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## ORIGINAL

# EVALUATING THE RECOVERY EFFECTS OF ACUPUNCTURE AND TRADITIONAL HERBAL DECOCTIONS ON POST-STROKE ATHLETES

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### ABSTRACT

**Objective:** This study evaluates the recovery benefits of integrating acupuncture with Buyang Huanwu Decoction and Siwei Jianbu Decoction on post-stroke rehabilitation in athletes. **Methods:** The study retrospectively analyzed medical records of 66 athletes diagnosed with cerebral infarction sequelae from June 2021 to June 2022. Patients were divided into two groups: the control group received standard Western medication and acupuncture, while the observation group was treated with a combination of Buyang Huanwu and Siwei Jianbu Decoctions, in addition to acupuncture. Outcomes assessed included quality of life, neurological function, motor skills, daily living abilities, Traditional Chinese Medicine (TCM) syndrome scores, and hemorheological markers. **Results:** Post-treatment, the observation group exhibited significantly improved scores in general health, social functioning, and mental health compared to the control group ( $P < 0.05$ ). Neurological deficit scores (NIHSS) were notably lower, and both Fugl-Meyer Assessment (FMA) scores and Activities of Daily Living (ADL) scores were higher in the observation group ( $P < 0.05$ ). Improvements in hemiparesis, hemiplegia, and speech functions were more pronounced in the observation group, along with favorable changes in hemorheological properties like plasma viscosity and platelet aggregation, although these did not reach statistical significance. **Conclusion:** Combining acupuncture with Buyang Huanwu and Siwei Jianbu Decoctions significantly enhances neurological recovery, motor function, and independence in daily activities among athletes recovering from cerebral infarction. These findings support the integration of traditional therapies into rehabilitation programs for athletes to optimize recovery and functional

outcomes post-stroke. This approach underscores the potential of tailored traditional treatments in sports medicine and rehabilitation.

**KEYWORDS:** Sequelae of cerebral infarction; Acupuncture; Buyang Huanwu Decoction; Siwei Jianbu Decoction; Quality of life

## 1. INTRODUCTION

Stroke, including cerebral infarction, is a critical medical condition that severely impacts motor function and cognitive abilities. In the general population, the recovery process can be lengthy and complex. In athletes, these challenges are compounded by the demands of their sports and the high level of physical fitness required for competition. Consequently, optimizing recovery strategies to expedite the return to sport and minimize long-term impacts is paramount in this population (Fernandes et al., 2022).

Acupuncture and traditional Chinese medicine (TCM) have been recognized for their potential in supporting neurological recovery and improving functional outcomes in stroke patients. Specifically, Buyang Huanwu Decoction and Siwei Jianbu Decoction, two well-known TCM formulations, have shown promise in enhancing neurorecovery through mechanisms believed to involve improving blood circulation, reducing inflammation, and promoting neural repair. Their application in athletes, however, remains underexplored, particularly concerning how these treatments can be integrated with conventional medical practices to address unique athletic needs. The rehabilitation of athletes after cerebral infarction poses distinct challenges. Athletes are often required to regain baseline function and peak physical and neurological performance levels. This necessitates a multidisciplinary approach that includes advanced physiotherapy, personalized exercise regimens, and nutritional support alongside medical and traditional treatments. Integrating acupuncture and TCM into this mix could potentially offer synergistic effects, enhancing recovery rates and outcomes (Ali et al., 2021; Frantz et al., 2023; Lewis et al., 2021).

Moreover, the recovery metrics for athletes need to be specifically tailored. Traditional measures of stroke recovery may not adequately reflect the nuances of athletic performance. For instance, minor deficits in balance, coordination, or cognitive function that might be clinically insignificant for the general population could critically impair an athlete's competitive ability (Phan et al., 2021). Therefore, studies focusing on this area must employ a range of performance-specific assessments to truly gauge the recovery and readiness of athletes to return to sport. This study aims to fill a gap in the existing research by systematically evaluating the effectiveness of acupuncture combined with Buyang Huanwu and Siwei Jianbu Decoctions in the context of athletic rehabilitation following cerebral infarction.

By focusing on outcomes relevant to both general health and specific athletic performance, this research will provide valuable insights into the potential of these traditional therapies to enhance the recovery trajectory of athletes, offering a broader perspective on how integrative medicine can be tailored to meet the specialized needs of this high-functioning group. Here is a quick rundown of the main points.

## 2. Data and methods

### 2.1 Data

Patients who received care at our institution for complications after a cerebral infarction between June 2021 and June 2022 were included in this study. Patients' records were looked back at and reviewed for anything of use. There was a total of 66 participants; 33 in the treatment arm (the "control group") and 33 in the "observation" arm (the "observation group"). Statistics showed no significant difference ( $P > 0.05$ ) between the two groups. Specifics are included in Table 1 and Figure 1:

**Table 1:** Comparison of two patient groups with cerebral infarction sequelae

GROUP	N	MALE (N)	FEMALE (N)	AGE (YEARS)	DISEASE PROGRESSION (MONTHS)	WEIGHT (KG)	HYPERTENSION (N)	DIABETES MELLITUS (N)
<b>CONTROL GROUP</b>	33	19	14	70.39 ± 2.03	8.76 ± 0.50	64.78 ± 1.86	24	17
<b>OBSERVATION GROUP</b>	33	21	12	70.21 ± 2.01	8.82 ± 0.39	64.94 ± 1.79	21	13
<b>X<sup>2</sup>/T</b>		0.254		0.338	1.723	0.356	0.629	0.978
<b>P</b>		0.614		0.736	0.090	0.723	0.428	0.323

#### 2.1.1 Inclusion Criteria

Those who were consistent with the relevant contents of the diagnostic criteria for cerebral infarction. The patients with

onset time of 1 month or more and the condition in the stage of sequelae. According to the applicable criteria of qi deficiency and blood stasis type, these individuals have heart function above grade III and muscular strength below grade IV. Those with speech jerkiness, sensory paralysis on the affected side and limb weakness. Those who had no history of infarction and whose condition was effectively controlled. Those who have used hormone drugs during the last several years are not eligible for inclusion

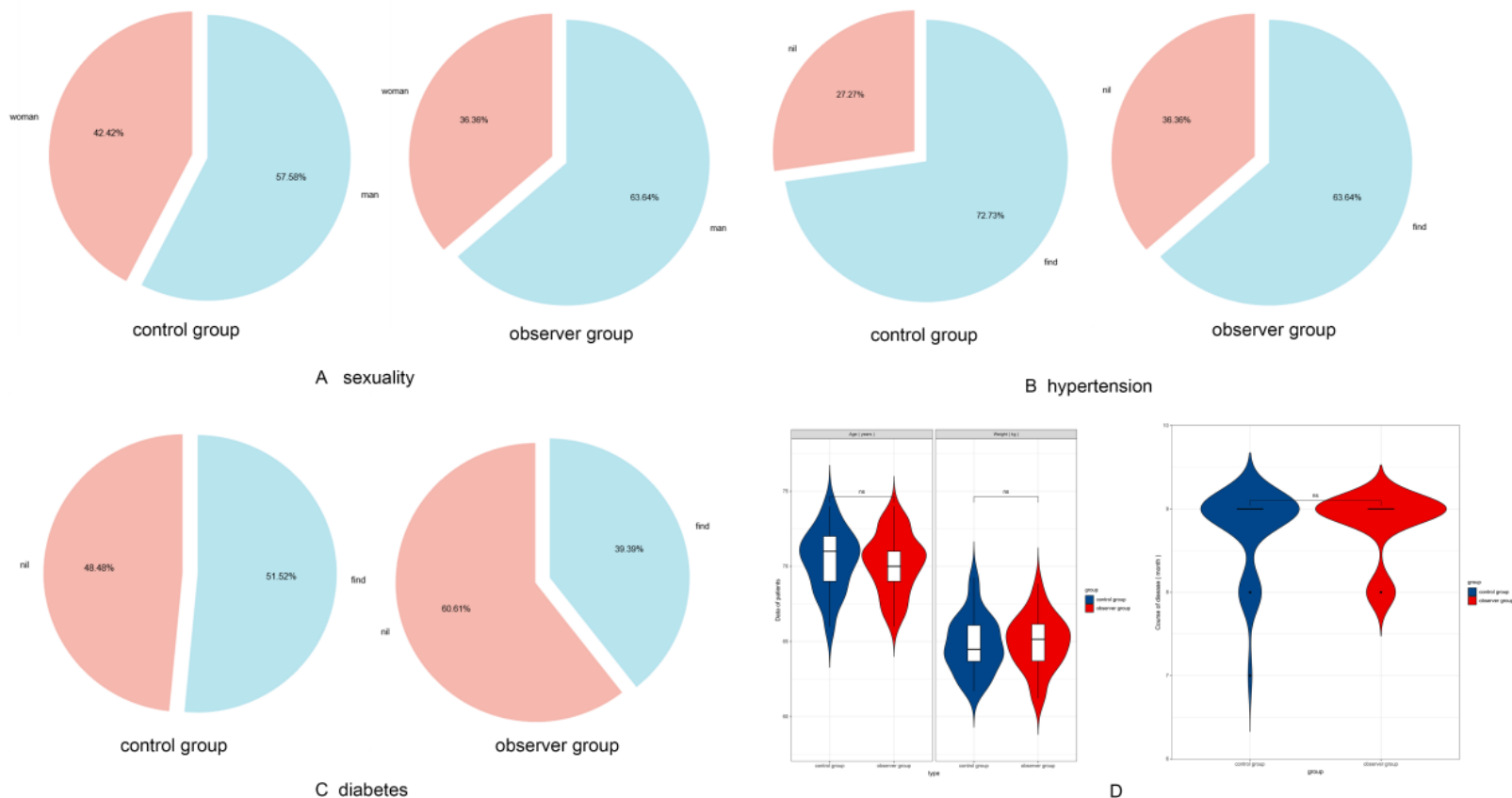


Figure 1: Data analysis

Those who have already had procedures on the skull and brain. Individuals with life-threatening conditions, such as heart disease, mental illness, and a lack of bodily functions. Those who had allergic reactions to research related drugs. Those with abnormal coagulation function, history of limb sensory disturbance and hemiplegia. Patients with a history of acupuncture treatment in the past week. Those with unstable vital signs or condition.

## 2.2 Methods

Patients in the control group got standard Western medical care, acupuncture, and the use of aspirin and other antiplatelet aggregation medications. The medication method was oral administration, once a day, 100mg each time. Atorvastatin calcium was given once a day for lipid-lowering and plaque stabilizing treatment, 20mg each time. If the patients were complicated with diabetes or hypertension, corresponding hypoglycemic and antihypertensive treatment were given. At the same time, according to the patients' clinical manifestations, acupoint acupuncture was taken. For patients with hemiplegia, acupuncture was performed at Jianxi, Quchi, Waiguan, shousanli, Hegu, Neiguan, Binao and Yangchi points on the upper limb, Huantiao, Weizhong, Zusanli, Kunlun, Yanglingquan, Xuehai, Chengshan, Sanyinjiao, Taixi, Taichong, juegu, Yaoyangguan and Fengshi points on the lower limb. According to the patients with language astringency and mouth and eye deviation, acupuncture was performed at Fengfu, Taiyang, Baihui, Dicang, zanzhu, Xiaguan, Renzhong, Lianquan and Yamen acupoints on the head and face. For silent patients, took Yuye point and Jinjin point for bloodletting, and acupuncture was performed at Neiguan point, Tongli point, Lianquan point and Sanyinjiao point. During each treatment, 8-10 acupoints were taken at the head position and the upper and lower limbs respectively. The manipulation included lifting, inserting and twisting, tonifying deficiency and reducing excess. The needle retention time at each acupoint was 30min. After five days of treatment, acupuncture was applied again two days later. The patients received three courses of treatment. Patients in the observation group received the same standard Western medication and acupuncture as those in the treatment groups, and they were also given the Buyang Huanwu Decoction and the Siwei Jianbu decoction. The fundamental prescription consisted of 30 grammes of radix astragali and radix salviae mildtiorrhizae, 15 grammes of achyranthes bidentatae, 10 grammes of radix angelica sinensis, radix paeoniae rubra, radix paeoniae alba, earthworm, peach kernel, Dendrobium, and safflower, and 12 grammes of radix ligusticium. If the patients' constitution was cold, 6g cooked aconite was added to the basic prescription. If the patients' spleen and stomach were weak, 15g Codonopsis pilosula and 10g Atractylodes macrocephala were added in the basic prescription. If the patients had more phlegm, 10g of Geranium yellow and 10g of Pinellia ternata were added. If the patients had adverse speech

performance, 10g Polygala tenuifolia and 10g Acorus calamus were add. For hemiplegia, 10g pangolin, 10g leech and 10g mulberry twig were added. The medicine materials were taken and boiled in water, one dose a day, and take 200ml of the medicine juice in the morning and evening. The patients received medication for three months. The rehabilitation physician coached the first and second groups of patients through a variety of exercises, including sit-ups, standing, walking, and others, as part of their therapy.

### 2.3 Observation indicators

(1) A statistical comparison was made of the two groups' quality-of-life developments. The quality of life was evaluated using the SF-36 scale both before and after treatment was administered, focusing on such subscales as "emotional" and "physiological" functioning and "physiological role" and "physical pain" and "social function" and "energy" and "mental health" and "overall health." Each factor might be given a score between 0 and 100, with larger numbers indicating more prominence.

(2) A comparison of the two groups' gains in neurological and motor function was conducted. Pre- and post-treatment assessments of patients' neurological function were made using the neurological deficiency scale (NIHSS). The possible scale points were between zero and forty-two. Reduced scores indicate improved neurological function. Patients' motor abilities were rated out of 100 on the Fugl Meyer motor function rating scale (FMA). A higher score indicates more preeminence.

(3) The third section examined the differences in how people's daily routines have changed across the different groups. The ADL scale was developed to measure how well a subject was able to do everyday tasks. Total points were 100. A higher score indicates that the patient is doing better on ADL.

(4) There was a statistical comparison of the two groups' TCM syndrome score changes. Before and after therapy, the patient's level of hemiparesthesia, hemiplegia, tongue deviation, unconsciousness, and linguistic astringency was recorded. Each symptom might be given a score between zero and six. The milder the symptoms, the lower the score.

(5) Hemorheological parameters were monitored for variations across groups. Patients' fasting venous blood was taken in the morning before and after therapy in a 5ml volume. Using an automated hemorheological viscosity tester, we determined the plasma viscosity, platelet aggregation rate, high shear viscosity, and low shear viscosity of whole blood.

(6) Patients in both groups had their treatment-related side effects and symptoms documented.

## 2.4 Statistical treatment

To standardise the statistical analysis of research-related data, Spss20.0 was used. The measurement data in the two groups were reported as ( $\bar{x} \pm s$ ), and the count data were expressed as "%." In the former, the t-test was used, and in the later, the chi square test.  $P < 0.05$  served as the expression form for a statistically significant difference.

## 3. Results

### 3.1 Comparison of quality of life

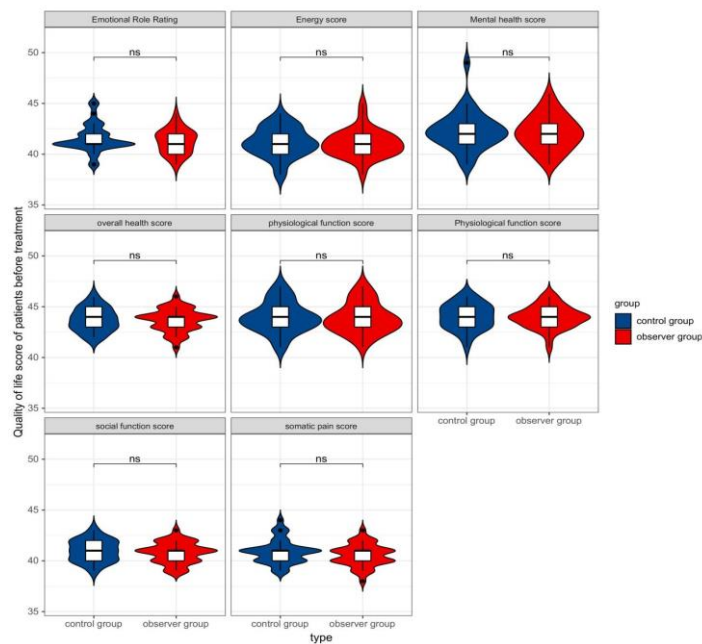
Tables 2 and 3 show that, prior to treatment, there was no statistically significant change ( $P > 0.05$ ) in the mean SF-36 scores of patients in the observation group compared to those in the control group. Patients in the observation group improved more across the board than those in the control group after therapy ( $P < 0.05$ ). Please refer to Figures 2 and 3.

**Table 2:** Comparison of the two groups of patients with cerebral infarction sequelae's quality of life ratings before treatment (n=33, points)

GROUP	SCORE FOR EMOTIONAL FUNCTION	SCORE FOR THE PHYSIOLOGICAL ROLE	SCORE FOR PHYSIOLOGICAL FUNCTION	SCORE FOR SOMATIC PAIN	SCORE FOR SOCIAL FUNCTION	ENERGY LEVEL	SCORE FOR MENTAL HEALTH	OVERALL, HEALTH SCORE
<b>CONTROL GROUP</b>	41.58 ± 1.39	44.03 ± 1.26	43.94 ± 1.50	40.91 ± 1.18	41.00 ± 1.06	41.15 ± 1.44	42.30 ± 1.90	43.73 ± 1.15
<b>OBSERVATION GROUP</b>	41.24 ± 1.20	43.97 ± 1.10	43.89 ± 1.49	40.55 ± 1.09	40.79 ± 1.02	41.06 ± 1.37	42.12 ± 1.73	43.67 ± 1.11
<b>T</b>	1.049	0.168	0.162	1.140	0.628	0.201	0.294	0.218
<b>P</b>	0.298	0.867	0.872	0.259	0.532	0.841	0.770	0.829

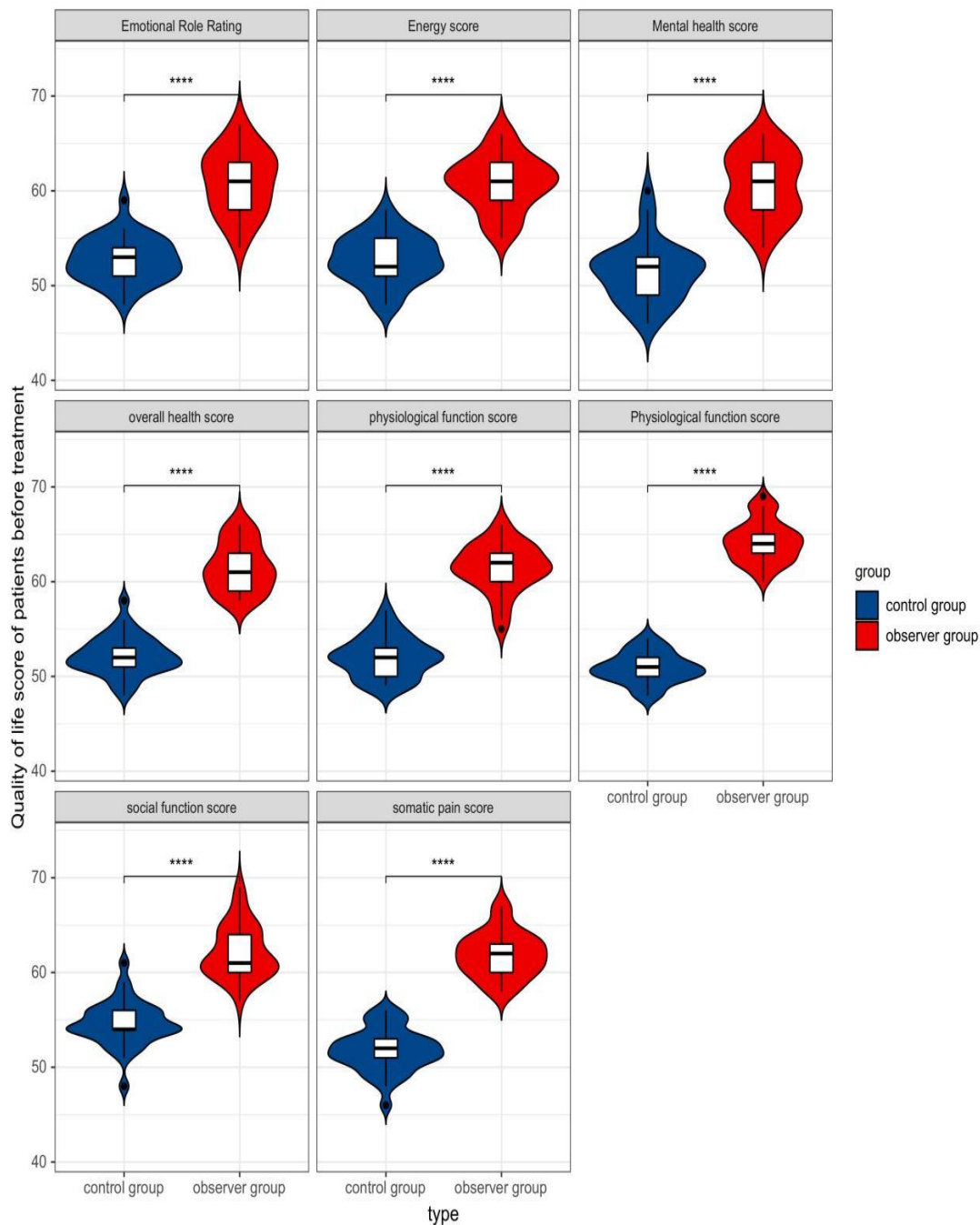
**Table 3:** Comparison of the two groups of patients with cerebral infarction sequelae's quality of life ratings after treatment (n=33, points)

GROUP	EMOTIONAL FUNCTION SCORE	PHYSIOLOGICAL ROLE SCORE	PHYSIOLOGICAL FUNCTION SCORE	SOMATIC PAIN SCORE	SOCIAL FUNCTION SCORE	ENERGY SCORE	MENTAL HEALTH SCORE	OVERALL HEALTH SCORE
<b>CONTROL GROUP</b>	52.73 ± 2.32	50.88 ± 1.60	52.03 ± 2.10	51.79 ± 2.27	54.61 ± 2.40	52.76 ± 2.53	51.42 ± 3.17	52.21 ± 2.09
<b>OBSERVATION GROUP</b>	60.97 ± 3.39	64.21 ± 2.22	61.45 ± 2.58	61.88 ± 2.38	62.21 ± 2.80	60.85 ± 2.91	60.58 ± 3.42	61.48 ± 2.58
<b>T</b>	11.473	27.496	16.086	17.631	11.704	11.917	11.358	16.002
<b>P</b>	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001



**Figure 2:** Before treatment, quality of life score analysis





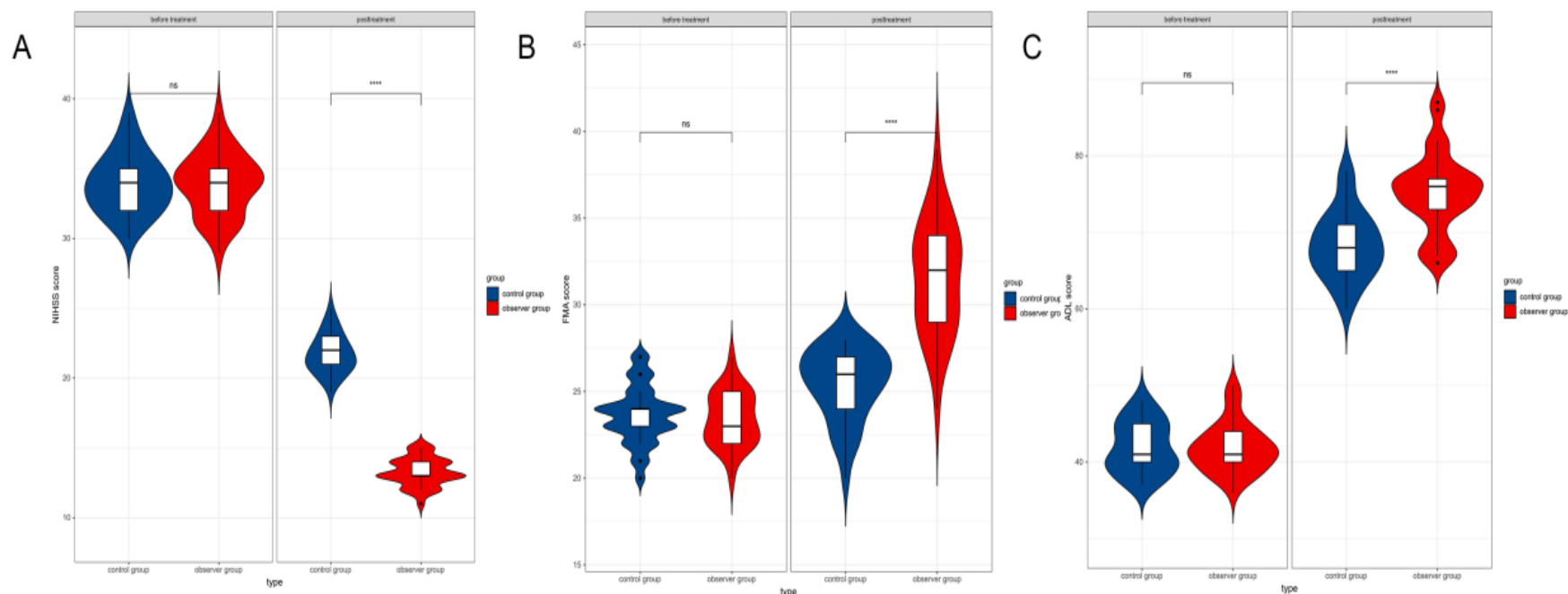
**Figure 3:** analysis of quality-of-life ratings after therapy

### 3.2 Comparison of motor function, nerve function, and everyday activities

The information in Table 4 shows that there was no statistically significant change in the patients' NIHSS, FMA, and ADL scores between the two groups prior to the start of therapy ( $P > 0.05$ ). After treatment, the observation group's NIHSS score was considerably lower than the control groups, but the FMA and ADL scores were significantly higher ( $P < 0.05$ ). Look at Figure 4.

**Table 4:** Compares the differences in patient neurological, motor, and daily living activities between the two groups (n=33, points).

GROUP	NIHSS SCORE		FMA SCORE		ADL SCORE	
	BEFORE TREATMENT	AFTER TREATMENT	BEFORE TREATMENT	AFTER TREATMENT	BEFORE TREATMENT	AFTER TREATMENT
<b>CONTROL GROUP</b>	33.91 ± 2.13	21.73 ± 1.40	23.67 ± 1.65	25.45 ± 2.06	41.91 ± 3.34	68.33 ± 4.39
<b>OBSERVATION GROUP</b>	33.88 ± 2.23	13.27 ± 1.01	23.42 ± 1.56	31.55 ± 3.30	41.85 ± 3.24	75.21 ± 5.14
<b>T</b>	0.056	27.701	0.555	9.047	0.074	5.849
<b>P</b>	0.956	0.001	0.581	0.001	0.941	0.001



**Figure 4:** Analysis of neurological function, motor function and activities of daily living

### 3.3 Comparison of TCM syndrome scores

The findings in Table 5 show that, prior to treatment, there was no statistically significant difference between the observation group and the control group in terms of the patients' ratings for hemiparesthesia, hemiplegia, tongue deviation, unconsciousness, and linguistic astringency ( $P > 0.05$ ). Patients in the observation group had substantially lower syndrome ratings after therapy ( $P < 0.05$ ) than those in the control group. See Figure 5.

**Table 5(part a):** Comparison of the two groups' patients' TCM syndrome score changes (n=33, points)

GROUP	HEMIPARESTHESIA		HEMIPLEGIA		CROOKED TONGUE	
	BEFORE TREATMENT	AFTER TREATMENT	BEFORE TREATMENT	AFTER TREATMENT	BEFORE TREATMENT	AFTER TREATMENT
<b>CONTROL GROUP</b>	3.15 ± 0.29	2.56 ± 0.13	3.04 ± 0.58	2.18 ± 0.09	3.51 ± 0.43	2.26 ± 0.13
<b>OBSERVATION GROUP</b>	3.22 ± 0.31	1.08 ± 0.11	3.25 ± 0.51	1.39 ± 0.06	3.65 ± 0.52	1.43 ± 0.09
<b>T</b>	0.947	49.925	1.562	41.956	1.192	30.155
<b>P</b>	0.347	0.001	0.123	0.001	0.238	0.001

**Table 5(part b):** Comparison of the two groups' patients' TCM syndrome score changes (n=33, points)

GROUP	STUPOR OF DIVINE SENSE		HARSH LANGUAGE	
	Before treatment	After treatment	Before treatment	After treatment
<b>CONTROL GROUP</b>	3.47 ± 0.32	2.26 ± 0.18	3.64 ± 0.48	2.45 ± 0.36
<b>OBSERVATION GROUP</b>	3.52 ± 0.29	1.09 ± 0.06	3.77 ± 0.52	1.21 ± 0.19
<b>T</b>	0.665	35.424	1.055	17.499
<b>P</b>	0.508	0.001	0.295	0.001

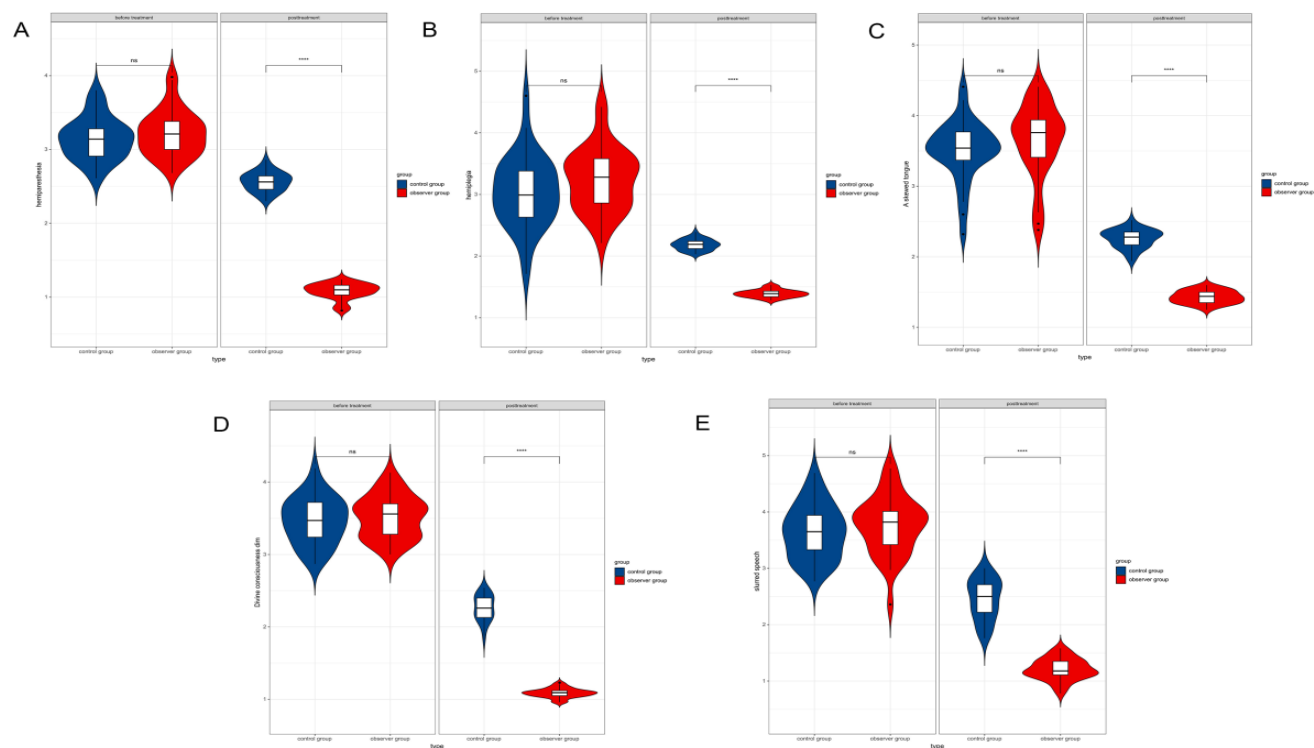


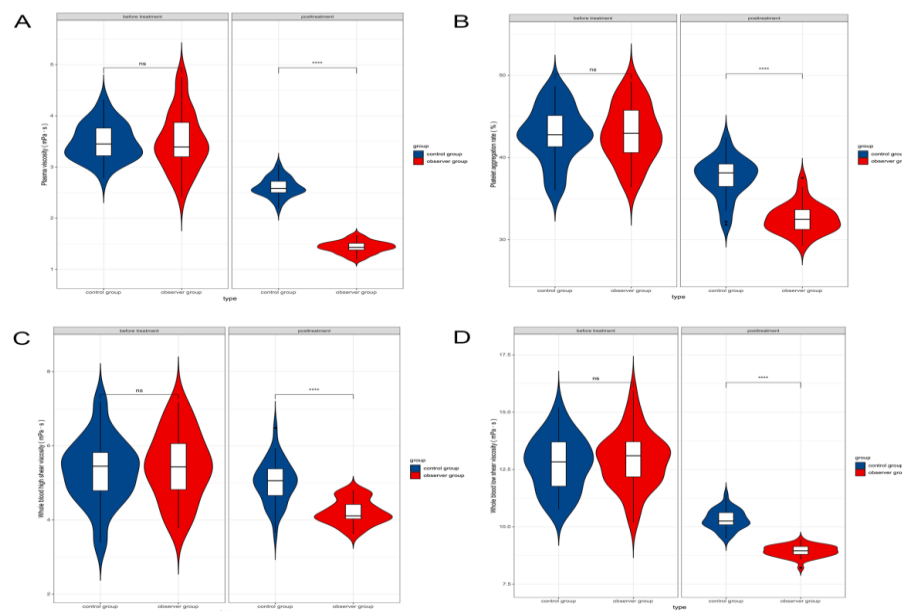
Figure 5: Analysis of TCM syndrome scores

### 3.4 Comparison of Hemorheological indicators

The findings in Table 6 show that, prior to treatment, there was no statistically significant difference in the hemorheological indices between the groups ( $P > 0.05$ ). After treatment, patients in the observation group had lower values of each measure than those in the control group ( $P < 0.05$ ). Look at Figure 6. These results clearly demonstrate the effectiveness of the treatment in improving hemorheological indices. This suggests a potential benefit for patients with conditions related to blood flow.

**Table 6:** Shows a comparison of the two groups' hemorheological indicators for patients with cerebral infarction sequelae (n=33).

GROUP	PLASMA VISCOSITY (MPA · S)		PLATELET AGGREGATION RATE (%)		WHOLE BLOOD HIGH SHEAR VISCOSITY (MPA · S)		WHOLE BLOOD LOW SHEAR VISCOSITY (MPA · S)	
	Prior to therapy	After therapy	Prior to therapy	After therapy	Prior to therapy	After therapy	Prior to therapy	After therapy
<b>THE NORMATIVE GROUP</b>	3.49 ± 0.36	2.61 ± 0.19	42.85 ± 3.39	37.61 ± 2.45	5.32 ± 0.89	5.02 ± 0.58	12.75 ± 1.18	10.32 ± 0.43
<b>OBSERVATION GROUP</b>	3.51 ± 0.58	1.43 ± 0.12	42.92 ± 3.45	32.57 ± 1.79	5.46 ± 0.93	4.21 ± 0.33	12.92 ± 1.24	8.94 ± 0.25
<b>T</b>	0.168	30.164	0.083	9.542	0.625	6.973	0.571	15.938
<b>P</b>	0.867	0.001	0.934	0.001	0.534	0.001	0.570	0.001



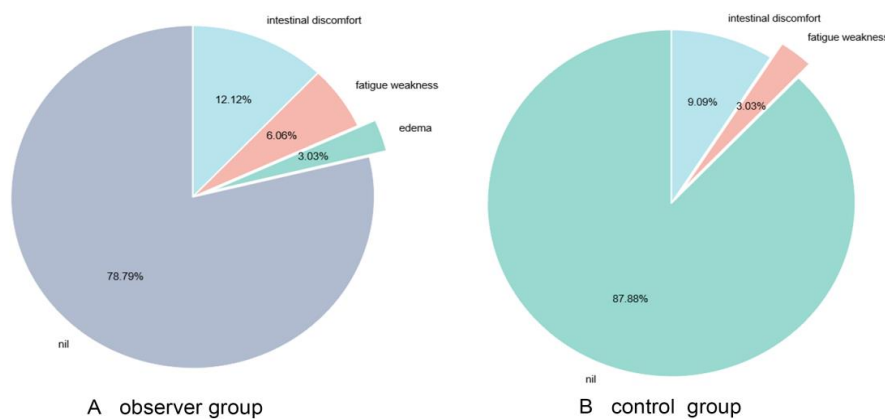
**Figure 6:** Hemorheological analysis

### 3.5 Comparison of the frequency of unfavourable effects

The findings in Table 7 show that there was no statistically significant difference in the occurrence of adverse responses between the observation group and the control group over the course of the therapy ( $P > 0.05$ ). Consider Figure 7.

**Table 7:** Compares the frequency of negative responses in individuals with cerebral infarction aftereffects in the two groups. (n,%)

GROUP	N	GASTROINTESTINAL DISCOMFORT	FATIGUE AND WEAKNESS	AND EDEMA	TOTAL
CONTROL GROUP	33	3	1	0	12.12
OBSERVATION GROUP	33	4	2	1	21.21
$X^2$					0.982
P					0.322



**Figure 7:** Analysis of incidence of adverse reactions

## 4. Discussion

In the clinic, cerebral infarction is one of the most often-seen cerebrovascular diseases. The majority of the disease's victims are persons in their middle years and later years. Reasonable dietary structure, alcohol abuse, tobacco use, and other risk factors have been linked to the disease's development (Li et al., 2021). Despite the fact that scientific and reasonable treatment has a significant effect on lowering the mortality rate of the disease, most patients with severe disease still have hemiplegia or other serious complications after systematic treatment, which affects the limb motor function and daily life ability, and decreases the quality of life of patients (Paudyal et al., 2021). The brain's sensory function, limb motor function, and central nervous system may all be negatively impacted by cerebral infarction's aftermath, which

is caused by the interruption of blood flow and oxygen delivery to the brain. Also, they may contribute to the development of symptomatology such as hemiplegia, linguistic impairment, and cognitive impairment (Aydođan Arslan et al., 2022; Fruhwirth et al., 2021). Although conventional western medicine treatment can alleviate disease-related symptoms, the recovery speed of patients is relatively slow, which may affect their confidence in recovery (Geng et al., 2021). In addition, with the extension of medication time, the occurrence risk of drug resistance and related drug reactions in patients can be gradually increased (Li et al., 2020). Stroke is a condition of asthenia in traditional Chinese medicine, both in terms of its genesis and its superficiality, and as a result, its aftereffects are classified under the heading of "stroke." The underlying causes of sickness include a disruption of yin and yang, as well as Qi and blood flow. When the condition progresses, the degree of blood stasis and vein stasis increases, resulting in pathological alterations such as Qi without blood and blood without feeding tendons, which further impairs motor function in the limbs (Darrow et al., 2020; Zhang et al., 2020). Traditional Chinese medicine views Qi deficiency and blood stasis as central to the development of cerebral infarction and the underlying cause of its consequences (Qiu et al., 2021). Both Buyang Huanwu Decoction and Siwei Jianbu Decoction were used to treat the disease; the former was found to be effective at tonifying Qi, stimulating blood flow, and dredging collaterals, while the latter was found to be effective at fortifying the waist and knees, bolstering the muscles and bones, dispersing blood stasis, and stimulating blood flow. In the prescription, *Astragalus membranaceus* is used for dredging collaterals and removing blood stasis, while *Ligusticum chuanxiong*, safflower, red peony, and other medicinal materials are used for activating blood circulation and removing blood stasis, as well as dredging channels and activating collaterals (Naro et al., 2021; Yarahmadian et al., 2022). The benefits of *Achyranthes bidentata* include stimulating the production of new liver cells, stimulating the production of new kidney cells, strengthening muscles and bones, increasing blood flow, and dissolving blood clots. In all, the prescription has the following effects: increased resistance to disease; elimination of pathogenic elements; elimination of blood stasis; and increased qi and blood flow. On the other hand, acupuncture was used to treat patients based on their symptoms, with needles inserted into acupoints on the affected side (e.g., limb, head, shoulder, elbow, wrist, hip, knee) to obtain the effects of dredging Qi and blood, activating collaterals and tendons, restoring consciousness and resuscitation, and thereby alleviating the patients' muscle spasm symptoms. Simultaneously, it may enhance muscular strength, muscle group function, and limb motor performance (Zhao et al., 2020). As current pharmacological knowledge shows (Huang et al., 2020), In order to restore the patients' neural function and improve the local muscle tension state and limb function, acupuncture treatment can promote the improvement of cerebral blood circulation, have a good regulatory effect on neurotransmitters, inhibit neuronal apoptosis, and promote the changes of the plasticity of spinal cord

motor neurons. Recent pathological research has shown that (Ying et al., 2020), Increases in blood viscosity are linked to the onset and progression of cerebral infarction. Alterations in hemorheological parameters have been linked to a decrease in cerebral blood perfusion and microcirculation, both of which have metabolic consequences. This research found that following treatment, the hemorheological indices of patients in the observation group were considerably higher than those in the control group. The results demonstrate that patients with cerebral infarction sequelae may have their hemorheological markers improved with a combination of acupuncture, Buyang Huanwu Decoction, and Siwei Jianbu decoction. Based on the results of the cause-and-effect analysis, modern pharmacological studies have confirmed that the *Astragalus membranaceus* found in traditional Chinese medicine has saponins, polysaccharides, and other effective components that can inhibit platelet aggregation and protect the blood-brain barrier of patients. The medications are able to fend off free radicals and aid in the recovery of hypoxic and ischemic brain cells (Li et al., 2021). When used together, the components of the prescription can reduce blood viscosity, lessen the severity of cerebral hematoma, and lower intracranial pressure while also enhancing cerebral blood circulation and promoting the opening and reconstruction of collateral vessels in the cerebral ischemic area. When used in conjunction with acupuncture, it may help patients regain the use of their limbs after nerve injury. Patients in the observation group had substantially higher scores on all quality of life dimensions (ADL, NIHSS, FMA, and TCM syndrome) compared to those in the control group, although there was no difference between the two groups in the occurrence of adverse events. This data suggests that the synergistic use of acupuncture, Buyang Huanwu Decoction, and Siwei Jianbu decoction for patients with cerebral infarction sequelae may successfully alleviate associated symptoms and enhance patients' quality of life, with a low risk of adverse effects. Acupuncture is a widely used external therapy procedure in traditional Chinese medicine, which may dredge the meridians and control qi and blood among other effects, as shown by an examination of the reasons for its popularity. There has been sufficient research to conclude that (Fruhirth et al., 2021), Inhibitory state of the cerebral cortex may be enhanced and brain tissue and nerve function can be enhanced with acupuncture treatment. Acupuncture, as shown by clinical manifestations in patients, may increase local blood circulation, set the stage for the restoration of bodily tissue function, and ultimately boost patients' capacity to go about their everyday lives. It is of tremendous importance to enhance patients' prognoses to use both acupuncture and traditional Chinese medicine decoctions, as this will produce the effects of internal and exterior harmony and treatment of both symptoms and signs. This research has critically assessed the therapeutic benefits of integrating acupuncture with Buyang Huanwu Decoction and Siwei Jianbu Decoction in the rehabilitation of athletes who have suffered from cerebral infarction. Our findings reveal significant improvements in neurological and



motor functions, which are essential for athletes aiming to return to competitive sports. The utilization of traditional Chinese medicine (TCM) in conjunction with conventional rehabilitation methods has shown a notable enhancement in recovery outcomes compared to conventional treatments alone. Our study demonstrates that athletes who received combined treatments of acupuncture and TCM formulations not only showed greater improvements in physical and neurological assessments but also reported higher satisfaction with their overall rehabilitation process. These results suggest a synergistic effect where the combination of these treatments accelerates recovery, reduces the severity of post-stroke sequelae, and potentially shortens the timeline for returning to athletic activities (Li et al., 2021). Furthermore, the reduction in hemiparesis, hemiplegia, and speech difficulties among the treated athletes highlights the specific benefits of these TCM treatments in addressing the complex needs of stroke recovery. The favorable changes observed in hemorheological properties, although not statistically significant, indicate a trend that warrants further investigation, as these could have implications for reducing long-term vascular risks and improving overall circulatory health. The low incidence of adverse reactions observed in the study group underscores the safety and tolerability of combining acupuncture with Buyang Huanwu and Siwei Jianbu Decoctions, making it a viable option for athletes concerned about the side effects of more conventional pharmacological treatments. This aspect is particularly important in sports medicine, where the athlete's long-term health is a paramount concern. Integrating acupuncture and specific TCM decoctions into the post-stroke rehabilitation protocol for athletes provides a compelling alternative to traditional recovery models. These findings advocate for broader adoption and deeper investigation into such integrative approaches, particularly within the sports community, to optimize recovery, enhance performance, and maintain the long-term health of athletes. Future studies should aim to expand on these results with larger sample sizes and longer follow-up periods to fully establish the efficacy and safety of these treatments in the athletic population.

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