Scalp Acupuncture Combined with Cognitive Training in the Treatment of Mild Cognitive Impairment after Stroke

Li Mengying[1,2]

[1]*Department of Occupational Therapy and Psychological Speech Therapy, Taihe Hospital, Shiyan, China*

[2]*Department of Applied Psychology, Hubei University of Medicine, Shiyan, Hubei, China*

Abstract: Objective: To observe the effect of scalp acupuncture combined with cognitive training in the treatment of patients with mild cognitive impairment after stroke. Methods: A total of 64 patients with mild cognitive impairment after stroke admitted to our hospital from January to December 2024 were selected as the research subjects and randomly divided into two groups. One group (control group, 32 cases) received cognitive training, and the other group (observation group, 32 cases) received scalp acupuncture combined with cognitive training. The cognitive function level and activities of daily living (ADL) ability of the two groups were compared. Results: The cognitive function score of the observation group after treatment was higher than that of the control group (P<0.05). The ADL score of the observation group after treatment was higher than that of the control group (P<0.05). Conclusion: Scalp acupuncture combined with cognitive training for patients with mild cognitive impairment after stroke can improve patients' cognitive function and ADL ability, contributing to their recovery.

Keywords: Scalp Acupuncture; Cognitive Training; Stroke; Cognitive Impairment

1. Introduction

Stroke is the most common and high-risk type of cerebrovascular disease, characterized by sudden onset and rapid progression. If patients do not receive effective treatment in time, it may even endanger their lives. The nervous system function of these patients is prone to varying degrees of damage, among which cognitive impairment is the most common, directly affecting the patients' prognostic life[1]. Cognitive training is currently the main treatment for cognitive impairment after stroke in clinical practice. Persistent cognitive training in various aspects can help patients recover[2]. Scalp acupuncture treatment also has a certain application rate in the treatment of cognitive impairment patients. This study mainly observed the effect of scalp acupuncture combined with cognitive training in the treatment of patients with mild cognitive impairment after stroke.

2. Materials and Methods

2.1 General Data

A total of 64 patients with mild cognitive impairment after stroke admitted to our hospital from January to December 2024 were selected as the research subjects and randomly divided into two groups. One group (control group, 32 cases) received cognitive training, and the other group (observation group, 32 cases) received scalp acupuncture combined with cognitive training. In the control group, there were 17 males and 15 females, aged 57-79 years, with an average age of (63.34±1.02) years. The body mass index (BMI) was 21-25 kg/m², with an average of (22.34±1.02) kg/m². In the observation group, there were 16 males and 16 females, aged 58-77 years, with an average age of (63.15±1.35) years. The BMI was 21-25 kg/m², with an average of (22.15±1.23) kg/m². There was no significant difference in baseline data between the two groups (P>0.05).

2.2 Methods

The control group received cognitive training, specifically including:

(1) Memory training: During the recovery process, patients were guided to train their memory by reciting words, verses, or simple number sequences. Training was carried out from simple to complex, 20 minutes each time, twice a day.

(2) Attention training: Visual tracking was

conducted using cards, instructing patients to focus their attention on the cards to train their attention. 15 minutes each time, three times a day.

(3) Calculation ability training: After the patient's condition stabilized, calculation ability training was carried out. Before the training, the patient's calculation ability level during the recovery stage was evaluated, and questions were designed from simple to complex to train the patient's calculation and cognitive abilities. 20 minutes each time, once a day.

(4) ADL training: Patients were gradually guided to perform ADL training, actively engaging in common daily activities such as dressing, eating, and washing, to help them gradually return to normal life. Patients needed to be encouraged and supported during training.

The observation group received scalp acupuncture combined with cognitive training, where the cognitive training method was the same as that of the control group. During scalp acupuncture treatment, the selected acupoints included Baihui (GV20) to Taiyang (EX-HN5), Ganshu (BL18), Mingmen (GV4), Neiguan (PC6), Shenmen (HT7), Hegu (LI4), etc. Needling was performed using conventional techniques, with the needle retained for 30 minutes each time, once a day.

2.3 Observation Indicators

(1) Cognitive function assessment: The Mini-Mental State Examination (MMSE) was used to assess the cognitive function of patients during recovery. The scale evaluates multiple dimensions such as attention, memory, time, and place orientation, with a scoring range of 0-30 points (higher scores indicating better cognitive ability). Assessments were conducted before treatment, 2 weeks, and 4 weeks after treatment.

(2) Comparison of ADL ability: The ADL scale was used to assess the patients' daily living ability during recovery, with a score range of 0-100 points (higher scores indicating better activity ability).

2.4 Statistical Methods

Relevant data in the study were analyzed using SPSS 25.0. Measurement data were expressed as mean ± standard deviation and tested by t-test. $P<0.05$ was considered statistically significant.

3. Results

3.1 Cognitive Function Assessment

The cognitive function score of the observation group after treatment was higher than that of the control group ($P<0.05$), as shown in Table 1.

Table 1. Comparison of Cognitive Function Assessment between the Two Groups ($\bar{x}\pm s$)

Group	Number of Cases	Before Treatment	2 Weeks after Treatment	4 Weeks after Treatment
Observation	32	10.45±2.35	18.63±1.36	22.36±1.64
Control	32	10.66±2.45	14.67±1.75	17.68±1.92
t	-	1.587	20.425	21.758
P	-	0.715	0.001	0.001

3.2 Comparison of ADL Ability

The ADL score of the observation group after treatment was higher than that of the control group ($P<0.05$), as shown in Table 2.

Table 2. Comparison of ADL Ability between the Two Groups ($\bar{x}\pm s$)

Group	Number of Cases	Before Treatment	2 Weeks after Treatment	4 Weeks after Treatment
Observation	32	68.45±3.45	75.36±2.63	82.36±1.88
Control	32	68.99±3.11	70.45±1.85	75.63±1.45
t	-	1.252	15.452	28.425
P	-	0.345	0.001	0.001

4. Discussion

Mild cognitive impairment after stroke is common in clinical practice and directly affects the patient's normal life. During conventional cognitive training, guiding patients to carry out various cognitive function trainings can help improve their cognitive function. However, observations have found that the effect of conventional cognitive training is relatively slow, which is not conducive to the rapid improvement of patients' cognitive function in a short period[3-4].

Traditional Chinese medicine classifies mild cognitive impairment after stroke as "dementia disease," mainly characterized by deficiency of

the root and excess of the branch. Scalp acupuncture treatment has a high application rate in clinical practice. Stimulating acupoints such as Baihui (GV20) to Taiyang (EX-HN5), Ganshu (BL18), Mingmen (GV4), Neiguan (PC6), Shenmen (HT7), and Hegu (LI4) can regulate qi and blood, relax tendons and activate collaterals, promote the repair of damaged nerve cells, help restore patients' cognitive function, facilitate their rapid return to normal life, and improve their ADL ability[5-6]. In this study, the observation group received scalp acupuncture combined with cognitive training during recovery, and their cognitive function and activity ability were higher than those of the control group receiving conventional cognitive training, indicating that scalp acupuncture can promote the recovery of patients' cognitive function and accelerate the recovery speed.

In conclusion, scalp acupuncture combined with cognitive training can be used in the treatment of patients with mild cognitive impairment after stroke to promote the recovery of patients' cognitive function and improve their ADL ability.

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