

Observation on the Effect of Eye Acupuncture on Hemiplegia after Ischemic Stroke

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Abstract: Purpose: To observe the therapeutic effect of eye acupuncture on hemiplegia patients after ischemic stroke. Methods: 60 patients were randomly divided into observation group and control group, 30 cases in each group. Both groups were hemiplegia of one limb after ischemic stroke and had passed the acute stage. During the treatment, they were given corresponding rehabilitation training and conventional drugs. Symptomatic treatment. The patients in the control group were treated with ordinary acupuncture on this basis, while the observation group was treated with ordinary acupuncture and acupuncture near the eye. The scores of Lovett muscle strength rating scale, Fugl-Meyer motor function assessment scale (FMA) and modified Barther living index scale (MBI) were compared before and after treatment. Result :After treatment, the scores of each scale in the two groups were improved, and the scores of the observation group were significantly higher than those of the control group, that is, the treatment effect of the observation group was better than that of the control group ($p < 0.05$). $p < 0.05$, comparable. Comparison between groups after treatment, $p < 0.05$, the difference was statistically significant. Conclusion: Eye acupuncture has a good clinical effect on hemiplegia patients with ischemic stroke, can enhance the self-recognition of patients, improve the degree of cooperation, and is conducive to the development of later rehabilitation treatment.

1. Introduction

Ischemic stroke refers to the poor blood supply to the brain, which leads to ischemia and hypoxia in the corresponding tissues, and eventually the part is damaged, and some corresponding clinical manifestations appear, such as hemiplegia and aphasia [1]. Ischemic stroke is more common in the elderly because of its relatively high disability rate. How to prevent and reduce the occurrence of the disease and improve the prognosis is a problem that our doctors always pay attention to. However, the pathogenesis of the disease is complex and the clinical manifestations are diverse, and the use of drugs alone has limited effect on improving clinical symptoms. Acupuncture and

moxibustion has a definite curative effect on the unfavorable limb movements of hemiplegic patients, and can promote self-repair and recovery [2]. Eye acupuncture is only used for local acupuncture of the eyes, the acupuncture is shallow, and the selected acupoints are few and precise. This study intends to observe the clinical efficacy of eye acupuncture beside acupuncture in the treatment of post-stroke hemiplegia.

2. General Patient Data and Experimental Methods

2.1 General Information

A total of 60 inpatients with hemiplegia after non-acute ischemic stroke from the Department of Encephalopathy, Affiliated Hospital of Shaanxi University of Traditional Chinese Medicine from June 2020 to December 2020 were selected, and the patients were divided into an observation group and a control group by random number table method. There were 30 patients in the group, and the general data of the two groups were compared, and there was no significant difference ($p>0.05$), which was comparable. See Table 1 and Table 2 for details.

Table 1 General Information ($\bar{X} \pm s$)

group	Num-ber of cases (n)	gender (n)		age			Disease duration/day			hemiplegic side	
		male	Female	max	min	average	shortest	longest	ave -rage	Left	right
Observation group	30	twenty three	7	88	45	65.47 ±4.31	28	107	49.10 ±6.25	19	11
control group	30	20	10	83	36	67.24 ±5.29	30	111	51.86 ±5.28	17	13

Table 2 Lovett Muscle Strength Grading Score Before Treatment in the Two Groups

group		Lovett muscle strength classification					
		Level 0	Level 1	level 2	Level 3	level 4	Level 5
30 cases in observation group	upper extremity	12	7	5	3	3	0
	lower limbs	6	12	6	2	4	0
30 cases in the control group	upper extremity	10	8	7	3	2	0
	lower limbs	7	9	7	4	3	0

2.2 Case Selection Criteria

The diagnostic criteria for cerebral infarction refer to the diagnostic criteria formulated in the “Chinese Guidelines for Diagnosis and Treatment of Cerebral Infarction with Integrated Traditional Chinese and Western Medicine (2017)[4]. “and are supported by imaging materials.

2.3 Inclusion Criteria

①Meet the diagnostic criteria for ischemic stroke, supported by imaging materials (diagnosed by head CT or MRI), and have weakness or paralysis of one limb after the stroke; ②The age range is 30-88 years old; ③The course of the disease is 4 weeks The above; ④ the condition is basically

stable; ⑤ voluntarily join the experiment, willing to cooperate with the treatment of this research, and sign the informed consent.

2.4 Exclusion Criteria

① Patients with spastic hemiplegia; ② Severe heart, liver, kidney and other systemic complications; ③ Those with poor dependence and unable to complete the treatment; ④ Patients complicated with organ dysfunction or unstable vital signs (including acute heart failure, Myocardial infarction, severe infection, mental instability, etc.); ⑥ Those who have bleeding tendency or suffer from immune system diseases and have difficulty in coagulation.

2.5 Rejection and Dropout Criteria

① Those who fail to strictly follow the experimental protocol, take other therapeutic drugs or accept other treatments by themselves, which may interfere with the results of this research and cannot evaluate the efficacy; ② Those who have serious complications or changes in the condition during the clinical research cannot continue to receive treatment ③ Those who were lost to the follow-up or those who asked to withdraw.

3. Treatment Options for the Two Groups

3.1 Basic Treatment

All subjects developed individualized treatments based on the treatment principles stipulated in the “Chinese Guidelines for the Prevention and Treatment of Cerebrovascular Diseases” [5], including treatment for primary diseases such as improving blood supply to the brain, symptomatic and supportive treatment for other risk factors, and Adjusting the diet and changing the routine of daily life and other adjustments.

In terms of rehabilitation, it includes: ① placement of benign postures; ② maintaining normal range of motion of joints to prevent spasm or atrophy; ③ reducing the appearance or aggravation of abnormal movement patterns; ④ making active limbs as much as possible; ⑤ strengthening the healthy side muscle strength. Rehabilitation training was done every day during the week, and rested on Sunday, about 30 minutes each time. Before the treatment, the patients were evaluated first, and then the corresponding training was taken, and the curative effect was evaluated after 4 weeks.

3.2 Control Group

Acupoints: Baihui, Shenting, Shangxing, Yintang, Quchi, Baxie, Waiguan, Hegu, Fengshi, Dubi, Yanglingquan, Zusanli, Sanyinjiao, Kunlun point, Taichong point.

Operation: The patient is placed in the supine position, the local skin is routinely disinfected, 0.30 * 40mm disposable acupuncture needles are used, and the head acupoints (Shenting, Baihui, Shangxing) are punctured flat or obliquely to the galeal aponeurosis, and Yintang is raised. Pinch the needle method, insert the needle 10-15mm, make the needle feel to the root of the nose, the remaining points (the affected side acupoints) are routinely punctured, and the depth of the needle is 10-20mm.

3.3 Observation Group

The upper and lower focal areas on both sides of the eye acupuncture were combined with other acupoints, and the other acupoints were the same as the control group.

Operation: The eye acupuncture adopts the side-needling method, one needle is inserted first, and then another needle is placed next to it. Pinpoint the position of the acupuncture point, disinfect it first, then push the eyeball with one hand to the opposite side, and hold the needle with the other hand to accurately pierce 2mm from the inner edge of the eyeball, then percutaneously puncture 3-5mm horizontally, and insert a needle into the side as above, without twisting Rotate to lift and insert, scrape the needle handle lightly after the needle to obtain qi, first acupuncture at the eye area point, and then acupuncture at other points, the operation is the same as that of the control group.

The two groups were treated once a day, and the needles were retained for 30 min each time, for a total of 4 weeks.

4. Observation of Curative Effect Before and after Treatment

4.1 Observation of Curative Effect

Efficacy evaluation is mainly through the Fugl-Meyer (FMA) score scale [6], the Lovett muscle strength classification scale[7], and the modified Barthel index (Modified Barthel index, MBI) [8]. Before and after treatment, the designated physician will observe the changes of the assessment scale. No treatment is given during the assessment period, and the interval between the last treatment and the last treatment is at least 3 hours.

(1)FMA score: The motor function of the limbs is comprehensively assessed through the movement pattern, joint range of motion, reflex activity, motor coordination and speed. The total score is 100 points. The higher the score, the better the motor function of the affected limb. Some scholars have found that if the mean difference of FMA score exceeds 6 points before and after treatment, it is considered that this change is meaningful and cannot be caused by random error, and the treatment is considered effective [9].

(2) Lovett score : The muscle strength of the limbs is divided into six grades by observing and limb muscle contraction, joint activity, anti-gravity, and limb movement under the condition of applying a certain resistance. Higher, indicating better limb muscle strength.

(3) MBI score: The daily living ability of patients is mainly assessed through 10 items such as eating, washing, dressing, and bowel and bladder control.

4.2 Security Assessment

The occurrence of adverse reactions such as subcutaneous hematoma, dizziness, and infection during the treatment of the two groups of patients were recorded.

4.3 Statistical Processing

Statistical analysis was performed using SPSS 25.0 statistical software. The measurement data are expressed as mean \pm standard deviation ($\bar{x} \pm s$), the comparison of the therapeutic effect within the group before and after treatment uses the paired sample t test, the comparison between the groups uses the independent sample t test, the enumeration data uses the nonparametric rank sum test, and $P < 0.05$ is used as the difference statistically significant.

4.4 Results of Each Scale after Treatment

4.4.1 Comparison of Lovett Muscle Strength Scores At the End of Treatment

After treatment, the overall score of Lovett muscle strength classification in the observation group was higher than that in the control group ($p < 0.05$). See Table 3

Table 3 Lovett Muscle Strength Classification after Treatment in Two Groups

group		Lovett muscle strength classification					
		Level 0	Level 1	level 2	Level 3	level 4	Level 5
30cases in observation group	upper extremity	4	6	8	7	3	2
	lower limbs	3	7	8	6	4	2
30cases in the control group	upper extremity	8	7	7	3	4	1
	lower limbs	7	10	5	4	3	1

4.4.2 Fugl-Meyer Scale Scores of the Two Groups Before Treatment,

The independent samples t test ($p > 0.05$) was comparable. Before treatment, there was no significant difference between the two groups in the modified Barthel index score ($p > 0.05$). After treatment, the Fugl-Meyer scores of the two groups before and after treatment, by paired sample t test, $p < 0.05$, the difference within the group was statistically significant. The Barthel index scale scores of the two groups before and after treatment were tested by paired samples t test, $p < 0.05$, and the difference between the two groups was statistically significant. After treatment, Fugl-Meyer scale scores and modified Barthel index scores in both groups were improved, and the observation group was higher than the control group. See Table 4.

Table 4 Fugul-Meyer Score and Barthel Index Comparison of Patients in the Two Groups Before and after Treatment

group	Number of cases (n)	Fugul-Meyer score		Barthel Index	
		Before treatment	After treatment	Before treatment	After treatment
Observation group	30	40.22 ±5.14	67.67 ±6.72	46.11 ±6.68	64.44 ±3.24
control group	30	43.00 ±4.66	58.89 ±4.45	49.11 ±3.88	58.11 ±3.68
t value		-1.179	3.717	-1.167	4.122
P value		0.272	0.006	0.227	0.003

During the safety assessment study, 3 patients in the observation group developed subcutaneous hematoma on the local skin, and were treated with topical application to reduce swelling, and no adverse events such as dizziness and infection occurred in the remaining patients.

5. Efficacy Evaluation and Deficiencies

The results of this study show that eye acupuncture treatment can improve the muscle strength and motor function of hemiplegia patients after non-acute ischemic stroke, and enhance the patient's self-confidence in rehabilitation. The efficacy of acupuncture in the treatment of this disease has been recognized by the majority of medical institutions [10], and has also been accepted by the majority of patients. This time, by comparing the clinical efficacy of eye acupuncture and conventional acupuncture on ischemic stroke patients with hemiplegia, the psychological state, cooperation degree and therapeutic effect of the eye acupuncture group and the ordinary acupuncture group were compared. This disease provides new ideas for diagnosis and treatment [11].

Some studies have pointed out that eye acupuncture can reduce the pain caused by acupuncture in the treatment of this disease, and the effect is definite. The results of this study show that the muscle strength of the patients will obviously have a short-term improvement after the eye acupuncture is inserted, but the duration is not long, and the efficacy cannot be maintained all the time. But this is beneficial to the patient's self-psychological construction and is of great benefit to the patient's recovery during the rehabilitation period.

In this study, by comparing the results of FMA, MBI, and Lovett muscle strength scores between the two groups before and after treatment, it was found that the therapeutic effect of eye acupuncture was better than that of the conventional acupuncture group, and the overall dependence of the patients in the eye acupuncture group was higher than that of the conventional acupuncture group. Ordinary acupuncture can also improve the limb function status of hemiplegic patients, but there is no better way to alleviate the secondary injury during treatment in terms of short-term improvement of curative effect and enhancement of patients' confidence in recovery. The results of this study prove that eye acupuncture can effectively improve the muscle strength of the limbs of patients with ischemic stroke, and the curative effect is better than that of the control group; it can improve the motor dysfunction of the limbs, restore the patients' confidence in life, and can improve the patients' daily self-care ability, which is conducive to returning to a normal life after recovery.

The sample size of this study is relatively small, and the next step should be to expand the sample size, extend the follow-up time, and evaluate the long-term efficacy. The efficacy evaluation of this study was based on clinical scales, lacking the support of relevant laboratory indicators. Therefore, objective indicators should be added in the next step to study the mechanism of eye acupuncture in the treatment of hemiplegia patients after ischemic stroke. Funding: This research received no external funding.

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