

# *Research Progress on Acupuncture Treatment of Shoulder Hand Syndrome after Stroke*

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**Abstract:** Based on the relevant literature on acupuncture treatment for shoulder hand syndrome and stroke in the past three years, the treatment plans for shoulder hand syndrome were classified and organized according to acupuncture and combination therapy. It was found that in the past three years, acupuncture treatment for SHS mostly used acupuncture combined with other acupuncture or therapies, with a significant reduction in single acupuncture. Reasonable use of different traditional Chinese medicine therapies combined with treatment can improve clinical efficacy in the treatment of shoulder hand syndrome after stroke.

## 1. Introduction

Shoulder hand syndrome (SHS), also known as reflex sympathetic dystrophy (RSD), is mainly characterized by local pain, limited upper limb movement with swelling, abnormal skin temperature, and skin changes. SHS is a common complication of stroke hemiplegic patients and an important factor affecting the recovery of upper limb motor function in patients [1,2]. In clinical practice, SHS usually occurs 1 to 6 months after a cerebrovascular accident, which happens to be the period of maximum rehabilitation potential [3]. If the intervention measures are not timely and reasonable, it may prolong the recovery time of SHS patients and even cause permanent deformities of the shoulders, upper limbs, and fingers [4]. At present, the reported incidence rate of SHS in China is 12.5 to 74.1% [5]. This seriously affects the quality of life of a large number of stroke patients. Modern medicine has not yet elucidated the pathogenesis of post-stroke SHS. This may be related to reflex sympathetic nerve injury leading to a series of inflammation and autoimmune reactions, as well as the production of abnormal cytokines [6]. Acupuncture and moxibustion is an important part of complementary and alternative medicine. It has unique advantages in the treatment of shoulder hand syndrome. It can maintain the excitation and inhibition process of peripheral and central nerves, promote local blood circulation, and alleviate limb pain caused by ischemia and hypoxia [7]. In this paper, the acupuncture and moxibustion treatment of SHS after stroke in recent 3 years is summarized as follows.

## **2. Clinical study on acupuncture and moxibustion treatment of SHS**

### **2.1. Simple use of acupuncture and moxibustion to treat SHS**

#### **2.1.1. Ordinary acupuncture**

Zhao Zhonghua [8] selected 98 stroke patients with shoulder hand syndrome as the study subjects and randomly divided into a study group (49 cases, treated with acupuncture combined with bilateral upper limb training) and a control group (49 cases, treated with bilateral upper limb training) using envelope randomization. After treatment, the therapeutic effect of the study group was 95.92%, which was significantly higher than that of the control group (69.39%), and the difference was statistically significant ( $P < 0.05$ ). This indicates that acupuncture can effectively treat stroke patients with shoulder hand syndrome, effectively alleviate pain and swelling, improve daily living ability and quality of life, with minimal adverse reactions and good safety.

#### **2.1.2. Wrist ankle needle**

Zhang Nan [9] randomly divided 60 patients with stage I shoulder hand syndrome after ischemic stroke into a treatment group and a control group ( $n=30$  in each group) using a 1:1 random number table method. The treatment group received wrist ankle acupuncture (upper 4, upper 5, upper 6) combined with conventional acupuncture treatment, while the control group received conventional acupuncture treatment. The wrist ankle acupuncture was treated once every other day; Routine acupuncture treatment once a day, 6 times a week; The single treatment time for both acupuncture schemes is 30 minutes, and the total treatment time is 4 weeks. There was a statistically significant difference ( $P < 0.05$ ) in the VAS score between groups, indicating that the combination of wrist ankle acupuncture and conventional acupuncture has a significant therapeutic effect and is safe and reliable. Compared with conventional acupuncture treatment, it has an advantage in improving pain in stage I patients with shoulder hand syndrome after ischemic stroke.

#### **2.1.3. Warm needle**

Wang Donghui [10] used the random number envelope method, divided 60 patients with post-stroke shoulder hand syndrome into an observation group (warm needle therapy) and a control group (conventional acupuncture therapy). The total effective rate of the treatment group after treatment was 86.67%, while the total effective rate of the control group was 76.67%. There was a significant difference between the two groups ( $P < 0.05$ ). The results showed that compared with simple acupuncture, warm needle therapy had a more significant therapeutic effect on post-stroke shoulder hand syndrome in reducing pain, reducing edema, and improving limb mobility.

#### **2.1.4. Filiform needle**

Zhao Mengting [11] divided 60 patients with post-stroke shoulder hand syndrome (SHS) stage I into a treatment group (treated with moxibustion) and a control group (treated with regular acupuncture), with 30 cases in each group. The pain intensity score (VAS), edema degree score, and shoulder hand syndrome evaluation scale scores before and after treatment were recorded in both groups. The results showed that moxibustion has a positive effect on reducing pain and swelling in SHS stage I patients, and moxibustion can shorten the course of pain and swelling in SHS patients, which is helpful for their rehabilitation treatment and can guide clinical treatment.

### 2.1.5. Electroacupuncture

Yang Hua [12] randomly divided 88 patients with post-stroke shoulder hand syndrome into a control group and an observation group, with 44 cases in each group. The control group received Western medicine rehabilitation and traditional acupuncture treatment, while the observation group received electroacupuncture treatment at the meridian node in addition to the control group. The changes in Fugl Meyer score, VAS score, and SS-QOL score before and after treatment were observed in both groups, and the therapeutic effects of the two groups were compared and analyzed. Resultsly, after treatment, the Fugl Meyer and SS-QOL scores in both groups were significantly improved ( $P<0.05$ ). And the observation group was significantly higher than the control group ( $P<0.05$ ); The VAS scores of both groups decreased significantly ( $P<0.05$ ), and the observation group was significantly lower than the control group ( $P<0.05$ ). The total effective rate of the observation group was 93.1% (41/44), significantly higher than the control group's 79.5% (35/44), and the difference was statistically significant ( $P<0.05$ ).

### 2.1.6. Miao Sting Giant Sting Technique

Li Ranwei [12] divided 62 patients with post-stroke shoulder hand syndrome into a control group and an observation group. On the basis of routine internal medicine treatment and rehabilitation manual treatment, the control group was treated with routine acupuncture, while the observation group was treated with Miao Zhi Ju acupuncture. After 4 weeks of continuous treatment, the total effective rate of the observation group was 90.32% (28/31), and the total effective rate of the control group was 67.74% (21/31). The observation group was higher than the control group ( $P<0.05$ ). The VAS score and hand edema grading score of the two groups were higher after treatment. The FMA score and ADL score were significantly improved compared to before treatment in this group ( $P<0.05$ ), and the observation group was better than the control group ( $P<0.05$ ). The results showed that the Miao prick giant needling method was effective in improving pain, edema, and limb function in patients with shoulder hand syndrome after stroke.

### 2.1.7. Tiao Du Needle Technique

Su Meng [14] divided 60 patients with post-stroke shoulder hand syndrome into two groups, both of which received basic treatment (using conventional neurology drugs and basic rehabilitation treatment for stroke). On this basis, the treatment group was treated with a combination of regulating and regulating acupuncture techniques (Shuigou, Shenting, Baihui, Fengfu, Dazhui, Zhiyang, Mingmen, Yaoyangguan, affected shoulder, hand Sanli, Quchi, and Hegu). The control group was treated with conventional acupuncture (on the affected side of the shoulder, three li of the hand, Quchi, Waiguan, and Hegu) for 4 weeks. After treatment, the effective rates of the treatment group and the control group were 93.33% and 86.67%, respectively. The difference between the two groups was statistically significant ( $P<0.05$ ), and the treatment group had a higher effective rate than the control group.

### 2.1.8. Qi pricking method

Ally [15] randomly divided 60 patients with post-stroke shoulder hand syndrome into a control group and a treatment group of 30 cases each using a random number table method. The control group only received conventional acupuncture treatment, while the treatment group received simultaneous acupuncture treatment on the shoulder, arm, hand, and outer joints in addition to conventional acupuncture treatment. At the same time, both groups of patients received routine diagnosis and treatment plans in neurology. After treatment, The VAS pain score, edema degree score, daily living

ability score, and upper limb FMA score of the Qi acupuncture method combined with the conventional acupuncture group and the conventional acupuncture group were improved compared with before treatment ( $P<0.05$ ). The independent t-test showed that the therapeutic effect of the treatment group was significantly better than that of the control group ( $P<0.05$ ). The total effective rate of the Qi acupuncture method combined with the conventional acupuncture group was 93.33%, while that of the conventional acupuncture group was 73.33%. The rank sum test showed a significant difference between the two groups ( $P<0.05$ ).

### **2.1.9. Pneumatic acupuncture**

Zhu Yan et al. [16] randomly divided 60 patients with shoulder hand syndrome after cerebral infarction into a control group and a treatment group. The control group received routine acupuncture at Zhongping acupoint, while the treatment group received dynamic acupuncture. After treatment, the total effective rate of the treatment group was 90.00% (27/30), which was better than the control group's 73.33% (22/30) ( $P<0.05$ ). The results showed that the dynamic acupuncture at Zhongping acupoint could improve the clinical efficacy of shoulder hand syndrome after cerebral infarction and improve the levels of Hcy, D-D, and hs CRP.

### **2.1.10. Meridian Recovery Sting Method**

Tian [17] divided 74 patients with post-stroke shoulder hand syndrome stage I into two groups. Based on routine treatment, rehabilitation training, and routine acupuncture in Western medicine, the traditional acupuncture group selected the affected side of the shoulder, Quchi, Waiguan, Hegu, Shoulder Liao, and Shoulder Zhen acupoints for ordinary acupuncture techniques. The meridian recovery acupuncture group followed the affected side of the hand's three yang and hand's three yin meridians to find the focal point of the knot tendon, and then performed the recovery acupuncture method. The results indicate that both the Jingjin needling group and the traditional needling group have significant therapeutic effects on relieving pain, reducing swelling, and improving the motor function of the affected upper limb in patients with post-stroke shoulder hand syndrome stage I, and the former has a better therapeutic effect. Therefore, it can be seen that Jingjin needling is more effective than traditional needling in treating post-stroke shoulder hand syndrome stage I.

### **2.1.11. Xingnao Kaiqiao Method**

Zhang Gong [18] divided 102 cases into an observation group and a control group, with 51 cases in each group. Both groups were treated with routine intervention and quantitative rehabilitation training. The observation group was additionally treated with Xingnao Kaiqiao method (the main point was Renzhong and Neiguan, and the auxiliary points were Jiquan and Chize. A disposable acupuncture and moxibustion needle with a length of 50 mm and a diameter of 0.30 mm was used for acupuncture, and the Renzhong point was inserted obliquely toward the nasal septum. After getting qi, the heavy bird pecking method was used, and the needle was transported to the point where the eyeball was wet or shed tears; the Jiquan, Neiguan, and Chize points were lifted, inserted, and patched, and the affected side's upper limb twitched three times). The total effective rate was 98.04% in the observation group and 84.31% in the control group, the difference between the two groups was statistically significant ( $P<0.05$ ).

## **2.2. Combination of different acupuncture and moxibustion methods**

### **2.2.1. Acupuncture combined with fire needle**

Zhou Jiyue [19] randomly divided 60 patients with post-stroke shoulder hand syndrome stage I-II into a treatment group and a control group of 30 cases each according to a random number table. The control group was treated with the "Tiao Shen Tong Luo" acupuncture method combined with ordinary acupuncture (the affected side of the shoulder, shoulder Liao, shoulder Zhen, Yang Chi, Hegu, Ba Xie, and Ashi points); On the basis of routine treatment and "regulating the mind and unblocking the meridians" acupuncture, patients in the treatment group were treated with fire acupuncture (at the affected side of the shoulder, shoulder Liao, shoulder Zhen, Yangchi, Hegu, Baxie, and Ashi points). After treatment, the clinical efficacy of the two groups of patients was compared. In the treatment group, 8 cases were cured, 17 cases were significantly improved, 3 cases were effective, and 2 cases were ineffective, with a total effective rate of 94%; In the control group, 3 cases were cured, 7 cases were significantly improved, 15 cases were effective, and 5 cases were ineffective, with a total effective rate of 84%. The clinical efficacy of the two groups of patients was compared, with  $P < 0.05$ , and the difference was statistically significant. It is suggested that compared with the control group, the combination of "Tiao Shen Tong Luo" acupuncture method and fire needle therapy has better clinical efficacy in treating shoulder hand syndrome after stroke.

### **2.2.2. Acupuncture combined with ear acupoint pressing needles**

Zhang Jinling et al. [20] randomly divided 60 patients with SHS stage I after cerebral infarction who met the criteria into a treatment group and a control group using a random number table method, with 30 patients in each group. Both groups of patients received basic neurological treatment and rehabilitation treatment. The control group received conventional acupuncture, while the treatment group received ear acupuncture combined with ear acupuncture on the basis of the control group. The results showed that the clinical efficacy of ear acupuncture combined with acupuncture in treating shoulder hand syndrome stage I after cerebral infarction was better than that of conventional acupuncture, Especially, the combination of ear acupoint pressing and acupuncture therapy is superior to conventional acupuncture therapy in reducing limb pain and swelling, improving the motor function of the affected upper limb, and improving the patient's daily autonomous living ability.

### **2.2.3. Head acupuncture combined with Jin's shoulder three needles**

He Yongqiang [21] divided stage I patients with post-stroke shoulder hand syndrome into an observation group of 40 cases and a control group of 40 cases. The control group was treated with Jin's shoulder three needle therapy, while the observation group was treated with a combination of head acupuncture and Jin's shoulder three needle therapy. After treatment, the combination of head acupuncture and Jin's shoulder three needle therapy significantly improved the upper limb pain symptoms of stage I patients with post-stroke shoulder hand syndrome compared to the simple Jin's shoulder three needle therapy group, and effectively improved the shoulder function of patients.

### **2.2.4. Acupuncture combined with electric heating needle**

Zhang Hanni et al. [22] randomly divided 90 cases into a control group and an observation group, with 45 cases in each group. Both groups were treated with basic drugs and ordinary acupuncture. The observation group was treated with acupuncture at Huiyang Jiuzhen point combined with electric acupuncture. After treatment, the ADL score, pain score, and FMA score of the observation group were better than those of the control group ( $P < 0.05$ ), and the total effective rate of the observation

group was higher than that of the control group ( $P < 0.05$ ).

#### **2.2.5. Dong's unique acupoint acupuncture combined with dynamic qi acupuncture method**

Guan Mingkun et al. [23] divided 60 patients with shoulder and hand syndrome into an observation group and a control group, with 30 cases in each group. The control group received modern rehabilitation treatment mainly based on exercise and conventional occupational therapy, while the observation group received Dong's acupoint acupuncture combined with pneumatic acupuncture on the basis of modern rehabilitation treatment mainly based on exercise and conventional occupational therapy. The pain visual analogue score (VAS) and Fugl Meyer motor function score (FMA) before and after treatment were observed and compared between the two groups, and the treatment effects of the two groups were compared. The results showed that the effective rate of the observation group was 86.67% (26/30), while the effective rate of the control group was 76.67% (23/30). The treatment effect of the observation group was significantly better than that of the control group ( $P < 0.05$ ), and the difference was statistically significant. Dong's Qi acupoint acupuncture combined with dynamic acupuncture has a good therapeutic effect on stage I and II shoulder hand syndrome, which is worth promoting and applying in clinical practice.

#### **2.2.6. Floating needle combined with fire needle**

Liu Zheng et al. [24] randomly divided 62 SHS stage I patients into two groups, with 31 cases in each group. Both groups received routine treatment, while the control group received routine acupuncture treatment once a day; The treatment group received floating needle combined with fire needle therapy, with treatment once every other day; Two groups were treated continuously for 3 weeks. The visual analogue scale (VAS) score, upper limb edema grading score, and simplified Fugl Meyer motor function (FMA) score were observed before and after the first treatment, and after 3 weeks of treatment. Blood samples were taken before and after treatment to detect changes in calcitonin gene related peptide (CGRP) and substance P (SP) levels in both groups, and to analyze the clinical efficacy of two groups. The results indicate that the combination of floating needle and fire needle can regulate the levels of CGRP and SP in the blood in a short period of time, significantly alleviate the pain and edema symptoms of patients with shoulder hand syndrome, further improve the movement function of the affected upper limb, and the clinical efficacy is better than conventional acupuncture.

#### **2.2.7. Water acupuncture combined with local acupuncture**

Zhang Jingjing et al. [25] randomly divided 60 patients with stage I shoulder hand syndrome after ischemic stroke into a control group of 30 cases (treated with local acupuncture alone) and an observation group of 30 cases (treated with water acupuncture in addition to local acupuncture, that is, a mixture of 1 mL of compound betamethasone injection and 5 mL of lidocaine hydrochloride injection at the Tianzong acupoint) using a random number table method. The treatment course was once a week for two weeks. The total course of treatment is 4 weeks. The Barthel index scores (Activities of Daily Living, ADL), Fugl Meyer Assessment (FMA), and Visual Analog Score (VAS) were observed before and after treatment in two groups Scoring and clinical efficacy. The results showed that the clinical observation efficacy of water acupuncture combined with local acupuncture in treating stage I shoulder hand syndrome after ischemic stroke was significantly better than that of simple local acupuncture treatment. There were statistically significant differences in ADL score, FMA score, VAS score, and clinical efficacy between the two groups before and after treatment, with  $P < 0.05$ .

## **2.3. Acupuncture combined with other therapies**

### **2.3.1. Acupuncture, Tuina, and Traditional Chinese Medicine Fumigation and Washing**

Yu Rui [26] divided 90 patients with shoulder hand syndrome after cerebral infarction into two groups. The control group consisted of 45 patients who received routine anti rehabilitation treatment, while the study group consisted of 45 patients who received acupuncture and massage rehabilitation combined with traditional Chinese medicine washing treatment on the basis of the control group. The quality of life scores and therapeutic effects of the two groups were analyzed and compared. The SS-QOL scores of the study group were higher than those of the control group ( $P<0.05$ ); The total effective rate of the research group was higher than that of the conventional group ( $P<0.05$ ).

### **2.3.2. Headpin combined with air pressure wave**

Long Weili et al. [27] randomly divided 90 patients with shoulder hand syndrome complicated by stroke into a control group and a treatment group, with 45 cases in each group. The control group received conventional medication and rehabilitation training. On the basis of treatment in the control group, the treatment group was treated with scalp acupuncture combined with a pressure wave therapy device for 30 days, which is one course of treatment. After one course, the observation results of the two groups were statistically analyzed and compared. The results showed that scalp acupuncture combined with air pressure wave combined with rehabilitation training is an effective method for treating shoulder hand syndrome after stroke, especially in relieving limb swelling, which is more significant than conventional rehabilitation therapy.

### **2.3.3. Acupuncture combined with acupoint injection**

Hu Lele et al. [28] randomly divided 102 patients with post-stroke shoulder hand syndrome into an observation group and a control group, with 51 cases in each group. The control group received routine functional training treatment, while the observation group received acupoint injection combined with acupuncture treatment. After 3 months of treatment, the clinical efficacy of the two groups was compared, and serum levels of calcitonin gene related peptide (CGRP), bradykinin (BK), nitric oxide (NO), and endothelin-1 (ET-1) were measured before and after treatment. The upper limb motor function score (FMA) was evaluated before and after treatment Visual Analog Scale (VAS). The total effective rate of the observation group was higher than that of the control group ( $P<0.05$ ). After treatment, the FMA score, serum CGRP, and NO levels in both groups were significantly higher than before treatment ( $P<0.05$ ), and the observation group was significantly higher than the control group ( $P<0.05$ ); After treatment, the VAS score, serum ET-1, and BK levels in both groups were significantly reduced compared to before treatment ( $P<0.05$ ), while the observation group was significantly lower than the control group ( $P<0.05$ ).

### **2.3.4. Acupuncture combined with new Bobath techniques**

Wang Xiaoguang et al. [29] randomly divided 48 patients with hemiplegia accompanied by shoulder hand syndrome stage I into two groups, with 24 cases in each group. The control group received routine rehabilitation training and pain point acupuncture therapy, while the observation group received a new Bobath technique on the basis of routine rehabilitation training and pain point acupuncture therapy. The results showed that the combination of the new Bobath technique and pain point acupuncture therapy can effectively promote pain relief in hemiplegia accompanied by shoulder hand syndrome stage I patients and is more conducive to the recovery of upper limb function.

### **2.3.5. Acupuncture combined with joint loosening method**

Gulihua et al. [30] randomly divided 100 cases of shoulder hand syndrome after stroke into a treatment group and a control group, with 50 cases in each group. The treatment group was treated with acupuncture and joint loosening. Acupuncture was performed on the hemiplegic side of the shoulder, shoulder, shoulder, blood sea, Zusanli, and Shousanli, followed by traction of the glenoid humeral joint, backward sliding of the glenoid humeral joint, and forward bending and swinging of the glenoid humeral joint, Shoulder and chest wall joint loosening. The control group received routine rehabilitation training with muscle strength as the main treatment for 4 weeks. The results showed that the treatment group was significantly better than the control group in terms of the range of motion and pain score of the affected shoulder joint ( $p < 0.05$ ).

### **2.3.6. Acupuncture combined with traditional Chinese medicine**

Zhang Yi et al. [31] randomly divided 110 patients with phlegm stasis obstructing collaterals type SHSAS into a control group and a combination group, with 55 cases in each group. Both groups of patients were treated with conventional neurology drugs and limb function rehabilitation training. The control group was treated with acupuncture, while the combination group was treated with Shuxue Tongmai Tang on the basis of the control group. The degree of upper limb spasms (Ashworth) and upper limb mobility (FMA) of the two groups of patients before and after treatment were recorded and compared. The shoulder hand syndrome scale (SHSS), visual simulation score (VAS), traditional Chinese medicine syndrome score, high shear whole blood viscosity, low shear whole blood viscosity, plasma viscosity, and platelet aggregation rate were used to compare the treatment effects. The results showed that the combination of Shuxue Tongmai Tang and paraacupuncture had a significant therapeutic effect on SHSAS patients, effectively improving their hemorheology, relieving pain and upper limb spasms, Improve upper limb mobility; Li Wenbin et al. [32] randomly divided 93 cases into a single group of 46 cases and a combination group of 47 cases by using a random number table method. The single group was treated with conventional Western medicine combined with acupuncture, while the combination group was treated with Yishen Jiejing Tang. The results showed that the total effective rate of the combination group was higher than that of the single group ( $P < 0.05$ ).

### **2.3.7. Wrist ankle acupuncture combined with ear acupoint pressing**

Zhang Bei et al. [33] randomly divided 160 patients with post-stroke shoulder hand syndrome into a control group, an ear acupoint group, a wrist ankle acupuncture group, and a combination group, with 40 cases in each group. The control group received basic Western medicine treatment, routine rehabilitation treatment, and routine acupuncture treatment. The ear acupoint group received ear acupoint pressing treatment in addition to the control group, while the wrist ankle acupuncture group received wrist ankle acupuncture treatment in addition to the control group, On the basis of the control group, the combined group received treatment with wrist ankle acupuncture and ear acupoint pressing. The results showed that on the basis of conventional treatment and acupuncture, the combination of wrist ankle acupuncture and ear acupoint pressing can alleviate shoulder pain, improve shoulder joint range of motion and upper limb motor function, and enhance clinical efficacy in the treatment of shoulder hand syndrome after stroke.

### **2.3.8. Acupuncture combined with SGB**

Ma Qi [34] randomly divided 62 patients with stage I shoulder hand syndrome after stroke into a treatment group and a control group, with 31 cases and 31 cases respectively. Both groups received routine basic treatment plans, including good limb placement, exercise therapy, internal medicine



basic treatment, Stella ganglia block (SGB), and other therapies. The control group received routine acupuncture treatment on the basis of basic treatment, with acupoints selected on the affected shoulder, Tianzong, Quchi, and Shousanli Hegu. In the treatment group, the "Awakening Brain and Opening Orifices" group acupoints were given on the basis of the control group. The main acupoints were selected, including Baihui, Shuigou, and Neiguan, as well as the affected shoulder, Tianzong, Quchi, Shousanli, and Hegu. Before and after treatment, the changes in skin sympathetic nerve response (SSR), reference drainage method, visual analogue scoring method (VAS), and upper limb function score (FMA) were compared and analyzed, Conduct a statistical comparative study. The conclusion shows that: (1) Acupuncture of the "Xingnao Kaiqiao" acupoint combined with SGB treatment can significantly reduce sympathetic nerve excitability, alleviate limb swelling and pain, and improve upper limb motor function in patients with post-stroke shoulder hand syndrome. (2) Acupuncture of the "Xingnao Kaiqiao" acupoint combined with SGB treatment and conventional acupuncture combined with SGB treatment can improve clinical symptoms of post-stroke shoulder hand syndrome (such as pain, edema, motor dysfunction, etc). But the therapeutic effect of acupuncture at the "Awakening Brain and Opening Orifices" group points combined with SGB is better than that of conventional acupuncture combined with SGB.

### **2.3.9. Acupuncture combined with meridian puncture and cupping**

Zhi Mengxia et al. [35] divided 60 patients with post-stroke SHS into a treatment group and a control group, with 30 patients in each group. All enrolled patients received routine internal medicine treatment. On this basis, the treatment group received acupuncture through the needle combined with puncture and cupping, while the control group received routine acupuncture combined with puncture and cupping. The results showed that acupuncture through the needle combined with puncture and cupping can alleviate shoulder joint pain, improve shoulder joint function and activity, and alleviate edema in post-stroke SHS patients. Moreover, the combination of needle penetration and cupping can improve the treatment effectiveness of post-stroke SHS patients, which can be further promoted and applied in clinical practice.

## **3. Progress in research**

Based on the progress of acupuncture and moxibustion treatment of stroke SHS in recent three years, the following aspects were found: (1) The scheme design was clear and reasonable, the data sample size was significantly increased, and the possibility of data bias was significantly reduced. (2) Research methodology design and scientific quality control, with the vast majority of literature having accurate sample estimates. (3) Most of the literature uses randomized controlled research and single blind method, but few studies can use double blind method, which may be related to the acupuncture and moxibustion treatment method itself. In general, the quality of the literature has significantly improved, but most of the literature does not mention the qualification evaluation of the therapists, and there is no unified description of the subject technology training.

## **4. Summary and Prospect**

After 2020, acupuncture treatment of SHS alone will be significantly reduced, and most of the studies will use multiple therapies in combination. In particular, the study of different acupuncture and moxibustion methods combined with rehabilitation. Through reading the literature in recent three years, it is now generally recognized that acupuncture and moxibustion+rehabilitation based SHS therapy is used to treat SHS, and a variety of other treatment measures will be implemented in coordination. However, there is less research on the pathogenesis of SHS and the mechanism of

acupuncture and moxibustion treatment of SHS, and the focus of the next step will be put here.

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