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# Effect of traditional Chinese Medicine Rehabilitation Nursing on Early Functional Rehabilitation in Patients with Cerebral Infarction and Hemiplegia

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ABSTRACT

**Objective:** To explore the effect of traditional Chinese medicine rehabilitation nursing on early functional rehabilitation of patients with cerebral infarction hemiplegia. **Method:** 72 patients with cerebral infarction hemiplegia (March 2024 March 2025) were randomly divided into two groups using the drawing method, with 36 samples in each group. The control group received routine nursing interventions, while the study group received traditional Chinese medicine rehabilitation nursing. The effects of nursing interventions were compared among groups. **Result:** Compared with the control group, the study group showed better recovery of limb motor function after intervention, with improvements in neurological function, self-care ability, and quality of life scores ( $P < 0.05$ ). **Conclusion:** The use of traditional Chinese medicine rehabilitation nursing can help stroke patients with hemiplegia gradually recover neurological function remodeling and motor function, promoting substantial improvement in daily activity ability and quality of life.

## 1. Introduction

Cerebral infarction, as a severe cerebrovascular disease that poses a significant threat to human health, has a high incidence rate and a high disability rate, which brings a heavy burden to patients' families and society. Hemiplegia is one of the most common sequelae of cerebral infarction, which seriously affects the quality of life of patients<sup>[1]</sup>.

In recent years, with the development of rehabilitation medicine, early rehabilitation intervention has become an important means to improve the functional prognosis of patients with hemiplegia due to cerebral infarction. Traditional Chinese medicine (TCM) rehabilitation nursing, as a unique nursing model that combines traditional Chinese medicine with modern rehabilitation concepts, has demonstrated unique advantages in

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the rehabilitation of hemiplegia after stroke through syndrome differentiation nursing and holistic regulation<sup>[2]</sup>. Therefore, this study explores the application effect of TCM rehabilitation nursing in order to optimize the early rehabilitation program for patients with hemiplegia due to cerebral infarction and improve the rehabilitation outcomes.

## 2. Materials and Methods

### 2.1 General information

Seventy-two patients with hemiplegia with cerebral infarction (March 2024-March 2025) were randomly divided into two groups using the lottery method, with 36 samples from each. There were 22 males in the control group and 14 females; the ages were 56 to 83 years old, with the mean value (62.53±8.77) years old; there were 21 males in the study group and 15 females; the ages were 55 to 82 years old, with the mean value (61.28±9.31) years old. The baseline data of the two groups were compared with  $P>0.05$ .

Inclusion criteria: ① Consistent with the diagnostic criteria of cerebral infarction; and confirmed by CT or MRI; ② The first onset and there are clear symptoms of hemiplegia, and the muscle strength is  $\leq$  grade 3; ③ The onset time is less than 2 weeks, and the vital signs are stable.

Exclusion criteria: ① Severe heart, liver and renal insufficiency; ② Malignant tumors; ③ There is a tendency to bleeding or abnormal coagulation function; ④ Severe aphasia or mental illness cannot cooperate; ⑤ Previous motor system diseases affect functions.

### 2.2 Method

The control group was given routine nursing interventions. (1) Basic nursing: The system of dynamic monitoring of vital signs was strictly implemented. Risk assessment of pressure sores was carried out. Patients were assisted to change their positions every 2 hours and were provided with pressure-relieving devices. Three-level respiratory tract management was conducted, which included comprehensive measures such as postural drainage, percussion and expectoration, and nebulized inhalation. At the same time, attention was paid to the placement of limbs in functional positions. Orthopedic supports were used to maintain the neutral position of joints to prevent contracture deformity and muscle atrophy. (2) Rehabilitation and nursing intervention: Early guidance for patients to recuperate. As the condition recovers, the rehabilitator will be given exercises. A systematic joint passive activity training is performed every day. The single training time is strictly controlled at

30 minutes. The training content includes abduction (0-90°), forward flexion (0-180°) and internal and external rotation (0-45°) training of shoulder joints, and the elbow joints complete the full range of flexion and extension; the wrist joints are subject to dorsal extension (0-70°) and palm flexion (0-80°) exercises. Each joint activity is performed according to the standards of 10-15 times/group, and the training intensity is dynamically adjusted according to the patient's tolerance. (3) Psychological support and health education: Structural psychological intervention twice a week, 20 minutes each time, cognitive behavioral therapy is used to improve negative emotions, cooperate with the demonstration of successful rehabilitation cases to enhance treatment confidence, carry out step-by-step health education, explain the disease mechanism in the early stage, guide family rehabilitation methods in the middle stage, and emphasize measures to prevent recurrence in the later stage.

Based on the above intervention, the research group carried out traditional Chinese medicine rehabilitation nursing: (1) Syndrome and nursing: Establish an individualized traditional Chinese medicine nursing plan, implement emotional and mutual benefit therapy for patients with hyperactivity of liver yang, adopt the regulation mechanism of anger to hurt the liver-sad to overcome anger, and cooperate with the Yongquan point of Wuzhuyu patch; patients with phlegm and blood stasis blocking meridians to strengthen the spleen and eliminate phlegm, and use Poria yam porridge with hawthorn to eliminate food and drink, and implement the meridian patience; patients with Qi deficiency and blood stasis use the nursing method to nourish the middle and replenish Qi, and use Astragalus Guizhi Wuwu Decoction Foot Bath and Shenque Point to separate ginger moxibustion. (2) Acupuncture treatment: Academician Shi Xuemin's "Wake the Brain and Open the Orifices" acupuncture method is improved. The head acupuncture point is mainly selected by the exercise area and sensory area, and combined with Baihui, Sishencong and other acupoints; the limbs are selected by the Yangming meridian, Quchi, Hegu, Zuyangming meridian, Fengguan, Zusanli, etc., and 0.30×40mm acupuncture needle is used to perform a flat and smooth replenishment technique. After obtaining qi, the G6805 electric acupuncture device is connected to the sparse and dense wave, with a power of 2/100Hz, and the stimulation intensity is based on the patient's tolerance. (3) Traditional Chinese medicine fumigation: Use intelligent fumigation therapy instrument (ZZ-2000 type) to carry out targeted transdermal administration. The medicine liquid prescription is based on "Medical Forest Remedy" Buyang Huanwu Decoction, which contains 10

medicinal materials such as 15g of *Angelica sinensis*, 10g of *Chuanxiong*, and 10g of safflower. After decorating, it is filtered and bagged. During treatment, the distance between the affected limb and the fumigation head is maintained at 15-20cm, and the steam temperature is constant at (50±2)°C. The PID temperature control system ensures uniform thermal penetration. After treatment, use infrared thermal imaging camera to evaluate the improvement of local microcirculation.(4) Tuina massage: The rolling technique was used to relax the area along the Gallbladder Channel on the affected side, combined with the one-finger Zen pushing technique applied to specific acupoints of the Yangming Channel. The kneading technique was used for spastic muscles at a frequency of 120 times per minute to reduce muscle tension. The point-pressing technique was applied to atrophic muscles to stimulate the meridian energy. Key acupoints such as Hegu and Zusanli were stimulated, with each acupoint receiving manual stimulation for 1 minute. The whole set of operations was carried out according to the rhythm of light-heavy-light stimulation.

**2.3 Observation indicators**

The limb function was assessed according to the Fugl-Meyer scale, with 66 points for the upper limbs and 34 points for the lower limbs.

The National Institutes of Health Stroke Scale (NIHSS) was used for assessment, with lower scores indicating better recovery. The Barthel Index was employed to evaluate the ability of self-care, with scores based on a percentage system.

The quality of life was assessed using the General Quality of Life Scale (GQOL-74), with each item scored on a percentage basis.

**2.4 Statistical Methods**

The data involved in the research were processed using SPSS26.0 software, and the measurement data was represented by “(±s)” and the inspection was carried out through “t”; the counting data was represented by “[n/(%)]” and the inspection was carried out through “χ<sup>2</sup>” and P < 0.05 indicated that the difference had obvious significance.

**3. Results**

**3.1 Limb motor function score**

As shown in Table 1: The study group recovered better limb motor function after intervention than the control group, with P < 0.05.

**3.2 Neurological function and self-care ability score**

As shown in Table 2: Compared with the control group, the study group’s scores of neurological function and self-care ability were both improved after intervention, with a comparison P < 0.05.

**3.3 Quality of Life Score**

As shown in Table 3: After the intervention, the quality of life score of the research group was higher than that of the control group, with a comparison P<0.05.

**Table 1** Comparison of the functional scores of limbs in the two groups (±s)

Group	Number of examples	Upper limb motor function score		Lower limb motor function score	
		Before intervention	After intervention	Before intervention	After intervention
Control group	36	28.33±4.82	34.11±4.26	17.33±2.82	22.65±1.49
Research Group	36	28.22±4.74	41.75±5.68	17.22±2.74	25.38±2.24
t	--	0.0976	6.4563	0.0023	6.0885
p	--	0.9225	0.0000	0.9981	0.0000

**Table 2** Comparison of the scores of neurological function and self-care ability of the two groups (±s)

Group	Number of examples	NIHSS score		Barthel index	
		Before intervention	After intervention	Before intervention	After intervention
Control group	36	14.56±1.81	10.44±2.74	29.39±3.48	66.14±3.25
Research Group	36	14.72±1.91	6.14±2.72	29.22±3.86	71.19±3.43
t	--	0.3648	6.6825	0.1963	6.4124
p	--	0.7164	0.0000	0.8450	0.0000

**Table 3** Comparison of Quality of Life Scores between the Two Groups ( $\bar{x}\pm s$ , points)

Group	Number of examples	Psychological function		Material life		Somatic function		Social function	
		Before intervention	After intervention	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
		Control group	36	46.98±7.46	65.74±9.54	45.78±7.26	66.49±6.66	39.88±7.23	65.74±6.32
Research Group	36	46.87±7.37	72.61±8.63	45.94±8.32	73.16±8.41	39.59±8.28	75.26±5.41	43.28±7.27	73.46±6.43
t	-	0.0629	3.2042	0.0869	3.7305	0.1583	6.8660	0.4504	5.1435
p	-	0.9500	0.0021	0.9310	0.0004	0.8747	0.0000	0.6538	0.0000

#### 4. Discussion

Hemiplegia caused by cerebral infarction is essentially due to ischemic necrosis of brain tissue caused by cerebral vascular occlusion, which leads to the interruption of the motor conduction pathway. When the middle cerebral artery supply area is affected, damage to the cortical motor area and pyramidal tract will directly cause motor dysfunction of the contralateral limb. Long-term immobilization can lead to secondary damage such as muscle atrophy and joint contracture, forming a vicious cycle of disuse and atrophy. The traditional rehabilitation nursing model does not accurately grasp the timing of intervention. Some hospitals still hold the concept of "bed rest," missing the golden recovery period within 3 months after onset. Moreover, the intervention methods are singular, mainly relying on passive joint movement, and lack an overall functional reconstruction strategy [4]. The fragmented nursing model cannot fully mobilize the patients' inherent rehabilitation potential, leading to the early appearance of the functional recovery plateau. Traditional Chinese medicine rehabilitation nursing, as an important part of the traditional medical system, is based on the theory of Yin and Yang, the Five Elements, and the holistic concept. By systematically applying traditional Chinese medicine theory to guide clinical practice, it helps patients to recover or improve physical functions [5].

The results show that the recovery of limb motor function in the research group is better than that in the control group after intervention, which indicates that traditional Chinese medicine rehabilitation nursing can effectively promote the remodeling of central nervous system function. The reasons are analyzed as follows: Acupuncture therapy is used to stimulate the acupoints in the motor and sensory areas, which can activate the neuroplasticity changes in the motor representation area of the cerebral cortex. The sparse-dense wave of electroacupuncture can simultaneously excite A $\beta$  and C nerve fibers, promoting the secretion of neurotrophic factors. The dual effect of temperature and medicine in

traditional Chinese medicine fumigation can reduce blood viscosity. The medicinal components such as *Angelica sinensis* and *Ligusticum chuanxiong*, which are absorbed through the skin, can improve local microcirculation and provide a material basis for nerve repair. Tuina massage activates the feedback of muscle spindles and tendon organs through mechanical stimulation, breaking the vicious cycle of spasm and atrophy, and thereby promoting the recovery of limb function [6].

The results show that after the intervention, the scores of neurological function and self-care ability in the research group were improved [7]. This indicates that the individualized plans established by traditional Chinese medicine rehabilitation nursing can regulate the neuroendocrine network for different syndromes. The reasons are analyzed as follows: Syndrome differentiation-based nursing care was used. For the type of hyperactivity of liver yang, emotional regulation was applied to inhibit the excessive excitation of the sympathetic nerve, which can reduce the level of catecholamines. For the type of qi deficiency and blood stasis, ginger-separated moxibustion was used to increase the serum nitric oxide (NO) content and improve cerebral tissue perfusion [8].

#### 5. Conclusion

In summary, the application of traditional Chinese medicine rehabilitation nursing can assist patients with hemiplegia due to stroke in gradually restoring the remodeling of neurological function and motor function, and promoting substantial improvements in the ability to perform activities of daily living and in the quality of life.

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