Naturalistic and Uncontrolled Pilot Study on the Efficacy of Vortioxetine in Binge Eating Disorder With Comorbid Depression

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BACKGROUND

Binge eating disorder (BED) is clinically relevant by virtue of the global impairment, poor quality of life, and increased overall medical morbidity. The high comorbidity with psychiatric disorders, particularly depression, has received attention as a possible mediator of the poor outcome. Further, BED and depression share cognitive dysfunctions. This naturalistic and uncontrolled pilot study aimed at evaluating the efficacy of vortioxetine (VTX) on depressive symptoms in patients with BED, secondly the efficacy in improving a broad array of executive functions, and third to explore the effect on eating behavior and body weight.

METHODS

This pilot study involved 30 patients with BED and comorbid MDD, treated with VTX for 24 weeks.

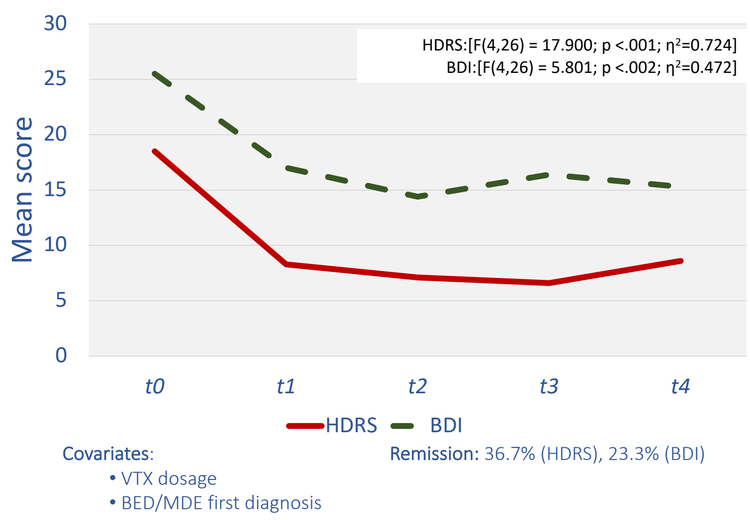
Assessments were run at baseline (t0), 4 (t1), 8 (t2), 12 (t3), and 24 (t4) weeks (Tab.1).

Changes in depressive symptoms (HDRS and BDI), executive functions, eating behaviors (binge frequency and severity, night eating, food addiction), and body weight were estimated after treatment with VTX through GLM.

TAB.1. Study design

Assessment	t_0 baseline	t_1 4 weeks	t_2 8 weeks	t_3 12 weeks	t_4 24 weeks
Structured Clinical Interview DSM-5 (SCID-5-CV)	x				
Binge Eating Disorder-Clinical Interview (BED-CI)	x				
Hamilton Depression Rating Scale (HDRS)	x	x	x	x	x
Beck Depression Inventory (BDI)	x	x	x	x	x
Antidepressant Side-Effects Checklist (ASEC)	x	x	x	x	x
Binge Eating Scale (BES)	x	x	x	x	x
Disorder Eating Examination Questionnaire (EDE-Q)	x				x
Food Addiction Scale 2.0 (Y-FAS 2.0)	x				x
Night Eating Questionnaire (I-NEQ)	x				x
Stroop Color and Word Test (SCWT)	x				x
Rey Auditory Verbal Learning Test (RAVLT)	x				x
Rey–Osterrieth Complex Figure	x				x
Attentional Matrices	x				x
Iowa Gambling Task (IGT)	x				x
Digit Symbol Substitution Test (DSST)	x				x

FIG.1. Changes in depression



Covariates:
- VTX dosage
- BED/MDE first diagnosis

Remission: 36.7% (HDRS), 23.3% (BDI)

TAB.2. Changes in executive functions

		t_0	t_4	Wilcoxon (Z value)	p	r
RAVLT*	Acquisition	47.4	53.6	-2.757	**0.006**	0.348
	Delay Recall	11.3	12.8	-2.588	**0.010**	0.270
Attentional Matrices*		53.2	57.0	2.236	**0.025**	0.130
IGT net score		-10.2	-1.7	1.473	0.141	
SCWT		1.0	2.8	1.594	0.111	
DSST		26.8	27.2	0.547	0.584	
RCFT*	Accuracy	34.7	35.1	1.138	0.255	
	Order	1.6	2.0	1.882	0.069	
	Style	1.2	1.3	0.797	0.425	
	Central Coherence Index	1.1	1.3	1.183	0.287	
	Organizational strategies	4.2	4.5	0.654	0.513	
	Recall percentage*	63.4	72.1	2.509	**0.012**	0.327

RAVLT: Rey Auditory Verbal Learning Test; IGT: Iowa Gambling Task; SCWT: Stroop Color and Word Test; DSST: Digit Symbol Substitution Test; RCFT:Rey-Osterreith Complex Figure.

*In red significant results after using the Benjiamini-Hochberg procedure to correct for multiple comparison. Effect size (r) only for significant results.

TAB.3. Changes in eating behaviors

	t_0	t_1	t_2	t_3	t_4	F	p	η^2
BMI	38.8	38.4	35.9	34.8	33.6	time: F(4,25) = 2.954	0.039	0.312
Weekly binge days*	4.9				2.7	time: F(1,29) = 45.673	**<0.001**	0.612
BES*	22.1	17.0	15.6	14.2	13.3	time: F(4,26) = 7.771	**<0.001**	0.543
EDE-Q	3.4				3.2	time: F(1,29) = 0.392	0.536	
NEQ*	19.1				15.5	time: F(1,29) = 12.312	**0.001**	0.298

BMI: body mass index; BES: Binge Eating Scale; EDE-Q: Eating Disorder Examination Questionnaire; NEQ: Night Eating Questionnaire.

*In bold significant results after using the Benjiamini-Hochberg procedure to correct for multiple comparison. Effect size (η^2) only for significant results.

FIG.2. Changes in binge eating severity

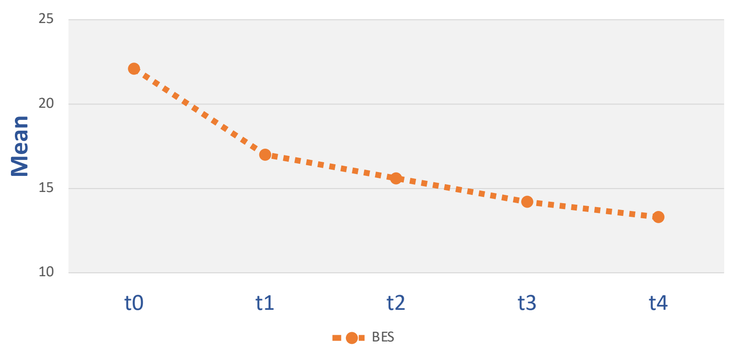
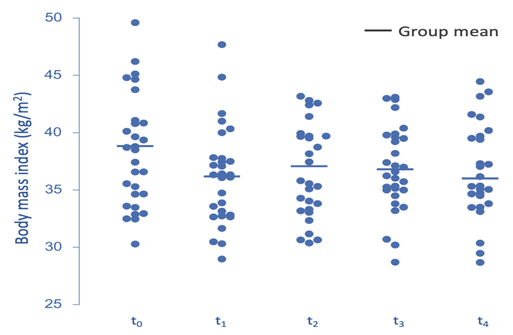


FIG.3. Weight change



RESULTS

Significant improvements emerged after treatment with VTX in:

- depression (HDRS $p < 0.001$; BDI $p = 0.002$) regardless the dose of VTX and first diagnosis (BED/MDD) (Fig.1),
- working memory (RAVLT acquisition $p = 0.01$, delay recall $p < 0.001$, RCFT percentage of recall $p = 0.01$, and Attentional Matrices $p = 0.05$) (Tab.2), binge days frequency ($p < 0.001$),
- binge eating severity (BES $p < 0.001$), night eating ($p = 0.001$), food addiction (YFAS 2.0 $p = 0.039$), and body weight ($p = 0.039$).
- The improvement in depressive symptoms was associated with the concurrent improvement in night eating as assessed by the I-NEQ.

CONCLUSIONS

VTX can be a valid therapeutic choice for patients with BED with comorbid depression in controlling the depressive symptoms, working memory, and eating behavior.

Indeed, by acting on affective symptoms, neurocognitive functioning, and eating behaviors, it confirms the results already obtained with VTX in other disorders, expanding them to BED.

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