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Medicated Thread Moxibustion of Zhuang Medicine for the Treatment of Skin Diseases Recent Advances in Clinical Application

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Abstract: Medicated thread moxibustion of Zhuang medicine is a distinctive external treatment technique of the Zhuang ethnic group. In recent years, it has been widely applied in the treatment of various skin conditions, including eczema, herpes zoster, acne, vitiligo, psoriasis and chronic urticaria. Clinical studies have demonstrated that this therapy is effective and offers advantages such as being minimally invasive and painless, high patient compliance and low cost; it also produces significant synergistic benefits when used in combination with both Chinese and Western medicines. Experimental studies suggest that its mechanism of action involves immunomodulatory pathways, such as the regulation of T-lymphocyte subsets, the reduction of serum IgE levels, and the inhibition of inflammatory cytokine release. However, existing research consists predominantly of small-sample, single-center exploratory studies, lacking unified standardized operating procedures and a quantitative system for evaluating therapeutic efficacy; the specific targets and molecular mechanisms remain unclear. Future research should involve large-scale, multicentre, randomized controlled trials to strengthen the evidence base, clarify the molecular mechanisms and establish standardized protocols, thereby promoting the standardized clinical application of this technique with distinctive ethnic characteristics.

Keywords: Medicated thread moxibustion of Zhuang medicine; Dermatological diseases; External therapies; Immune modulation; Ethnic medicine; Review

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1. Introduction

Medicated thread moxibustion of Zhuang medicine is a traditional external treatment technique unique to the Zhuang ethnic regions of China. It was included in the third batch of the National Intangible Cultural Heritage List in 2011 (Item No.: IX-18) and is a representative and appropriate diagnostic and therapeutic technique within the Zhuang Medicine clinical prevention and treatment system [1]. Guided by the core

theories of Zhuang medicine—namely the 'Three Channels and Two Paths' (the Qi Channel, the Stomach Channel and the Water Channel; the Dragon Path and the Fire Path); "disease caused by toxicity and deficiency"; and "synchronization of the three energies"—this therapy employs ramie thread that has been soaked and processed in a Zhuang medicinal preparation [2]. The end of the thread is ignited, and then the open flame is blown out, creating a bead of fire (spherical sparks) [3]. The thread tip bearing these sparks is then used to rapidly apply moxibustion to specific acupoints, reaction points, or areas of skin lesions on the body surface. Through the dual effects of thermal stimulation and transdermal absorption of medicinal substances, this therapy unblocks the Qi, Stomach and Water channels, regulates the flow of Qi in the Dragon and Fire pathways, and thereby achieves the therapeutic effects of unblocking stagnant Qi and blood, expelling pathogenic toxins from the body surface, and restoring the body's balance of Qi and blood [4].

2. Herpes zoster

Herpes zoster is an infectious skin condition caused by the reactivation of the varicella-zoster virus. It typically presents as clusters of blisters distributed along a single dermatome, often accompanied by severe neuralgia. If not treated promptly, it can easily progress to postherpetic neuralgia, which can cause long-term disruption to patients' daily lives. As a distinctive external treatment technique in Zhuang medicine, thread-point moxibustion can be used on its own to treat shingles, but is also frequently combined with therapies such as cupping and external herbal washes. It has demonstrated outstanding advantages in rapidly relieving pain, promoting the repair of skin lesions and reducing the incidence of post-herpetic neuralgia; the synergistic effect of multiple therapies further enhances clinical efficacy. A randomized controlled trial conducted by Zhang Jing et al. (n = 5) divided 94 patients with acute herpes zoster into two groups: the control group received Zhuang medicine thread-point moxibustion alone, whilst the observation group received retained cupping in addition to thread-point moxibustion [5]. The results showed that the overall response rate in the observation group reached 97.83 percent, significantly higher than the 83.33 percent in the group receiving thread-point moxibustion alone. Furthermore, a comparison between the two groups revealed that combined treatment significantly shortened the entire course of the disease—from the cessation of vesicles to crusting and scab shedding, whilst also significantly reducing patients' VAS pain scores and Pittsburgh Sleep Quality Index scores, lowering serum levels of neurokinin-1, substance P and various inflammatory factors, and increasing levels of the endogenous analgesic β-endorphin, thereby rapidly alleviating neuropathic pain symptoms and improving sleep quality. When acting synergistically, Zhuang medicine thread-point moxibustion utilizes thermal stimulation and medicinal penetration to unblock the flow of Qi along the "Dragon Path" and "Fire Path", harmonizing local stagnation of Qi and blood; cupping, meanwhile, employs negative pressure to traction the local skin and blood vessels, accelerating the elimination of metabolic waste from the affected skin lesions and improving microcirculation. The two approaches complement each other, effectively controlling the progression of symptoms even in the early stages of the disease. Shang Bangli et al selected 60 patients with herpes zoster who met the inclusion criteria for a controlled observational study [6]. The control group received only Zhuang medicine thread-point moxibustion, whilst the observation group received the thread-point moxibustion combined with an external wash formula based on Sanhuang Decoction with modifications. The external wash formula centered on Coptis, Phellodendron and Scutellaria, combined with Lonicera, Forsythia, *Viola yedoensis*,

whilst also incorporating ingredients such as *Sophora flavescens* and *Angelica dahurica* to dispel dampness and alleviate pain. The results showed that the overall response rate in the combined treatment group reached 86.67 percent, significantly higher than the 70.00 percent observed in the group receiving point moxibustion alone. Patients in the combined treatment group experienced a greater reduction in VAS pain scores, and the time taken for vesicles to subside, scabs to form and scabs to fall off was significantly shorter than in the control group. An external wash prepared from modified Sanhuang Decoction acts directly on the affected skin lesions, exerting effects of clearing heat, cooling the blood, purging fire, detoxifying, drying dampness and relieving pain. At the same time, it provides a dry and clean surface for Zhuang medicine thread moxibustion, allowing the warmth and medicinal properties of the thread to act more fully on the affected area, accelerating the elimination of damp-toxin and heat-toxin, and significantly enhancing the overall therapeutic effect. In addition to the aforementioned synergistic external treatment regimen, modern clinical research has also continuously validated the unique value of Zhuang medicine herbal thread moxibustion in treating herpes zoster at the level of its mechanism of action: based on the core tenet of the Zhuang medicine "theory of disease caused by toxin and deficiency", this therapy not only opens the pores through bead-fire moxibustion to direct dampness, heat and fire toxins outwards, thereby expelling toxins from the body, but also utilizes thermal stimulation to invigorate the body's defensive Qi and bolster vital energy, regulating the body's "three channels and two pathways" to restore unimpeded flow, thereby aligning with the core pathogenesis of herpes zoster, wherein "toxic pathogens exploit vulnerabilities to cause disruption and obstruct the skin's channels" [7].

3. Acne

Acne is a chronic inflammatory skin condition affecting the hair follicles and sebaceous glands, known as 'Lèqiū' in Zhuang medicine. It is most common amongst young and middle-aged adults. Western medicine attributes its onset to a combination of factors, including abnormal sex hormone levels, hyperkeratosis of the hair follicle opening, and the proliferation of Propionibacterium acnes. In severe cases, it can lead to the formation of nodules and cysts, and is prone to leaving behind hyperpigmentation or even scarring, causing significant distress to patients' appearance and mental well-being. According to Zhuang medicine theory, this condition is often caused by an excess of yang heat, damp-heat in the spleen and stomach, or latent heat in the lung meridian, combined with an external invasion of wind, dampness, heat and toxin pathogens. Heat, phlegm and blood stasis accumulate in the head and face, obstructing the flow of the 'Three Pathways and Two Channels', ultimately leading to a lack of synchronization between the body's three types of Qi and an imbalance of Qi and blood, thereby triggering the onset of the disease [8]. Zhuang medicine thread-point moxibustion for the treatment of acne can often be administered as a standalone therapy or combined with various other treatments, such as oral Chinese herbal medicine, topical herbal washes, and conventional Western medicines. It is characterized by its simplicity of administration, absence of toxic side effects, and high patient acceptance. The synergistic effect of multiple therapies can further enhance clinical efficacy and reduce the risk of adverse reactions associated with the use of conventional Western medicines. Moxibustion using Zhuang medicine thread-point techniques is widely used in the clinical treatment of acne. During treatment, the Changzi and Meihua acupoints at the site of the skin lesions are typically selected as the core points, and the intervention can be carried out by combining these with corresponding body

and ear acupoints. Mo Zihua treated 250 cases of facial acne in adolescents using Zhuang medicine thread-point moxibustion [9]. By applying moxibustion to the affected areas using the "small plum blossom" or "small triangle" point techniques, the efficacy rate reached 48% after 12 sessions, and the overall efficacy rate reached 100% following 35 days of continuous treatment. Observations revealed that the lesions faded rapidly, with virtually no scarring. Chen Lian et al conducted a controlled study involving 90 acne patients [10]. The treatment group received moxibustion at acupoints including the Plum Blossom point, four points around the navel, and Zusanli on the affected areas, whilst the control group was treated with oral isotretinoin capsules. Ultimately, the overall response rates for the two groups were 86.67% and 84.44% respectively, demonstrating comparable efficacy. However, the Zhuang medicine thread-point moxibustion group experienced none of the adverse reactions associated with vitamin A-based medications, highlighting a distinct advantage in terms of safety. The combination of traditional Chinese medicine and Zhuang medicine thread-point moxibustion is the mainstream approach for the clinical treatment of severe acne; the synergistic effect of internal and external therapies significantly enhances the efficacy of dispersing nodules, removing stasis, clearing heat and draining dampness. Song Ning et al. conducted a clinical observation on difficult-to-treat nodular acne, randomly dividing 62 patients into two groups [11]. The treatment group (32 patients) received an oral Chinese herbal formula containing a high dose of Hekucao (up to 30 g), combined with Zhuang medicine thread-point moxibustion applied to the Changzi, Meihua, Neiguan, Quchi and Xuehai acupoints. The control group of 30 patients was treated with the conventional Western medicine regimen of roxithromycin combined with vitamin A and lipids. After two consecutive treatment courses, the overall response rate in the treatment group reached 93.75 percent, far exceeding the control group's rate of 73.33 percent. Furthermore, following a three-month follow-up, the recurrence rate in the treatment group was only 10.00 percent, significantly lower than the control group's rate of 72.73 percent. This therapy not only demonstrated superior efficacy but also corroborated the unique role of Zhuang medicine's thread-point moxibustion in treating febrile diseases. Li Yanling treated 54 cases of cystic acne using a modified Hai Zao Yu Hu Decoction combined with Zhuang medicine thread-point moxibustion [12]. When compared with a control group of 58 patients receiving oral isotretinoin capsules, the therapeutic efficacy of the two groups was ultimately similar; however, 12 patients in the control group experienced adverse reactions of varying severity, whilst the treatment group combining Zhuang medicine thread-point moxibustion with Chinese herbal medicine experienced no adverse reactions throughout the entire course of treatment. Zeng Jun treated 80 cases of common acne using Shengyang Sanhuo Decoction combined with Zhuang medicine thread-point moxibustion [13]. Moxibustion was applied to acupoints such as Xin Shu and Shen Shu to regulate the Qi and blood of the zang-fu organs; the observation group achieved a marked efficacy rate of 81.3% and an overall efficacy rate of 95.0%. Lu Xuanlin et al. treated 37 cases of facial acne using the Zhuang medicine formula Qianjin Decoction in combination with Zhuang medicine thread-point moxibustion, focusing on the Meihua acupoint at the affected site to clear local stasis [14]. Following the intervention, the overall response rate reached 97.3%, demonstrating highly significant clinical benefits. The combined use of Zhuang medicine thread-point moxibustion and Western medicine not only enables rapid symptom control through the anti-inflammatory and sebum-regulating effects of Western medicine but also alleviates the toxic side effects caused by Western medicine via Zhuang medicine external treatment techniques, thereby achieving a dual improvement in both efficacy and safety. Chen Honglu et al. conducted a controlled observational study involving 99 patients with common acne; with 54 patients in the treatment group receiving topical

chloramphenicol tincture combined with Zhuang medicine thread-point moxibustion, whilst the control group received only oral erythromycin alongside topical chloramphenicol tincture [15]. Ultimately, the overall response rate in the treatment group reached 88.89 percent, significantly superior to the control group's 72.22 percent, and the duration of treatment was substantially reduced. Shi Wei et al. applied Zhuang medicine thread-point moxibustion to the management of acne-like rashes induced by targeted therapy with EGFR antagonists [16]. Addressing the patients' multiple erythematous pustules on the face and generalized pruritus following targeted therapy, and given that conventional topical application of roxithromycin ointment had yielded poor results, moxibustion was applied primarily to acupoints such as Meihua and the inner ring of the navel. After two weeks of continuous spot moxibustion, the patients' rash and itching symptoms improved markedly, providing a safe and effective specialized intervention for skin-related adverse reactions associated with targeted cancer therapy.

4. Eczema

Eczema is an inflammatory skin condition triggered by a combination of various internal and external factors. Clinically, it is characterized by polymorphic skin lesions, intense itching, a tendency to weep, and a chronic, recurrent course. In China, the prevalence of eczema accounts for approximately 15% to 30% of all outpatient dermatology cases. Conventional Western medicine typically employs oral antihistamines and topical glucocorticoid preparations as the primary treatment regimen. Although short-term efficacy is reasonable, long-term use is prone to inducing various adverse reactions, such as skin atrophy, hyperpigmentation, and rebound symptoms upon discontinuation [17]. Zhuang medicine classifies eczema under the category of "Neng'an Nenglei", holding that its core pathogenesis lies in the invasion of damp-toxin and heat-toxin, which obstruct the flow of the body's "Three Channels and Two Pathways", leading to an imbalance of Qi and blood and thereby triggering the condition. As a distinctive external treatment technique recognized as a National Intangible Cultural Heritage, the Zhuang medicine "Yixian Dianjiu" (acupoint moxibustion) therapy has accumulated extensive practical experience in the clinical management of eczema. Owing to its simplicity of operation, high safety profile and minimal adverse reactions, it has demonstrated outstanding efficacy in treating eczema across different syndromes and affected sites. When combined with other therapies, it further maximizes therapeutic outcomes and effectively reduces the long-term risk of recurrence. Moxibustion at specific acupoints using Zhuang medicine is widely applied in the clinical treatment of eczema. During treatment, practitioners adhere to the classic Zhuang medical principles: "Cold hands, hot back, swelling at Mei; muscle atrophy and pain follow the central meridians; only for itching should one treat the eldest son; for all ailments, moxibustion is applied without straying from the local area", with the primary point being the local "Mei" point in the area of skin lesions, supplemented by core systemic points such as Qu Chi, Shou San Li, Xue Hai and Zu San Li. Simultaneously, moxibustion is modified according to the specific pattern of the condition to address both the symptoms and the root cause. Liu Donghua et al. conducted a randomized controlled trial on 60 young soldiers with acute eczema [18]. The observation group received treatment exclusively with Zhuang medicine thread-point moxibustion, whilst the control group used Perison ointment topically. After four treatment courses, the overall efficacy rate in the observation group reached 93.3 percent, significantly higher than the control group's 76.7 percent, with a cure rate of 73.3 percent, demonstrating highly significant clinical benefits. Wu Liangbing et al. conducted a

controlled observational study involving 135 patients with eczema of different syndromes [19]. Patients with damp-heat, spleen deficiency and blood deficiency syndromes were assigned acupoints based on pattern differentiation, with additional acupoints such as Dazhui (GV14), Waiguan (SI5), Hegu (LI4), Tianshu (ST25), Shuidao (BL28), Sanyinjiao (SP6), Fengchi (GB20), Qihai (CV6) and Pishu (BL20) selected for moxibustion. ultimately achieving an overall response rate of 84.44% in the Zhuang medicine thread-point moxibustion group, far exceeding the 64.44% observed in the control group treated with topical Parison. Mechanism studies further confirmed that this therapy significantly downregulates serum levels of the Th2-type inflammatory cytokine IL-4, exerting anti-inflammatory and anti-allergic effects by modulating immune balance, with therapeutic efficacy superior to conventional topical glucocorticoid regimens. The combination of Zhuang medicine thread-point moxibustion and Zhuang medicine external wash is a commonly used synergistic regimen for damp-heat type eczema; the synergy between the two simultaneously harnesses the transdermal effects of meridian stimulation and the direct efficacy of local medicinal washing, significantly enhancing the clearance of damp-toxin pathogens. Peng Xian et al. conducted a clinical observation involving 138 patients with damp-heat type eczema [20]. The treatment group received an intervention combining Zhuang medicine thread-point moxibustion with Feng's Zhuang medicine external wash formula, which was composed of over ten Zhuang medicinal ingredients including *Polygonum cuspidatum*, *Smilax glabra*, Sancha Ku, Kushen and Difuzi, amongst more than ten other Zhuang medicinal herbs. The control group was treated with topical triamcinolone and econazole cream. After four weeks of continuous treatment, the overall response rate in the treatment group reached 98.53 percent, significantly higher than the 87.88 percent in the control group; the reductions in patients' EASI lesion severity scores and VAS pruritus scores were both markedly superior to those in the conventional Western medicine group. Follow-up data collected six months after the end of the treatment course showed that the recurrence rate in the Zhuang medicine combination therapy group was only 14.93 percent, far lower than the 41.38 percent in the control group. No serious adverse reactions occurred throughout the treatment, demonstrating outstanding safety. For eczema affecting specific areas, Zhuang medicine thread-point moxibustion can also yield satisfactory therapeutic outcomes through appropriately tailored combination regimens. In particular, for perianal eczema—which is characterized by a specific location, severe itching and a tendency to be protracted and recurrent—the combination of Zhuang medicine thread-point moxibustion and autologous blood acupoint injection is a clinically established treatment regimen. Liu Qihui et al. conducted a randomized controlled trial involving 80 patients with perianal eczema [21]. The observation group received Zhuang medicine thread-point moxibustion applied to perianal acupoints such as Changqiang, Huiyin and Chengshan, combined with autologous blood injections into the Quchi and Changfeng acupoints. The control group received conventional topical application of fluocinolone acetonide ointment. After 6 weeks of continuous treatment, the symptom scores for anal itching, changes in rash morphology, reduction in eczema area, and perianal exudation were all significantly lower in the observation group than in the control group; the recovery of anal function and improvement in dermatological quality of life scores were also superior. At the 12-month follow-up, the overall recurrence rate in the treatment group was only 7.50 percent, far lower than the 27.50 percent in the control group. This approach not only avoids the risk of skin atrophy associated with long-term topical use of corticosteroids around the anus but also improves the body's allergic state at its root through the immunomodulatory effects of autologous blood, thereby significantly reducing the long-term probability of recurrence.

5. Warts

Wart-related conditions are benign growths caused by human papillomavirus (HPV) infection of the skin and mucous membranes. Clinically, they can be classified into several categories—including flat warts, common warts, plantar warts, amongst others. They are particularly common among adolescents and not only affect appearance but are also frequently accompanied by discomfort such as tenderness and itching. Furthermore, they are easily transmitted through self-inoculation, leading to widespread lesions. Conventional physical therapies, such as cryotherapy with liquid nitrogen and CO_2 laser treatment, often have limitations including significant pain, high recurrence rates and a tendency to leave scars. In Zhuang medicine, the "thread-point moxibustion" therapy for treating warts is often used in conjunction with regimens such as oral Chinese herbal medicine, Western immunomodulatory drugs and external Zhuang herbal washes. Adhering to the classic Zhuang medical principles of "For itchy conditions, treat the Changzi point" and "Cold hands, hot back, swelling at the Plum Blossom point"—selecting acupoints such as Changzi, Plum Blossom and Sunflower for targeted moxibustion. This method is characterized by ease of administration, minimal pain, high patient acceptance and a low long-term recurrence rate; when combined with other therapies, it can maximize therapeutic efficacy. Liu Zuowen and other researchers randomly divided 62 patients with flat warts into two groups: the control group (30 patients) received only a self-formulated herbal formula for clearing heat, promoting blood circulation and resolving nodules; the treatment group (32 patients) received the same dose of the herbal formula orally, supplemented by Zhuang medicine thread-point moxibustion on acupoints such as Lao Yang, Wai Guan, Qu Chi and Xue Hai [22]. The overall response rate in the treatment group ultimately reached 93.75 percent, significantly higher than the 73.33 percent in the control group; moreover, the average time to cure was markedly shorter than in the control group. After a three-month follow-up, the recurrence rate in the treatment group was only 10.00 percent, far lower than the 72.73 percent in the control group. This confirms that the combination of Zhuang medicine thread-point moxibustion with oral Chinese herbal medicine significantly enhances the therapeutic efficacy and shortens the duration of the disease. Feng Qiao treated 43 cases of multiple flat warts using a regimen combining Zhuang medicine thread-point moxibustion with Western medicine, selecting the acupoints Xingjian, Taichong, Yanglao, Waiguan, Qiuxu and Waian for moxibustion, whilst simultaneously administering intramuscular injections of polycytosine and oral levamisole to modulate the immune response [23]. This was compared with three control groups: treatment with Western medicine alone, Zhuang medicine thread-point moxibustion alone, and CO_2 laser treatment. Ultimately, the combined treatment group achieved an overall response rate of 90.70%, with a shorter time to cure than the other three groups. At a follow-up of 6–12 months, the recurrence rate was only 14.30 percent, far lower than the 40–50 percent recurrence rates observed in the other control groups. The synergistic effect of the two approaches not only utilizes Zhuang medicine thread-point moxibustion to unblock the "Dragon Path" and "Fire Path", harmonize the liver, clear heat and disperse nodules, but also leverages the immune-modulating effects of Western medicine to enhance the body's antiviral capacity, thereby significantly reducing the risk of long-term recurrence. Zhang Yan et al. conducted a clinical study on multiple common warts of the hand, randomly dividing 80 patients into two groups [24]. The treatment group received a regimen combining Zhuang medicine thread-point moxibustion with topical application of recombinant human interferon α-2b gel. The primary acupoints selected were Kuaihua and Changzi, supplemented by Shijia, Quchi, Hegu and Xingjian, with moxibustion administered once daily. whilst the control group received conventional liquid nitrogen cryotherapy combined with topical application of

interferon gel. After three consecutive weeks of treatment, the overall response rate in the treatment group reached 87.5 percent, significantly higher than the 65.0 percent observed in the control group. Furthermore, no significant adverse reactions were reported in the treatment group throughout the course of treatment, whereas all patients in the control group experienced varying degrees of blistering, edema and severe pain following treatment; in particular, patients with lesions around the nails exhibited extremely poor tolerance. This therapy utilizes the thermal and medicinal stimulation of Zhuang medicine's "thread-point moxibustion" to disperse local stagnation of Qi and blood, thereby enhancing the immune function of T-cells and red blood cells. Combined with topical interferon, it exerts a broad-spectrum antiviral effect. The procedure is safe and straightforward, and patient compliance is high. Liu Xiangyu et al. conducted a randomized controlled trial on multiple plantar warts, dividing 105 patients into three groups [25]. Group A received treatment combining Zhuang medicine thread-point moxibustion with foot baths using a Zhuang medicine wart-removal formula, Group B received only foot baths with the Zhuang herbal wart-removal formula, whilst the control group underwent conventional liquid nitrogen cryotherapy. For the Zhuang medicine thread-point moxibustion, the appropriate acupoints—Meihua, Lianhua or Kuihua—were selected based on the size of the skin lesion. The Zhuang herbal wart-removal formula consists of a combination of multiple Zhuang medicinal herbs, including *Smilax glabra*, *Euphorbia humifusa* and *Scutellaria baicalensis*, which work synergistically to clear heat toxins, dispel wind-dampness and unblock the meridians. After 8 weeks of continuous treatment, the overall response rate in the combined therapy group reached 85.7 percent, significantly higher than the 54.5 percent in the group receiving Zhuang herbal therapy alone and the 58.8 percent in the cryotherapy group. Patients' NRS pain scores during treatment were only 3.23 ± 1.21, far lower than the 5.94 ± 1.56 recorded in the liquid nitrogen cryotherapy group. At the three-month post-treatment follow-up, the recurrence rate in the combined therapy group was only 14.2%, significantly lower than that of the other two groups. The two approaches work synergistically: whilst the local thermal and medicinal stimulation from moxibustion with medicinal threads acts directly on the deeper layers of the skin lesions, the sustained transdermal action of the Zhuang herbal foot bath holistically regulates the local immune status, significantly reducing the probability of reactivation of residual subclinical viral infections. This approach maximizes therapeutic efficacy whilst minimizing treatment discomfort and produces no significant adverse reactions, making it particularly suitable for the clinical management of multiple and refractory plantar warts.

6. Vitiligo

In a randomized controlled trial conducted by Lan Yan et al., 65 patients with localized vitiligo in the stable phase were randomly divided into two groups. The experimental group (33 patients) received moxibustion therapy using a medicinal thread, whilst the control group (32 patients) used 0.05% halometasone ointment topically [26]. Both groups received the "Vitiligo Decoction with Modifications" as their baseline treatment. After completing 12 weeks of continuous treatment, the results showed that the overall response rate in the experimental group reached 90.9%, with a rate of "excellent" or "marked" improvement of 75.75%. Although there was no statistically significant difference in the overall response rates between the two groups, the rate of "excellent" or "marked" improvement in the experimental group was significantly higher than that in the control group; following treatment, the degree of pigmentation recovery in the experimental group was markedly higher than in the control group, demonstrating outstanding efficacy in improving pigmentation

recovery. This study also confirmed that during the course of treatment with herbal thread moxibustion, only one patient experienced a mild local irritative reaction characterised by redness, swelling and pain, which resolved spontaneously within 2–3 days without requiring special intervention; the overall adverse reaction rate was only 3.03%, indicating good safety. Subsequent follow-up at 2, 4 and 8 weeks after the end of treatment showed no statistically significant difference in the recurrence rate of lesions among cases with "excellent" or "good" results in either group, and no serious adverse events were observed. Zhang Jiahao's relevant clinical study further validated the unique advantages of this therapy [27]. Sixty-nine patients with stable acral vitiligo were randomized into two groups; both groups received oral administration of the "Vitiligo Decoction with Modifications" formulated by Sichuan Provincial Hospital of Traditional Chinese Medicine as baseline treatment. Thirty-five patients in the treatment group underwent medicinal thread moxibustion on the affected skin lesions, whilst 34 patients in the control group applied 0.1% tacrolimus ointment topically. Statistical results following the 12-week treatment cycle showed that: Given the small sample size and short treatment duration, when combined with oral Chinese herbal medicine, herbal thread point moxibustion was significantly more effective than tacrolimus ointment in reducing the area of skin lesions; there were no statistically significant differences between the two groups in terms of the overall response rate, the rate of marked improvement, or the difference in skin lesion pigmentation, indicating that the conventional treatment effects of the two approaches were comparable. Furthermore, no treatment-related adverse reactions were observed in either group during the study, and no cases of recurrence were noted during follow-up of the responsive cases; the therapeutic effect demonstrated short-term stability and the overall safety profile was high. Further clinical exploration and practical application of this therapy are planned. As part of a comprehensive treatment regimen based on the theoretical framework of Zhuang medicine, medicated thread moxibustion involves applying moxibustion to local skin lesions using the lit end of a medicated thread. By utilizing thermal stimulation and the medicinal properties absorbed by the thread, it acts directly on the vitiligo-affected areas, unblocking the "Dragon Path" and "Fire Paths" in Zhuang medicine, regulating the body's balance of Qi and blood, and helping to improve local microcirculation [28]. It combines the multiple effects of shallow fire-needle puncture, direct moxibustion, and external medicinal treatment. Following the completion of point moxibustion, it can be combined with specialized topical Chinese herbal tinctures tailored to the specific condition. Through continuous local administration and thermal stimulation, this further promotes the body's recovery and harmonization, ultimately leading to the gradual fading of the white patches and achieving effective treatment for vitiligo.

7. Other

In the treatment of cervicitis complicated by persistent high-risk human papillomavirus (HR-HPV) infection, Zhuang medicine's "point moxibustion" follows the principle of "selecting acupoints based on the lesion site". This involves applying firm pressure in the shape of the Kuaihua acupoint to the local cervical lesion, whilst simultaneously performing moxibustion on acupoints throughout the body, including Shen Shu, Zu San Li, Ci Liao, Zhong Liao, Xuehai, whilst combining this with the oral administration of a Zhuang medicine detoxification formula. Compared with the conventional regimen of vaginal administration of anti-HPV β-glucan functional dressings, this approach significantly reduces the incidence of discomfort associated with Zhuang medicine treatment, shortens the healing time for cervical erosion to 28.30 ± 4.39

days, and achieves an overall efficacy rate of 89.7% in the treatment of HPV infection, with an adverse reaction rate of only 17.2%. This approach offers superior efficacy and safety, effectively eradicating the HPV virus, reducing viral load, and rapidly promoting the healing of cervical erosion [29]. In the treatment of chronic urticaria, Zhuang medicine thread-point moxibustion adheres to the Zhuang medical acupoint selection principles of "scratch the eldest son for itchy conditions", "cold hands" and "hot back", selecting acupoints such as Dazhui, Fengchi, Quchi, Shousanli, Hegu, Xuehai and Sanyinjiao, combined with mild moxibustion on the Shenque acupoint. Compared with conventional acupuncture protocols, this approach increases the overall treatment efficacy rate to 92.50 percent, with a recurrence rate of only 10.00 percent at the three-month follow-up, thereby more effectively alleviating patients' urticaria and pruritus symptoms and reducing the likelihood of relapse [30]. Zhou Xiang et al. conducted a controlled study in which 90 outpatients diagnosed with pityriasis rosea were randomly divided into two groups. The 45-patient treatment group received only Zhuang medicine thread-point moxibustion intervention, with primary acupoints selected as Sanyinjiao, Xuehai, Feishu, Quchi and Hegu, with auricular acupoints including Fei, Pi Xia and Shen Jian [31]. Moxibustion was also applied to Ashi points and areas with severe skin lesions. Depending on the extent of the lesions, the "Sunflower Moxibustion" method was flexibly employed to select acupoints around and at the center of the lesions. Treatment was administered once daily, with one course comprising seven days. After two consecutive courses of treatment, the results showed that in the treatment group, 20 patients achieved complete remission and 19 showed marked improvement, with an overall response rate of 86.6 percent, which was significantly higher than the 44.4 percent overall response rate observed in the control group treated with oral acyclovir combined with topical zinc oxide lotion. Statistical analysis revealed a statistically significant difference in treatment efficacy between the two groups.

8. Conclusion

Zhuang medicine's "acupoint moxibustion" is a distinctive external treatment technique rooted in Zhuang folk traditions, the core principles of which are highly consistent with the theories of traditional Chinese moxibustion. As recorded in Chapter of An Introduction to Medicine: "For those with deficiency, moxibustion is applied so that the heat may assist the primordial yang; for those with excess, moxibustion is applied so that pathogenic factors may be dispersed through the heat; for those with cold, moxibustion is applied to restore warmth to the Qi; for those with heat, moxibustion is applied to draw out stagnant heat, in accordance with the principle that 'fire seeks dryness" [32]. Using ramie thread prepared with a compound of Zhuang medicinal herbs as a carrier, and applying instantaneous bead-fire stimulation to acupoints and skin lesions on the body's surface, it unblocks stagnation in the "Dragon Path" and "Fire Path", thereby regulating Qi and eliminating toxins to restore the body's "synchronized three Qi" homeostasis. In recent years, its clinical applications in dermatology have continued to expand [33]. Its core advantages can be summarized in three points: firstly, the treatment experience is pleasant, with no significant pain or scarring, resulting in high patient compliance across all age groups; secondly, it does not rely on corticosteroids or antiviral drugs, achieving therapeutic effects through holistic regulation of the neuro-immune-endocrine systems, and demonstrates significant synergistic benefits when used in combination with traditional Chinese medicine and conventional Western medicines, with stable long-term efficacy[34]. Thirdly, the low cost of consumables and ease of implementation make it well-suited to primary care settings. At the same time, there remain

significant shortcomings in this field: there is insufficient coverage of specialized research into refractory skin conditions such as chronic urticaria and psoriasis vulgaris; existing studies are predominantly small-scale, single-center exploratory trials; there is a lack of unified, standardized operating procedures and a quantitative efficacy evaluation system; the underlying molecular mechanisms of action have not yet been clearly elucidated; and no unified quality control and assessment system has been established for practitioners [35]. Moving forward, it will be necessary to strengthen the evidence base through multicenter, large-sample, randomized controlled trials, to identify the specific targets of action and to promote the standardized adoption of this appropriate technology with distinctive ethnic characteristics [36].

Institutional review board statement

This study was approved by the Ethics Committee of Hangzhou Lin'an District Hospital of Traditional Chinese Medicine (approval number: lazyyllk20220725001) and followed the principles of the Declaration of Helsinki and Good Clinical Practice Guidelines. The study was registered with the China Clinical Trial Registry on September 11, 2023 (registration number: ChiCTR2300075618). The study followed the Uniform Standards of Clinical Trial Reporting guidelines.

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Disclosure statement

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