Observational Study

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Efficacy of escitalopram oxalate for patients with post-stroke depression

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Abstract

This retrospective study investigated the efficacy and safety of escitalopram oxalate (ESO) for the treatment of post-stroke depression (PSD).

A total of 115 patients with PSD were included in this study. A total of 65 patients underwent ESO (Intervention group). A total of 50 patients received acupressure (Control group). The outcome measurements included Montgomery-Åsberg Depression Rating Scale (MADRS), Hamilton Anxiety Rating Scale (HAM-A), and Sheehan Disability Scale (SDS). In addition, we also recorded the adverse events in this study.

At the end of 8-week treatment, ESO showed greater efficacy in depression, measured by MADRS ($P < .01$); anxiety, measured by HAM-A scale ($P < .01$); and disability, measured by SDS ($P < .01$), compared to acupressure. Additionally, there were not significant differences regarding adverse events between two groups ($P > .05$).

The present results indicate that ESO can decrease symptoms of patients with PSD.

Abbreviations: DU20 = Baihui, ESO = escitalopram oxalate, GB20 = Fengchi, HAM = A-Hamilton Anxiety Rating Scale, MADRS = Montgomery-Åsberg Depression Rating Scale, MDD = major depressive disorder, PSD = post-stroke depression, SDS = Sheehan Disability Scale, SSRI = serotonin selective reuptake inhibitors, ST36 = Zusanli, TDCS = transcranial direct current stimulation.

Keywords: depression, efficacy, escitalopram oxalate, safety, stroke

1. Introduction

Post-stroke depression (PSD) is one of the most frequent neuropsychiatric symptoms in patients with stroke.[1–3] It usually manifests with a wide range of symptoms, such as feeling of low mood and fatigue, loss of interest, sleep disturbances, and lack of pleasure.[4–6] It has been estimated that its prevalence rate is about one-third of all stroke survivors.[6] Many factors may result in PSD, including biological, behavior, and social factors.[7–9] Of those, the most risk factors may be the disability and poor socialization activity for the patients with PSD.[9] Additionally, it is also associated with the poor quality of life and cognitive activity,[10–12] poor functional rehabilitation, and even higher mortality.[13–15]

Previous studies have reported that antidepressants can alleviate and enhance several domains of depressive symptoms in patients with PSD, such as serotonin selective reuptake inhibitors (SSRI).[16–19] However, no convincing evidence for the efficacy of escitalopram oxalate (ESO) in improving mood and enhancing recovery of neurological functions is available in Chinese patients with PSD,[16–18] although it has been reported to treat severe depression and anxiety in Czech Republic, France, USA, and India.[20–26] Thus, this retrospective study investigated the effects of ESO on the symptoms relief associated with PSD.

2. Methods and materials

This retrospective study was approved by the Ethics Committee of Beijing ChaoYang Hospital. All patients provided the informed consent. It was conducted at Beijing ChaoYang Hospital between January 2013 and December 2015.

Initially, 153 patients with PSD were physically examined. After ruling out the pathological factors, including fracture, psychiatric issues, and insufficient information of patients, 115 patients with diagnosis confirmed of PSD were included in this retrospective study.

All patients were divided into an Intervention group and a Control group according to the intervention they received. Patients in the Intervention group underwent ESO (10 mg daily/first week, 20 mg daily/remaining 7 weeks) for 8 weeks. Patients in the control group received acupressure at acupoints Baihui (DU20), Fengchi (GB 20), and Zusanli (ST36) for 30 minutes daily, each point 10 minutes, 3 times weekly for a total of 8 weeks.

The Montgomery-Åsberg Depression Rating Scale (MADRS), Hamilton Anxiety Rating Scale (HAM-A), and Sheehan Disability Scale (SDS) were used to evaluate the effect of NMES for the treatment of PSD. Additionally, adverse events were also evaluated according to the Medical Dictionary for Regulatory Activities (version 11.1).

All data in this retrospective study were measured and evaluated by the difference changes from baseline (with a 95%

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The authors have no conflicts of interest to disclose.

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Table 1

Characteristics of included patients.

Characteristics	Intervention group (n = 65)	Control group (n = 50)	*P* value
Age (years)	61.3 (12.4)	60.9 (12.7)	.87
Sex			
Male	30 (46.2%)	23 (46.0%)	.99
Female	35 (53.8%)	27 (54.0%)	.99
Race			
Chinese Han	65 (100.0%)	50 (100.0%)	1.00
BMI (kg/m^2)	27.4 (3.1)	26.8 (2.9)	.29
Previous stroke	2.5 (0.7)	2.3 (0.7)	.13
Post-stroke duration (months)	11.3 (5.5)	10.9 (5.3)	.69
PSD onset duration	5.2 (2.5)	5.1 (2.5)	.83
MADRS score	32.3 (4.4)	31.9 (4.6)	.64
HAM-A score	20.4 (5.5)	20.0 (5.4)	.70
SDS score	21.2 (1.3)	20.8 (1.5)	.13

Data are present as mean ± standard deviation or number (%); BMI = body mass index, HAM-A = Hamilton Anxiety Rating Scale, MADRS = Montgomery–Åsberg Depression Rating Scale, SDS = Sheehan Disability Scale.

confidence interval), and were analyzed by the SAS package (Version 9.1; SAS Institute Inc., Cary, North Carolina, USA). The categorical data were analyzed by the Chi-square tests, and continuous data were analyzed by *t*-test. The statistical significance level was set at $P < .05$.

3. Results

The demographic characteristics are shown in Table 1. No significant differences of age, sex, race, BMI, MADRS, HAM-A, and SDS scores were found between two groups at baseline.

The results of all outcome measurements at the end of week 8 are shown in Table 2.

ESO enhanced all outcomes, measured by MADRS ($P < .01$), HAM-A ($P < .01$), and SDS ($P < .01$), compared to acupressure at the end of week 8 (Table 2).

The adverse events ≥1% of patients in this retrospective study included headache, nausea, vomiting, nasopharyngitis, diarrhea, dizziness, abdominal discomfort, and insomnia (Table 3). The most frequent adverse events in the intervention group were headache, nausea, and nasopharyngitis (intervention group, 3.1% [2/65] vs control group, 0% [0/50]). However, there were not significant differences in adverse events between two groups (Table 3). No death related to ESO treatment was found in this study.

4. Discussion

This retrospective study demonstrated promising outcomes after 8-week NMES treatment in patients with PSD. To our knowledge, this is the first study using ESO for treating PSD in individuals specifically in China. The findings indicated the positive effects of ESO in treating PSD in individuals.

Previous related studies have also reported favorable effects of ESO for treating patients with depression.[27–28] One study evaluated the efficacy and safety of ESO for elderly patients with moderate to marked comorbid depression and anxiety.[27] Its results found that ESO treatment can significantly improve symptoms of depression and anxiety.[27] The other study also assessed the efficacy and tolerability of ESO treatment in patients with major depressive disorder (MDD), and anxiety.[28] The results of this study found that ESO was effective and well-tolerated in the long-term therapy in patients with MDD, and anxiety.[28] However, no studies specifically focused to explore the efficacy and safety of ESO treatment in Chinese patients with PSD.

In this retrospective study, our results demonstrated that ESO is safe and effective for symptom reduction in Chinese patients with PSD. It showed greater efficacy than acupressure, as measured by MADRS, CGI-S, HAM-A, CGI-I, and SDS scores at the end of treatment. Additionally, no death-related ESO was recorded in this study.

This study has several limitations. First, this study did not assess the quality of life in patients with PSD. Thus, further studies should include more comprehensive outcome measurements. Second, this study did not consisted of the follow-up visits. Therefore, future studies should include patients with follow-up visits after the treatments.

Table 2

Outcome measurements at the end of the 8-week treatment.

Outcome measurements	Intervention group (n = 65)	Control group (n = 50)	Difference	*P* value
MADRS	−8.7 (−13.9, −4.3)	−1.1 (−1.5, −0.6)	−7.6 (−9.1 −6.2)	<.01
HAM-A≥20	−8.4 (−12.6, −4.3)	−1.3 (−1.8,−0.7)	−7.2 (−8.8, 6.0)	<.01
SDS	−6.0 (−8.9, −3.8)	−0.7 (−1.1, −0.2)	−5.2 (−6.5, −4.3)	<.01

Data are present as mean ± standard error; BMI, HAM-A = Hamilton Anxiety Rating Scale, MADRS = Montgomery–Åsberg Depression Rating Scale, SDS = Sheehan Disability Scale.

Table 3

Adverse events ≥1% of patients in both groups, n (%).

Adverse events	Intervention group (n = 65)	Control group (n = 50)	*P* value
Headache	2 (3.1)	0 (0)	.38
Nausea	2 (3.1)	0 (0)	.38
Vomiting	1 (1.5)	0 (0)	.60
Nasopharyngitis	2 (3.1)	0 (0)	.38
Diarrhea	1 (1.5)	0 (0)	.60
Dizziness	1 (1.5)	0 (0)	.60
Abdominal discomfort	1 (1.5)	0 (0)	.60
Insomnia	1 (1.5)	0 (0)	.60

Data are present as number (%).

5. Conclusion

Our results indicate that ESO can reduce the symptoms of the depression in patients with PSD in Chinese population.

Author contributions

Conceptualization: J-h. Xu, P. Jiang.
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