

# Research progress of acupuncture treatment of postherpetic neuralgia

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**Abstract:** Postherpetic neuralgia is a symptom characterized by spontaneous pain and sensory pain after skin lesions caused by varicella zoster virus infection. It is one of the most common symptoms in acute herpes zoster after skin lesions are cured. The main characteristics of pain are nighttime onset, and patients often find it difficult to bear the pain resulting in sleep disorders, which is more common in the elderly. Moreover, the disease has a long history, which affects the quality of life of patients, and patients often show symptoms of irritability, insomnia and depression [1]. In recent years, there have been a variety of different treatment plans for postherpetic neuralgia at home and abroad. Chinese medicine is the most common treatment for the pain of postherpetic neuralgia due to its advantages of reliable and effective treatment and relatively mild adverse reactions [2]. Among various TCM treatment plans, acupuncture is also the most acceptable treatment for patients. Because of its good efficacy, good analgesic effect and no adverse reactions, it has become the first choice for many patients with postherpetic neuralgia. This article reviews the progress of acupuncture treatment mechanism and treatment methods for postherpetic neuralgia.

**Keywords:** Acupuncture therapy; Postherpetic neuralgia; Research progress

## 1. Pathogenesis of Western medicine

Postherpetic neuralgia, a chronic pain syndrome after healing from the skin lesions of varicella zoster infection, causes some damage to the body's peripheral and central nervous system, producing an inflammatory response that leads to nerve ischemia, hypoxia and demyelination, thereby losing its protective function and producing abnormal sensations, such as shock like pain. It often occurs at night [3].

## 2. Related methods and adverse reactions of Western medicine treatment

### 2.1 Antidepressant

Amitriptyline, nortriptyline, imipramine and desipramine have minor adverse reactions to antidepressants, the main reactions are anticholinergic reactions, such as dry mouth and constipation, and studies have shown that adverse reactions to antidepressants may be related to cardiac toxicity, including arrhythmia and heart rhythm infarction. For some patients who are prone to drug side effects and cardiotoxic effects, we need to consider other alternative treatments<sup>[4]</sup>.

### 2.2 An anticonvulsant

For example, gabapentine, its side effects are drowsiness and dizziness, and may cause reduced saliva secretion, resulting in thirst, weight gain and local peripheral edema. Such drugs often need to be taken continuously in large quantities, which not only increases the financial burden of patients, but also easily causes liver and kidney function damage or mental and emotional disorders when used for a long time. The overall therapeutic effect is not satisfactory<sup>[4]</sup>.

### **2.3 Drug combination**

Topical 5% lidocaine patch and oral medication are commonly used. In the treatment of herpes zoster, the maximum tolerated dose of Dan therapy in the treatment of neuralgia is still not effective, so the combination of drugs is often used.

### **2.4 Subcutaneous botulinum toxin type A injection**

Research on type A botox shows that the most common side effect of type A botox is local muscle pain after injection, which can be relieved by itself after a few hours. Secondly, repeated use of type A botox can make the body produce anti-toxin antibodies, and after repeated use, the body may develop drug resistance, resulting in a decline in clinical efficacy<sup>[4]</sup>.

## **3. Pathogenesis of TCM**

From the point of view of Chinese medicine, post-herpes zoster neuralgia is mostly due to emotional disorders, liver stagnation, chronic disease fire or liver wind heat, up the head, or liver heat down attack, resulting in pubic and lower extremity disease, the constitution for fire poison is more than good in the trunk, the elderly and infirmities, often due to blood deficiency, liver fire, wet poison accumulation, resulting in Qi and blood obstruction, meridians stasis, not general pain, And the course of disease is longer. In short, the early stage of the disease due to the accumulation of dampness-heat poison, the later stage due to the prolonged illness does not heal, resulting in the real evil and is empty meet, herpes zoster disease first seen in the "disease source Hou on sore disease princes" said, "retort sores, born around the waist, this is also rheumatism-bo blood gas, like the retort belt, because of the name." Therefore, it is also known as the waist fire Dan, also known as the fire sore, snake sore, spider sore, etc<sup>[5]</sup>. Postherpetic neuralgia, mild pain in children, severe in the elderly and infirm, often beyond the scope of the lesion, some elderly patients may appear refractory neuralgia after the lesion disappears, often lasting several months or even longer. Professor Song Hong that the disease due to liver meridian dampness heat, residual toxicity external wind heat caused by a long time more than blood circulation, Qi and blood is not smooth, not general pain<sup>[6]</sup>. Professor Li Jin Yongyong of Hubei University of Traditional Chinese Medicine believes that herpes zoster is caused by dampness-heat accumulation and stagnation, and because it is mainly characterized by skin pain and blisters, it is the main treatment method to clear heat and detoxify and dehumidification, so it is often added with Gentian Xergan Decoction<sup>[7]</sup>.

## **4. Chinese medicine and acupuncture therapy**

### **4.1 Chinese medicine treatment**

The treatment of this disease is mainly to clear the dampness-heat, qi analgesia as the main treatment method in the early stage, mainly to clear the dampness-heat, and in the later stage to promote blood circulation and Tongluo analgesia as the main body, and Fuzheng-dispelling evil and Tongluo analgesia combined with the deficiency, through TCM syndrome differentiation and treatment, for different patients with different symptoms of the corresponding Chinese medicine prescriptions for treatment and syndrome differentiation, such as liver channel stagnation heat type: Using Gentian purging liver decoction, clearing liver fire, detoxifying and relieving pain. Spleen-deficiency and heat-accumulation type: Dehumidifying Weiling Decoction is used to strengthen spleen and relieve dampness, detoxification and pain. Syndrome of Qi stagnation and blood stasis: Use Taohong Siwu decoction to regulate qi and promote blood circulation and relieve pain.

Modern doctors have summarized through clinical practice that commonly used Chinese medicines include angelica, Bupleurum, Radix paeoniae, safflower, Astragalus, licorice, ligustrum, Rhizoma corydalis, Radix Red Paeoniae, peach seeds, Li Yanfeng et al<sup>[8]</sup>. found that bupleurum has anti-depression, anti-fibrosis and protective effects on liver and lung, Ma Yanchun et al<sup>[9]</sup>. found that the main components of angelica include volatile oil, amino acids, etc. Zhang Yanli et al<sup>[10]</sup>. found that extracts from paeoniflora alba, such as paeoniflorin and paeoniflorin, have anti-inflammatory, antidepressant and liver protection effects. Through the above studies, Chinese medicine provides the basis for the multi-target and multi-pathway treatment of postherpetic neuralgia.

#### **4.2 Dermal needle therapy**

Acupuncture for the treatment of postherpetic neuralgia has long been documented in the literature. Taking pain as the Shu in the area of skin lesions and pain and taking a Shi point for treatment can effectively harmonize the operation of local qi and blood, thus achieving the effect of clearing meridians and promoting blood circulation and relieving pain. Fire needle is a special needle heated to the level of white matter and then inserted into the specific injection point of the human body<sup>[11]</sup>. The effect of warming Yang dispelling cold can further strengthen the needle feeling and achieve no pain in general. According to the theory of collaterals, dermatological needles are used to treat the disease, and the theory of falling disease comes from the Huangdi Neijing<sup>[12]</sup>. "Spiritual pivot. Pulse Degree" said: "the meridians are inside, and the branches and horizontal ones are collaterals." The theory of collateral disease believes that the main pathogenesis of postherpetic neuralgia is the occlusion of the complex and the deficiency of the complex. The treatment is mainly based on the principle of dredging the channels and collaterals, and restoring the complex vein to cure stasis and Bi, so as to achieve normal physiological function. "Suwen. Needle Solution" said: "Wancheng and removal" When the cause and pathogenesis of post-herpes zoster neuralgia is vein stasis, you can remove blood stasis by pricking, at the same time, you can combine cupping method to remove blood stasis, heat and lay people, so that the local Qi and blood can be harmonizing vein, dredging meridians, harmonizing Yin and Yang, so as to relieve the patient's nerve pain symptoms. If the patient is suffering from post-herpes zoster neuralgia caused by late Qy-blood loss due to blockage and indissolving, the doctor can use dermatic needles to eliminate blood stasis, reconcile Yin and Yang, and induce heat laymen to remove their evil spirits. At the same time, the local pain can be needled with a single needle, and the local pain can be filled with a single needle supplement method (lifting and inserting or twisting and twisting supplement method, etc.) to make Qy-blood flow, Qy-blood flow, Qy-blood flow, etc. Through replenishing qi and blood and dredging, the meridians Qi line is blood line, restoring the normal operation of Qi and blood, so as to achieve no pain in general. At the same time, we can take the combination of fuzheng and dispelling evil treatment methods, if the patient can not remove the evil of stasis in the body due to positive deficiency, we can first use the acupuncture method, supplementing its positive Qi, so that the positive Qi can resist evil, and the Qi line is blood line. If the patient has no obvious weakness of positive qi, we can use the acupuncture technique of first catharsis and then tonic or first tonic and catharsis at the same time. At the same time, for patients with post-herpes zoster deficiency, we can use the method of supplementing its positive qi to reduce the incidence of post-herpes zoster neuralgia. As the saying goes, "healthy qi can not be done." Where evil gathers together, its qi will be deficient."

Lu Yinfeng believed that elderly patients with post-herpes zoster neuralgia were mostly caused by qi and blood deficiency and meridia stasis<sup>[13]</sup>. Therefore, 60 elderly patients were randomly divided into control group and experimental group. Both groups were given drugs such as mecobalamine and valaciclovir hydrochloride to affect the nerves, and the treatment group was given acupuncture treatment at Jiaji points and Shi points at corresponding stages. Each time, the needle was left for 30 minutes, but blood group seven star acupuncture cupping treatment, the control group was given oral treatment of pregabalin, after three weeks of treatment, the experimental group through acupuncture Jiaji point, A Shi point and acupuncture cupping combined with acupuncture treatment, in terms of analgesia and relief of sleep disorders were significantly better than the control group through Western medicine treatment ( $p < 0.05$ ). Yuan Jun found through research that 80 patients with post-herpes zoster neuralgia were mostly due to the deficiency of positive Qi and the blockage of meridians by poison stasis<sup>[14]</sup>. Therefore, plum flower needle was used to acupuncture corresponding points on the Du vein and local Shi points to supplement positive Qi, remove stasis, promote positive and exorcising, and reconcile Yin and Yang, and at the same time, the filiform needle acupuncture method was used. After four weeks of treatment, it was found that plum blossom needle pricking corresponding acupoints could effectively reduce the level of inflammatory factors, the total effective rate of the treatment group was 88.0%, the total effective rate of the control group was 66.0%, the curative effect of the treatment group was better than that of the control group ( $P < 0.05$ ).

#### **4.3 Comfrey oil walking pot combined with ginger moxibustion triple therapy**

This treatment is a simple and effective traditional Chinese medicine external treatment method, the three play a synergistic role, obviously improve the treatment effect of postherpetic neuralgia, dip in an appropriate amount of comhinia oil on the pain site and the back (the back is mainly the Du vein, Jiaji point and foot sun bladder meridian walking site) evenly apply on the back, not too much, apply an appropriate amount, Hold the bottom of the tank by hand to carry out cupping operation, use flash fire method to leave the tank on the back and the pain site, top-down, search and push the tank<sup>[15]</sup>. Repeat

many times until the skin appears flushed, do not push the skin. The operator should be fast and steady. After walking the tank, lay three layers of gauze on the patient's back, and then lay ginger mud on the gauze (keep the temperature of the mud at about 37 degrees Celsius, the thickness is about two centimeters, the width is greater than the foot sun bladder meridian on both sides), and then put moire on the ginger mud, cut off and light moire timing, after the moire burned out, the patient felt that the temperature of the skin on the back gradually decreased. After the second time, the temperature gradually drops. The doctor should pay attention to the skin condition of the patient to avoid burns. If there is discomfort, the treatment operation should be terminated once a day for 10 consecutive days. Post-herpes zoster pain is called "snake after the cure pain", which belongs to the category of Chinese medicine pain. First, comfrey oil has the effect of cooling blood, promoting blood circulation and detoxifying. Comfrey oil can reduce the symptoms of post-herpes neuralgia through external application, and canister walking can improve local blood circulation. In addition, it can improve the local pain threshold and stimulate the local skin and meridians and acupoints through cupping, thus encouraging the operation of Qi and blood, warming the fur, clearing the channels and collaterals, harmonizing Yin and Yang, and adjusting the physiological functions of zang fu organs. Moxibustion on ginger has the functions of dispersing wind and dispelling cold, warming the meridians and collaterals, promoting Qi and blood circulation, reducing swelling and relieving pain. The organic combination of comgrass oil and ginger moxibustion plays a certain synergistic role in the clinical treatment of postherpetic neuralgia <sup>[15]</sup>.

Peng Xiaohong found through research that postherpetic neuralgia was mostly due to pain caused by inhoness. 60 patients with postherpetic neuralgia were randomly divided into control group and treatment group, with 30 cases in each group. The control group took oral gabapentine capsule, and the treatment group adopted the combination therapy of comfrey oil canning and ginger moxibustion, applying an appropriate amount of comfrey oil to the pain site and back, mainly the artery. Jiaji point, the sun bladder meridian. And by pushing on the back and the pain site, repeatedly causing skin flushing, and then put three layers of gauze on the patient's back and put moxa in the middle of the mud. After burning out, the skin temperature of the patient drops, and then put the mugwort in the mugwort to light until the temperature drops. The total effective rate was 90.00% (27/30) in the treatment group and 73.33% (22/30) in the control group after treatment for 10 days. There was statistical significance between the two groups ( $P < 0.05$ ).

#### **4.4 Electroacupuncture**

The main mechanism of electroacupuncture in the treatment of postherpetic neuralgia is significant, and the main mechanism is to play a therapeutic role by increasing the pain threshold of the body, regulating nerve function, improving blood circulation, repairing tissue damage and inhibiting inflammatory factors <sup>[16]</sup>.

Li Haiyan admitted 64 cases and randomly divided them into the control group and the experimental group<sup>[17]</sup>. The control group took oral pregabalin, and the patients in the treatment group were treated by acupuncture at corresponding Jiaji points, and after acupuncture at Jiaji points, they were treated by electroacupuncture once a day for seven days, and after two courses of treatment. After treatment, VAS score, HAMD score, PSQI score and SP index of the two groups were compared, and the treatment group was superior to the control group, with statistical significance ( $p < 0.05$ ).

#### **4.5 Wrist and ankle acupuncture therapy**

The mechanism of wrist and ankle acupuncture therapy is to divide the body into 12 longitudinal regions corresponding to the 12 spleen regions according to the meridians theory of traditional Chinese medicine. The acupuncture points in each region are located on the corresponding 12 meridian routes, and the symptoms of each region are also corresponding to the symptoms of 12 meridian. Wrist and ankle acupuncture can stimulate the meridians and meridians, promote the operation of meridians' qi and blood, and clear the meridians. Adjust the corresponding functions of zang-fu organs and meridians, so as to achieve the smooth operation of qi and blood, and induce evil to go out of the treatment. Studies have shown that the use of wrist and ankle acupuncture in the acute stage of herpes zoster can effectively reduce the degree of pain and improve mood, and play a preventive role in the occurrence of postherpetic neuralgia. Wan Huaizhen is an external treatment, with obvious safety and painless effects, and avoids adverse reactions caused by drug treatment <sup>[18]</sup>.

Wen Yating [18] randomly divided 60 patients with postherpetic neuralgia into the treatment group

and the control group, with 30 cases in each group. The control group was treated with oral valaciclovir plus wrist and ankle needle, and the treatment group was treated with wrist and ankle needle from 20 o'clock every day to 8 o'clock the next day for seven consecutive days. The pain relief in the treatment group was significantly better than that in the experimental group. The therapeutic effect of the treatment group was better than that of the control group ( $P < 0.05$ ).

#### **4.6 Cupuncture combined with wheat moxibustion**

Acupuncture at Ashi point, Jiaji point and other points can improve the sensory disorders of the ganglia and regulate the physiological function of the sympathetic sense and spinal nerve. Moxibustion has the advantages of dispelling wind and dispelling cold, relaxing muscles and clearing veins, reducing swelling and relieving pain, and moxibustion with grain moxibustion is one of moxibustion methods, which not only has the characteristics of ordinary moxibustion, but also has the advantages of drug force penetration and accurate application point, etc. Moxibustion with grain moxibustion has achieved the functions of warming meridians, promoting qi and blood circulation, promoting health and dispelling evil by burning the pure Yang fire of moxibustion, and can induce heat by permeating drug force and fire. In addition, according to modern pharmacology, moxibustion with wheat grain can dilate local blood vessels through thermal effect, improve local blood circulation and microcirculation, promote metabolism, reduce local inflammatory response, and thus relieve pain. The treatment with acupuncture can achieve twice the result with half the effort. Moreover, acupuncture combined with moxibustion on wheat grains is an external treatment without adverse reactions [19].

Wang Yao [19] randomly divided 47 patients with postherpetic neuralgia into control group and experimental group, 37 cases in each group. Both groups were treated with conventional acupuncture, and the main points were selected as Ashi point, Jiaji point, Zusanli, Hegu, Sanyin jiao, Xuehai, Taichong, etc. The conventional acupuncture treatment group was treated with wheat moxibustion.

### **5. Peroration**

To sum up, postherpetic neuralgia, one of the most common complications of herpes zoster, has the characteristics of stubbornness and recurrence, which is difficult to be treated with western medicine and has many adverse reactions. However, acupuncture treatment can use its external treatment method to stimulate local tissues and organs by using meridians, so as to achieve no pain in general and no adverse reactions. The most commonly used methods are acupuncture, electric acupuncture and fire acupuncture moxibustion, and acupuncture and moxibustion combination (acupuncture and moxibustion combination is a comprehensive therapy, including acupuncture and moxibustion cupping, thunder and fire moxibustion, moxibustion and moxibustion, etc.) Therapy can combine the advantages of acupuncture and moxibustion together to treat diseases, better than a single method of treatment effect, can make meridians unobtrusively. Maintaining the balance of Yin and Yang of the body has obvious advantages in the treatment of diseases and pain relief, and the side effects are relatively low, which is more common in clinical application) [20].

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