking behaviors and consumption of substances. Additionally, these therapies are also directed to enhance the quality of life and life-satisfaction of patients and achieve a higher well-being for the family and society. Vortioxetine, a novel antidepressant drug with a multimodal mechanism of action, has demonstrated its efficacy in the treatment of MDD. However, limited number of studies have explored the effectiveness of vortioxetine in real-world settings. The main limitation of the study was its retrospective nature, providing only the available information on medical charts. Additionally, it was a naturalistic study, so no comparisons were made towards a control group. On the other hand, main strengths of the study included that it was performed in real-world settings and evaluated depression and SUD simultaneously. Real-world studies on vortioxetine are limited,18–20 thus the present study provides additional and positive evidence about its use, especially for MDD and SUD.

Table 1
Sociodemographic and Clinical Characteristics of Patients
Abbreviations: SD, standard deviation; BMI, body mass index.

	Patients (N=80)
Gender, n (%)	
Female	29 (36.3)
Male	51 (63.8)
Age, mean years (SD)	45.1 (13.8)
Marital Status, n (%)	
Never been married	29 (36.3)
Educational level, n (%)	
Primary education	32 (40.0)
Employment status, n (%)	
Unemployed (by other reasons)	27 (33.8)
Comorbidities, n (%)	41 (51.3)
Arterial hypertension	13 (16.3)
Obesity (BMI >30 Kg/m^2)	8 (10.0)
Human immunodeficiency virus	7 (8.8)
Diagnosis of major depressive disorder, n (%)	
One episode	15 (18.7)
Mild	2 (13.3)
Moderate	6 (40.0)
Severe	4 (26.7)
With psychotic features	3 (20.0)
Recurrent episodes	65 (81.3)
Mild	10 (15.4)
Moderate	38 (58.5)
Severe	15 (23.1)
With psychotic features	1 (1.5)
Partial remission	1 (1.5)
Substance use history, n (%)	
Tobacco	32 (40.0)
Alcohol	53 (66.3)
Cannabis	21 (26.3)

Table 2
Features of Treatments During Vortioxetine Treatment
Abbreviation: SD, standard deviation.

	Baseline (N=80)	3-Month (N=80)	6-Month (N=80)
Vortioxetine treatment			
Mean dose mg/day (SD)	13.8 (5.5)	14.4 (5.2)	15.1 (5.2)
Doses, n (%)			
5 mg/day	10 (4.2)	6 (2.5)	4 (1.7)
10 mg/día	31 (13.0)	31 (13.0)	29 (12.2)
15 mg/día	7 (2.9)	10 (4.2)	6 (2.5)
20 mg/día	32 (13.5)	33 (13.9)	39 (16.4)
Psychopharmacological-associated treatment, n (%)	73 (91.3)	72 (90.0)	71 (88.8)
Antidepressant drugs	25 (31.3)	24 (30.0)	25 (31.3)
Benzodiazepines	29 (36.3)	28 (35.0)	26 (32.5)
Antipsychotics	30 (37.5)	32 (40.0)	31 (38.8)
Antiepileptics	29 (36.3)	25 (31.3)	24 (30.0)
Alcohol Interdictors	11 (13.8)	14 (17.5)	16 (20.0)
Psychotherapy, n (%)	62 (77.5)	63 (78.8)	63 (78.8)
Individual	36 (58.1)	37 (58.7)	37 (58.7)
Group	4 (6.5)	3 (4.8)	3 (4.8)
Both	22 (35.5)	23 (36.5)	23 (36.5)

Effect of the Vortioxetine Treatment

Compared with baseline, consumption of practically all substances decreased over the 3- and 6-month treatment, especially alcohol (from 35.0 to 23.8% and 17.5%, respectively), cannabis (from 18.8% to 13.8% and 6.3%), and cocaine (from 17.5% to 12.5% and 6.3%; Figure 2). Tobacco use remained stable at baseline and after 3 months (28.8% of patients), while it decreased after 6 months of treatment (25.0%). The severity of the alcohol addiction significantly decreased from baseline (mean: 9.1; 95% CI: 8.0–10.3) to the third month (mean: 6.6; 95% CI: 5.6–7.6; p<0.001), and the sixth month (mean: 4.7; 95% CI: 3.6–5.8; p<0.001; Table 3). Similarly, severity of cannabis addiction reduced significantly from baseline (mean: 9.7; 95% CI: 8.3–11.2) to the 3-month (mean: 7.6; 95% CI: 6.2–8.9; p=0.014), and 6-month treatment (mean: 4.1; 95% CI: 2.6-5.6; p<0.001). Decreases in severity were also significant for cocaine (mean: 5.3; 95% CI: 3.7–6.8, versus baseline, mean: 7.4; 95% CI: 5.4–9.3; p=0.022) and sedative-hypnotics (mean: 4.8; 95% CI: 1.4-8.3, versus baseline, mean: 9.2; 95% CI: 4.4-13.9; p=0.080) after 6 months, while a reduction of heroin was observed after 3 months (mean: 6.3; 95% CI: 0.1–12.6, versus baseline, mean: 12.4; 95% CI: 9.7–15.1; p=0.019).

Table 3
Severity of the Addiction to Substances During Vortioxetine Treatment
Note: *Difference with baseline. *Abbreviation:* 95% CI, 95% confidence interval

Severity of Addiction, Mean (95% CI)	Baseline	3-Month	p *	6-Month	p *
Tobacco	8.4 (7.1–9.8)	8.4 (7.6–9.3)	0.920	7.2 (6.2–8.2)	0.157
Alcohol	9.1 (8.0–10.3)	6.6 (5.6–7.6)	<0.001	4.7 (3.6–5.8)	<0.001
Cannabis	9.7 (8.3–11.2)	7.6 (6.2–8.9)	0.014	4.1 (2.6–5.6)	<0.001
Cocaine	7.4 (5.4–9.3)	6.3 (4.9–7.7)	0.262	5.3 (3.7–6.8)	0.022
Sedative-hypnotics	9.2 (4.4–13.9)	7.3 (3.7–11.0)	0.436	4.8 (1.4–8.3)	0.080
Gambling disorder	8.1 (3.8–12.5)	6.1 (3.9–8.4)	0.345	5.3 (2.6–8.0)	0.283
Heroin	12.4 (9.7–15.1)	6.3 (0.1–12.6)	0.019	4.3 (−1.0–9.5)	0.250
Other opioids	8.0 (0.8–15.2)	5.7 (1.9–9.5)	0.346	5.3 (0.2–10.5)	0.392

Changes in SUDs During Vortioxetine Treatmen

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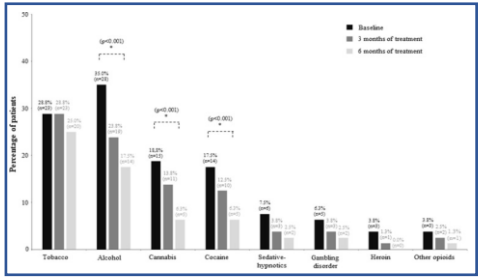
Figure 2
Substance uses during vortioxetine treatment. Asterisks (*) represent statistical significance between baseline and six months of treatment (p<0.001).



Conclusions

Vortioxetine was effective in clinical practice for reducing depression symptoms and functional impairment and improving cognitive and executive functions and disease severity in patients with MDD and SUD. Moreover, the treatment with vortioxetine favored a reduction in substance use and the severity of the SUDs. Further prospective, long-term studies, including larger cohort of patients, are required to corroborate these results.

Keywords: vortioxetine, major depressive disorder, substance use disorder, dual disorder, major dual depressive disorder, real-world evidence