Mechanism and Clinical Effect of Warming Acupuncture Combined with Dissipate Blood Stasis and Dredge Vein Decoction in the Treatment of Limb Spasm after Stroke in the Elderly

Geng Yining[1,2]

[1]Department of Acupuncture and Moxibustion, Hainan General Hospital, Haikou, Hainan, China

[2]Department of Acupuncture and Moxibustion, Hainan Hospital Affiliated to Hainan Medical University, Haikou, Hainan, China

Keywords: Warm acupuncture, Dissipate blood stasis and dredge vein decoction, Elderly patients, Limb spasm after stroke

Abstract: Objective: To explore the mechanism and clinical effect of warming acupuncture combined with dissipate blood stasis and dredge vein decoction in the treatment of limb spasm after stroke in the elderly. Methods: from January 2017 to October 2018, 79 patients with spasticity after stroke were divided into study group (34 cases) and control group (35 cases). The control group was given routine treatment and rehabilitation training in internal medicine of stroke, and the study group was treated with warming acupuncture combined with dissipate blood stasis and dredge vein decoction on the basis of this treatment. The treatment time of both groups was 4 weeks. Observed the clinical effect of the two groups; The quality of life and the severity of the disease were recorded before and after treatment; Enzyme linked immunosorbent assay (ELISA) was used to detect glycine (Gly) and gamma aminobutyric acid (GABA) in patients' serum, and the difference of expression level between them was compared. Results: the clinical efficacy of the study group (91.18%) was significantly higher than that of the control group (68.57%) (χ 2 = 7.36, P = 0.01); After treatment, the disease severity indexes such as CSI, modified Ashworth score and quality of life indexes such as Bi, QOL-BREF score decreased in both groups, and the level of Gly and GABA in the study group was lower than that in the control group (P < 0.01); the level of Gly and GABA in both groups was lower than that in the control group (P < 0.01). Conclusion: warming acupuncture combined with dissipate blood stasis and dredge vein decoction can significantly reduce the degree of limb spasm in elderly stroke patients, promote the recovery of nerve function and improve the quality of life, and regulate the expression of Gly and GABA, which is worthy of clinical application.

1. Introduction

Stroke is one of the common diseases in neurology department, the incidence rate is now 120~180 cases/100,000 in our country, because its condition is critical and dangerous, complex and changeable, the prognosis is extremely poor, has become the first disability and the third cause of death in the elderly population of our country. In recent years, with the continuous development and improvement of traditional Chinese medicine technology, the integrated traditional Chinese and western medicine model has shown some advantages in the treatment of limb spasm after stroke, among which warm acupuncture combined with exercise therapy and traditional Chinese medicine combined exercise therapy have achieved good results in the treatment of sequelae or complications of related neurological diseases, but the combination of warm acupuncture with traditional Chinese medicine for the treatment of this disease has been rarely reported. Base The aim of this study was to explore the therapeutic effect and possible mechanism of senile post-stroke limb spasm with warm acupuncture combined with dissipate blood stasis and dredge vein decoction in order to provide reference for clinical practice.

  DOI: 10.25236/acete.2019.064

2. Information and Methods

2.1 General Information

From January 2017 to October 2018, 79 cases of spasticity after stroke were collected. All the patients met the diagnostic criteria of stroke in key points of diagnosis of various cerebrovascular diseases [6], and were confirmed by imaging examination, and met the diagnostic criteria of limb spasm formulated by China Rehabilitation Medical Association [7]; Inclusion criteria: ① age > 60 years old; ② stable vital signs, clear consciousness and cooperation in examination; ③ no combined damage of other systems; ④ no other organic brain lesions such as brain tumor or cerebral hemorrhage; ⑤ informed consent of participants and their families. Exclusion criteria: ① those who are allergic to the drugs in this study; ② those who have received other muscle relaxants or sedatives three months before the treatment; ③ those who have coagulation dysfunction or bleeding tendency; ④ those who have dysfunction of heart, liver, kidney and other important organs and cannot tolerate acupuncture. According to the order of admission treatment, they were divided into study group (34 cases) and control group (35 cases). In the study group, there were 15 males and 19 females, aged 61-82 years, with an average age of (71.61 ± 8.69) years, a course of 1-12 months, with an average course of (5.28 ± 1.46) months, stroke type: Ischemic in 22 cases, hemorrhagic in 12 cases; Complications: diabetes 11 cases, coronary heart disease 9 cases, hypertension 14 cases. In the control group, there were 16 males and 19 females, aged 62-80 years, with an average age of (70.91 ± 8.43) years; The average course of disease was (5.30 ± 1.62) months (1-13 months); stroke type: ischemic 21 cases, hemorrhagic 14 cases; complications: diabetes 9 cases, coronary heart disease 10 cases, hypertension 16 cases. There was no significant difference between the two groups ($P > 0.05$), so it was comparable.

2.2 Methods

After admission, the two groups were given routine treatment such as antiplatelet aggregation, nutrition of brain nerves, dehydration and intracranial pressure reduction, and were given Bobath therapy [7] for rehabilitation training. On this basis, the research group introduced warming acupuncture combined with dissipate blood stasis and dredge vein decoction, as follows: ① Warm acupuncture and Moxibustion: the points of Xuehai, Chengfu, Fenglong, Zusanli and Sanyinjiao were selected for the patients with muscle spasm of the lower limbs, Quchi, shoula, Hegu and Waiguan were selected for the patients with muscle spasm of the upper limbs; Take the sitting position of the patient, sterilize the local skin, then use 28 1.5-inch filiform needle to insert the needle directly, keep the needle after getting air, and insert a small hole on one end of the 2 cm mugwort strip, which is about 1.5-2 cm long, After ignition, the patient's tolerance shall prevail, keep the needle for 30 minutes, moxibustion at each point for 2 Zhuang, the weak can not keep the needle, once a day, five times for a course of treatment, a course of rest for 2 days after a course of treatment, a total of 4 courses of treatment. ② Dissipate blood stasis and dredge vein decoction: the ingredients are Xuanshen, Huangqi, deer horn tablet, raw Rehmannia 20 g each, chenchencao 15 g each, earthworm, white peony, Chuanxiong 10 g each, scorpion 3 g. With symptoms: if the phlegm is turbid and the tongue coating is thick and greasy, 10 g of Pinellia ternate and 10 g of tangerine peel can be added respectively; if the blood stasis blocks the collaterals, the tongue is dull or there are petechiae, 3 g of Panax notoginseng can be taken. Add 300ml of the above medicine into the decoction, one dose a day, and take it 2 hours after eating in the morning and evening. The treatment time of both groups was 4 weeks.

2.3 Observation and Evaluation of Curative Effect

① Before and 4 weeks after treatment, Barthel Index (BI) and QOL-BREF scale were used to evaluate the quality of life of the patients, and spasticity index (CSI) and modified Ashworth scale were used to evaluate the severity of the patients. The evaluation was completed by a rehabilitation physician with more than 5 years of clinical work experience.

② 5ml of fasting peripheral blood was collected before and after treatment, incubated at 37 ℃ for 20min, centrifuged at 3000 revolutions per minute for 10min, and serum was separated. The serum of patients was detected for Gly and GABA by enzyme-linked immunosorbent assay.

③ According to the curative effect standard in the standard of diagnosis and curative effect evaluation of apoplexy, After treatment, the patients who improved Ashworth grade to improve grade 2 or above, and whose clinical symptoms such as sensory disorder and motor dysfunction basically disappeared were considered as effective; After treatment, the Ashworth grade was improved by 1 grade, and all the patients with improved symptoms were considered as effective; The patients with no significant improvement in symptoms and Ashworth grade after treatment were considered invalid. Total effective = significant + effective.

2.4 Statistical Methods

SPSS22.0 software was used to analyze, the measurement data were expressed as (±s), the intergroup comparison was used t test; the counting data were expressed as%, the comparison of the rate was used (2 test), and the difference of P <0.05 suggested that the difference was statistically significant.

3. Results

3.1 Quality of Life Comparison between the Two Groups

There was no significant difference in BI and QOL-BREF scores between the two groups before treatment (P >0.05); after treatment, the BI and QOL-BREF scores of the two groups increased, and the study group had higher levels than the control group (P <0.01). See table 1.

Table 1 Comparison of Quality of Life between the Two Groups ($\bar{x}$±s, Component)

Group	BI Grade		QOL-BREF Grade	
	Before treatment	After treatment	Before treatment	After treatment
Study Group (n=34)	47.83±6.72	83.39±8.56	43.12±4.48	61.87±6.59
Control group(n=35)	46.91±6.62	70.53±6.81	42.77±4.32	52.21±5.53
t	0.57	6.89	0.33	6.59
P	0.57	0.00	0.74	0.00

3.2 Comparison of Severity of Illness between the Two Groups

There was no significant difference in CSI and modified Ashworth scores between the two groups before treatment (p >0.05). After treatment, the CSI and modified Ashworth scores of the two groups were decreased, and the study group was lower than the control group (p <0.01). See table 2.

Table 2 Comparison of Severity of Illness between the Two Groups ($\bar{x}$±s, Component)

Group	CSI Grade		Improved Ashworth score	
	Before treatment	After treatment	Before treatment	After treatment
Study Group (n=34)	12.29±2.54	6.65±1.09	3.48±1.38	0.84±0.51
Control group(n=35)	12.46±2.69	9.12±2.28	3.66±1.49	1.70±0.96
t	0.27	5.77	0.52	4.67
P	0.79	0.00	0.60	0.00

Comparison of two groups of Gly and GABA

There was no significant difference in Gly and GABA between the two groups before treatment (P >0.05); after treatment, Gly and GABA in the two groups increased, and the level of the study group was higher than that of the control group (P <0.01). See table 3.

Table 3 Comparison of Gly and Gaba in Two Groups. ($\bar{x}$±s,)

Group	Gly (μmol/L)		GABA(μg/L)	
	Before treatment	After treatment	Before treatment	After treatment
Study Group (n=34)	226.31±25.72	703.48±68.76	6.98±2.59	15.45±5.29

Control group(n=35)	224.87±25.82	416.30±42.32	6.67±2.77	10.79±4.52
t	0.23	20.82	0.48	3.93
P	0.82	0.00	0.63	0.00

3.3 Comparison of Clinical Effects between the Two Groups

The total effective rate was 68.57% in the control group and 91.18% in the study group. (χ^2=7.36, *P*=0.01).See table 4.

Table 4 Comparison of Clinical Effects between the Two Groups [n(%)]

Group	Significant effect	General effect	Invalid	Total effective rate (%)
Study Group (n=34)	12(35.30)	19(55.88)	3(8.82)	31(91.18)
control group(n=35)	6(17.14)	18(51.43)	11(31.43)	24(68.57)
χ^2	-			7.36
P	-			0.01

4. Discussion

In recent years, with the speed of aging in china, the incidence of stroke is obviously increasing, and most stroke patients will leave different degrees of limb spasms, the main manifestations of which are increased muscle tension, decreased motor coordination, tendon reflex active or hyperactive, resulting in severe movement restriction and pain can seriously affect the ability of self-care. Although physical therapy alone has certain curative effect, it has the characteristics of passivity and limitation, and the overall therapeutic effect, especially the improvement of daily activity, so it is imperative to actively seek ways to improve limb spasm after stroke.

Warm acupuncture not only has the function of warming the meridian of ordinary acupuncture and moxibustion, but also can use the warm effect of moxibustion to stimulate the human meridian, increase the movement of local qi and blood in the pathological changes, give full play to the function of dredging the meridian, clearing heat and relieving the table, regulating qi and eliminating phlegm, so as to achieve the purpose of “general principle is not painful “. This study selects each point to strengthen the local blood circulation, forms to the central nervous system stimulation and the promotion function, in order to promote the dissolution absorbs the cerebral hemorrhage spot blood clot, thus reduces the spasmodic hypertonia tension, exerts the enhancement its movement function, enhances the life self-care ability and so on function. All the specimens were applied, qi and yin were supplemented, and the circulation of blood was carried out, resulting in yang soft yin and sufficient qi and blood The veins are nourished. Compared with conventional acupuncture, warm acupuncture not only has better effect than rehabilitation training and medication alone, but also has better long-term effect. In the aspects of improving the daily life ability of stroke sequelae patients, promoting the recovery of nerve function and improving limb motor function, the effect of dissipate blood stasis and dredge vein decoction combined with acupuncture and moxibustion is better than that of acupuncture combined with conventional drugs.

GABA is an important inhibitory neurotransmitter, which is involved in various metabolic activities, which can activate G protein, downregulate presynaptic membrane calcium permeability and reduce calcium influx level; Gly also belongs to inhibitory neurotransmitter, which plays an important role in the transmission of nerve signals and participates in various physiological and pathological responses, and its main mechanism is to bind to the postsynaptic membrane GlyR, which stimulates the flow of chloride ions across the membrane to play a postsynaptic inhibitory effect. This study found that the treatment regimen significantly upregulates gly, gaba expression, thereby alleviating the degree of limb spasm in patients, which may be one of the important mechanisms for the better clinical efficacy of the regimen. However, because the sample size of this experiment is relatively small, and the long-term effect of the treatment plan is not observed, it is still necessary to further demonstrate and analyze the specific mechanism, effectiveness and safety of the scheme through more prospective, large sample and multi-center long-term clinical studies.

References

[1] Gao Haisong, Li Yanwei. (2018). A randomized controlled study of antispasmodic acupuncture combined with Yangyin Tongbi Jieji decoction in the treatment of poststroke limb spastic hemiplegia. Shaanxi TCM, vol. 14, no. 2, pp. 265-267.

[2] Opheim A, Danielsson A, Alt M M, et al. (2015). Early prediction of long-term upper limb spasticity after stroke: Part of the SALGOT study. Neurology, vol. 85, no. 10, pp. 873.

[3] Zhang Jian, Li Yi, Wang Xuemei, et al. (2017). Clinical efficacy of Musiao combined with routine rehabilitation training in the treatment of limb spasm after stroke. Journal of Clinical Hospitals, vol. 14, no. 6, pp. 48-50.