Scientific Research Publishing

Health, 2025, 17(9), 1021-1031
https://www.scirp.org/journal/health
ISSN Online: 1949-5005
ISSN Print: 1949-4998

Clinical Study on the Effects of Zhuang Medicine Thread Moxibustion on Pain Relief and Skin Lesion Repair in Patients with Herpes Zoster

Wenchong Wang[1], Ningli Wang[2*], Hanqing Tang[1*], Nongying Huang[2], Lin Lin[2], Juan Zhang[3]

[1]Basic Medical College of Youjiang Medical University for Nationalities, Baise, China
[2]Affiliated Hospital of Youjiang Medical University for Nationalities, Baise, China
[3]School of Nursing, Youjiang Medical University for Nationalities, Baise, China
Email: *904086824@qq.com, *phdtanghanqing@163.com

How to cite this paper: Wang, W.C., Wang, N.L., Tang, H.Q., Huang, N.Y., Lin, L. and Zhang, J. (2025) Clinical Study on the Effects of Zhuang Medicine Thread Moxibustion on Pain Relief and Skin Lesion Repair in Patients with Herpes Zoster. *Health*, **17**, 1021-1031.
https://doi.org/10.4236/health.2025.179066

Received: August 7, 2025
Accepted: September 1, 2025
Published: September 4, 2025

Abstract

Background: To evaluate the clinical efficacy of Zhuang medicine medicated thread moxibustion on pain relief and skin lesion repair in patients with herpes zoster. **Methods:** A total of 80 inpatients diagnosed with herpes zoster and treated in the Dermatology and Pain Departments of our hospital from June 2021 to May 2022 were enrolled and randomly divided into two groups: an observation group (n = 40) and a control group (n = 40). Both groups received standard internal medicine therapy and routine nursing care. In addition, the observation group was treated with Zhuang medicine medicated thread moxibustion. The following outcomes were compared between the two groups: time to pain relief, duration of skin lesion healing, time to crust formation, overall clinical efficacy rate, and incidence of postherpetic neuralgia. **Results:** Compared to the control group, the observation group demonstrated significantly shorter durations for pain relief, skin lesion repair, and crust formation, as well as a higher overall clinical efficacy rate (all $P < 0.01$). Moreover, the incidence of PHN was markedly lower in the observation group. **Conclusion:** Zhuang medicine medicated thread moxibustion, when combined with conventional therapy, effectively promotes pain alleviation and skin lesion healing in patients with herpes zoster, enhances overall clinical outcomes, and reduces the risk of postherpetic neuralgia. This treatment approach is safe, well-tolerated, and holds promising clinical application value.

Keywords

Zhuang Medicine Medicated Thread, Herpes Zoster, Moxibustion Therapy, Postherpetic Neuralgia, Clinical Efficacy

1. Introduction

Herpes zoster (HZ), also known as shingles, is a viral neurocutaneous disease caused by the reactivation of latent varicella-zoster virus (VZV) in individuals with compromised immune function. It is characterized by a high incidence rate, severe pain, prolonged disease course, and a significant risk of complications and sequelae [1]. Clinically, HZ typically presents as clustered vesicular eruptions distributed along dermatomes, accompanied by pronounced neuropathic pain. In severe cases, patients may experience intense burning or stabbing pain, which severely impairs quality of life [2]. The incidence and risk of complications are notably higher among middle-aged and elderly individuals. Postherpetic neuralgia (PHN), the most common and refractory complication of HZ, poses significant challenges in clinical management due to its persistent course and limited responsiveness to treatment [3] [4]. Current conventional therapies mainly include antiviral agents, analgesics, corticosteroids, and neurotrophic medications. While these interventions can alleviate acute symptoms to some extent, they have limited efficacy in shortening the disease duration and preventing PHN. Additionally, elderly patients or those with comorbidities often exhibit poor tolerance to pharmacological treatments, underscoring the need for safer and more effective adjunctive therapies [5].

In recent years, traditional medicine has gained increasing attention for its unique advantages in managing viral infections and chronic pain [6]. Among these, Zhuang medicine medicated thread moxibustion is a distinctive external therapy rooted in the traditional medical practices of the Zhuang ethnic group. This technique is based on the Zhuang medical theory of "fire toxin" pathogenesis, emphasizing the synergistic effects of "fire power to expel evil" and "medicinal power to unblock meridians" [7]. The treatment employs a ramie thread approximately 0.7 mm in diameter, impregnated with a variety of Zhuang medicinal herbs such as *Artemisia argyi* (mugwort), *Boswellia*, myrrh, and camphor. During treatment, one end of the medicated thread is ignited until a bead-shaped ember forms, which is then swiftly applied to specific acupoints or affected areas. This generates a combination of high-temperature thermal stimulation and transdermal drug delivery, which activates meridian responses, enhances local circulation, promotes absorption of inflammation, and exerts therapeutic effects such as activating blood flow, unblocking meridians, clearing heat and toxins, alleviating pain, and resolving nodules [8] [9]. Recent clinical and experimental studies suggest that Zhuang medicated thread moxibustion is effective and safe for alleviating zoster-associated neuropathic pain, accelerating skin lesion healing, and reducing the incidence of PHN, offering a valuable complementary approach to comprehensive HZ management [10] [11].

In our hospital's long-term clinical practice, we have integrated Zhuang medicated thread moxibustion with syndrome-based nursing care guided by traditional Chinese medicine (TCM) in the treatment of HZ, and have accumulated substantial clinical experience. Observations indicate that this combined approach signif-

icantly improves pain relief, facilitates skin healing, and lowers the risk of PHN. To systematically evaluate the efficacy and clinical value of this therapy, we conducted a randomized controlled study comparing conventional treatment alone with conventional treatment combined with Zhuang medicated thread moxibustion. Key outcome measures included time to pain relief, duration of skin lesion repair, time to crusting, overall clinical efficacy rate, and incidence of PHN, with the aim of providing evidence-based support for the broader clinical application of this traditional therapy.

2. Methods

2.1. Study Design and Participants

A total of 80 patients diagnosed with HZ and hospitalized in the Department of Dermatology and Pain Management at our hospital between June 2021 and May 2022 were enrolled in this study. Using a random number table method, the patients were randomly assigned to either the observation group or the control group, with 40 cases in each group. In the observation group, there were 25 males and 15 females, aged between 48 and 78 years, with a mean age of 65.5 ± 6.3 years. The average disease duration at the time of admission was 3.0 ± 1.5 days. The anatomical distribution of skin lesions was as follows: thoracic and dorsal regions (n = 13), lumbar and abdominal regions (n = 16), head and neck (n = 6), and gluteal region (n = 5). In the control group, there were 23 males and 17 females, aged between 46 and 76 years, with a mean age of 64.7 ± 5.9 years. The mean disease duration at admission was 3.3 ± 1.2 days. The distribution of lesions in this group included: thoracic and dorsal regions (n = 17), lumbar and abdominal regions (n = 12), head and neck (n = 4), and gluteal region (n = 7). There were no statistically significant differences between the two groups in terms of gender, age, time since onset, or lesion location ($P > 0.05$), indicating good baseline comparability [12]. Due to the nature of the interventions, neither the participants nor the practitioners could be blinded. However, outcome assessors and data analysts were blinded to group allocation to minimize detection and analysis bias. To further reduce potential bias, all assessments were performed by trained personnel following standardized procedures, and any discrepancies in outcome evaluation were resolved through discussion or consultation with a third blinded assessor.

2.2. Diagnostic, Inclusion, and Exclusion Criteria

The diagnostic criteria for HZ in this study included the following: 1) skin lesions characterized by clusters of tense vesicles approximately the size of mung beans with erythematous bases, typically distributed unilaterally in a dermatomal pattern; in severe cases, hemorrhagic or gangrenous lesions may be present, particularly when the head and face are involved, often indicating a more severe condition; 2) prodromal symptoms such as localized tingling or burning sensations usually precede the rash, and some patients may experience systemic symptoms, in-

cluding fever and fatigue; 3) significant pain is a hallmark feature, which may present as persistent severe pain during the acute phase or as postherpetic neuralgia (PHN) after resolution of the rash [13]. Patients were eligible for inclusion if they met all of the following criteria: a confirmed diagnosis of HZ according to the above standards, onset of symptoms within 7 days prior to enrollment, age between 48 and 78 years, and good treatment compliance with the ability to complete both treatment and follow-up. Exclusion criteria included: severe hepatic or renal dysfunction or a history of serious dermatological conditions (e.g., chronic eczema, psoriasis); pregnancy or lactation, psychiatric disorders, or inability to cooperate with treatment; and participation in other clinical trials within the previous month.

2.3. Interventions and Outcome Measures

Patients in the control group received conventional treatment, including antiviral therapy, analgesics, neurotrophic agents, immunomodulators, and supportive care, combined with standardized nursing interventions covering psychological support, nutritional counseling, skin care, and pain management. Specifically, the drug regimen was as follows: antiviral therapy with intravenous acyclovir 5 mg/kg every 12 hours (q12h) diluted in 250 mL of 0.9% sodium chloride, infused over ≥1 hour for 7 consecutive days; analgesics administered according to pain severity, with paracetamol 0.5 g orally three times daily (tid) for mild-to-moderate pain (VAS ≤ 4) and tramadol hydrochloride 50 mg orally two to three times daily (bid-tid) for moderate-to-severe pain (VAS > 4), with a course of 3 - 7 days according to pain relief; neurotrophic agent mecobalamin 0.5 mg intravenously once daily (qd) for 7 days; immunomodulator transfer factor injection 1.6 mg intravenously qd for 7 days; and supportive care including topical calamine lotion to maintain skin hygiene, oral vitamin B1 10 mg tid, and vitamin C 0.2 g tid to promote skin repair. In addition to the aforementioned conventional regimen, patients in the observation group underwent Zhuang medicine medicated thread moxibustion. The procedure involved selection of primary acupoints—Lianhua point (arranged in a lotus-like pattern around and within the lesion area based on the shape and distribution of the rash) and Jieding point (the site with the most concentrated vesicles)—and adjunctive acupoints chosen according to lesion location, including Qimen (LR14), Quchi (LI11), Zusanli (ST36), Yanglingquan (GB34), and Taichong (LR3). Moxibustion was first applied to the Lianhua and Jieding points at the site of initial rash onset, followed by treatment of newly developed lesions, and finally to a 1 cm perimeter around the affected area to create a sealing boundary. Adjunctive points were used based on rash distribution: upper body lesions were treated on the ipsilateral Qimen, Quchi, and Zusanli, while lower body lesions were treated on the ipsilateral Yanglingquan and Taichong. For patients with large areas of involvement, moxibustion was applied in segments, with approximately 1-hour intervals between zones. Treatment was administered once daily, with alternating adjunctive points every other day, and a full treatment

course lasted 7 consecutive days. Outcome measures included: 1) time to pain relief, defined as the duration from treatment initiation to the complete disappearance of spontaneous pain. Pain intensity was assessed using the visual analogue scale (VAS), a 10-cm horizontal line anchored by "0 = no pain" and "10 = worst imaginable pain." Patients marked their current spontaneous pain on the line, and the distance from the "no pain" end (cm) was recorded as the pain score. Scores were recorded once daily by trained evaluators at the same time of day. Complete disappearance of spontaneous pain was defined as VAS = 0 cm, maintained for at least 24 hours without any analgesic intervention, which marked the endpoint of pain relief time. For patients unable to use VAS (e.g., elderly with impaired vision), the numerical rating scale (NRS, 0 - 10) was applied, with the same threshold definition (NRS = 0 for ≥24 hours); 2) time to lesion repair, marked by vesicle drying, resolution of erythema, and return to normal skin appearance; 3) time to crust formation, defined as the number of days until all vesicles formed dry scabs; 4) overall clinical efficacy, classified as cured (complete resolution of pain and rash, skin restored to normal), markedly effective (significant pain relief and ≥70% rash reduction), effective (pain relief with ≥50% rash reduction), and ineffective (no significant pain relief and <20% rash reduction) [14]. Total effective rate was calculated as: (cured + markedly effective + effective)/total number of cases × 100%; and 5) incidence of PHN, defined as persistent pain lasting more than one month after complete lesion healing.

2.4. Nursing Interventions and Patient Management

Before treatment, nursing staff communicated with patients to explain the principles, safety, and possible sensations of Zhuang Medicine thread moxibustion, such as mild burning or tingling, reassuring them that these are normal reactions. Patients were instructed to report any excessive heat, severe pain, or symptoms like palpitations and chest discomfort promptly. During treatment, strict adherence to technical standards was maintained, including controlling the flame type (only using "bead flame"), proper handling of the medicinal thread, and adjusting stimulation intensity based on disease severity [15]. Special care was taken around sensitive areas like the eyes, advising patients to close their eyes to prevent injury. After treatment, patients—especially the elderly with comorbidities—were closely monitored for adverse effects, and analgesics were given after meals with attention to gastrointestinal side effects. Daily care included maintaining a clean, quiet, and well-ventilated environment, advising patients to wear loose cotton clothing, maintain hygiene, avoid scratching lesions, and use positioning strategies to protect affected skin while implementing fall prevention measures [16]. Emotional support and psychological counseling were provided to alleviate pain-related distress, improve treatment compliance, and promote a positive outlook. Dietary guidance encouraged intake of high-protein, vitamin-rich, and easily digestible foods while avoiding spicy or irritating foods to support immune function and prevent recurrence [17].

2.5. PHN Follow-Up and Data Handling

After complete lesion healing, all patients entered a 12-month follow-up period to monitor the occurrence of PHN. Follow-up assessments were scheduled at 1, 3, 6, and 12 months post-healing. Patients were preferentially invited for in-person outpatient visits, during which evaluations were conducted by the same research team physicians. For participants unable to attend in person, telephone or video consultations were arranged to complete pain assessments.

Pain intensity was measured using the same VAS/NRS tools as in the acute phase. PHN was diagnosed if patients reported persistent ipsilateral neuropathic pain after lesion healing with a duration exceeding one month and a score > 0. All follow-up data were independently recorded by two research members and cross-verified. When necessary, information was confirmed with patient family members.

For patients lost to follow-up (unable to be contacted or who declined further participation), the last valid follow-up data were retained and analyzed using an available case analysis approach. The proportion and reasons for loss to follow-up were documented in the results section. Patients without pain but with missing follow-up data were excluded from the denominator when calculating PHN incidence, and sensitivity analyses were performed to assess potential bias.

2.6. Statistical Analysis

All data were analyzed using SPSS version 11.0. Measurement data were expressed as mean ± standard deviation ($\overline{x} \pm s$), and comparisons between groups were performed using independent samples t-tests. Categorical data were analyzed using the chi-square (χ^2) test. A P-value less than 0.05 was considered statistically significant. Based on prior studies reporting a mean difference in pain relief time of ~57 days (SD ~45 days), the required sample size was calculated with $\alpha = 0.05$ and 80% power, yielding ~34 participants per group [18]. Allowing for potential attrition, 40 participants were enrolled per group. Post-hoc power analysis of the primary outcome (pain relief time; Cohen's d ≈ 2.4; $\alpha = 0.05$; n = 40 per group) indicated power > 0.99, confirming adequate study power [19].

3. Results

3.1. Baseline Demographic and Clinical Characteristics

Baseline demographic and clinical characteristics of the observation and control groups are presented in Table 1. There were no statistically significant differences in age, sex distribution, disease duration at admission, or rash location between the two groups (all P > 0.05), indicating good comparability of the study cohorts.

3.2. Comparison of Pain Relief Time, Lesion Repair Time, and Crust Formation Time between the Two Groups

As shown in Table 2, the observation group demonstrated significantly shorter pain relief time, lesion repair time, and crust formation time compared to the control group, with the differences being statistically significant (P < 0.01).

3.3. Comparison of Clinical Efficacy between the Two Groups

As shown in Table 3, the total effective rate in the observation group was 100.0%,

Table 1. Baseline demographics and clinical characteristics of the study participants.

Characteristic	Group		
	OG (n = 40)	CG (n = 40)	P
Age, years	65.5 ± 6.3	64.7 ± 5.9	0.559
Sex, n (%)			
Male	25 (62.5%)	23 (57.5%)	0.648
Female	15 (37.5%)	17 (42.5%)	—
DDA, days	3.0 ± 1.5	3.3 ± 1.2	0.326
Rash location, n (%)			
Thoracic/dorsal	13 (32.5%)	17 (42.5%)	0.607
Lumbar/abdominal	16 (40.0%)	12 (30.0%)	—
Head/neck	6 (15.0%)	4 (10.0%)	—
Gluteal	5 (12.5%)	7 (17.5%)	—

Note: Data are presented as mean ± standard deviation or number (percentage). P-values were calculated using the independent samples t-test for continuous variables and the chi-square test for categorical variables. Abbreviations: OG = Observation Group; CG = Control Group; DDA = Disease Duration at Admission. "—" indicates not applicable.

Table 2. Comparison of pain relief, lesion repair, and crust formation times between OG and CG (mean ± SD, unit: days).

N		Group		
		OG	CG	P
Time to pain relief (d)	40	4.06 ± 0.94	14.30 ± 5.48	<0.01
Time to lesion repair (d)	40	6.35 ± 1.69	14.88 ± 5.46	<0.01
Time to crust formation (d)	40	4.02 ± 0.65	9.13 ± 4.243	<0.01

Note: Compared with the control group, all differences in the observation group were statistically significant ($P < 0.01$). Data are presented as mean ± standard deviation. A P-value < 0.05 was considered statistically significant. Abbreviations: OG = Observation Group; CG = Control Group; d = day(s).

Table 3. Comparison of clinical efficacy between the two groups (n, %).

N		Efficacy outcomes				
		Cured (n, %)	ME (n, %)	E (n, %)	IE (n, %)	TER (%)
OG	40	35	4	1	0	100
CG	40	21	10	2	7	82.5

Note: The total effective rate in the observation group was significantly higher than that in the control group ($\chi^2 = 7.67$, $P < 0.01$). Abbreviations: OG = Observation Group; CG = Control Group; ME = Markedly Effective; E = Effective; IE = Ineffective; TER = Total Effective Rate.

which was significantly higher than 82.5% in the control group. The difference between the two groups was statistically significant according to the chi-square test ($\chi^2 = 7.67$, $P < 0.01$).

3.4. Incidence of Postherpetic Neuralgia between the Two Groups

At the 1-year follow-up, only 1 patient (2.5%) in the observation group developed postherpetic neuralgia (PHN), compared to 7 patients (17.5%) in the control group. The difference between the two groups was statistically significant ($P < 0.05$), indicating a clear advantage of the observation group in reducing the incidence of PHN.

4. Discussion

The results of this study demonstrate that the integration of Zhuang medicine herbal thread moxibustion with conventional therapy significantly shortens pain relief time and accelerates lesion healing and scab formation in patients with HZ. The overall clinical efficacy rate was markedly higher in the combined treatment group compared to the conventional treatment group alone. Furthermore, after a one-year follow-up, the incidence of PHN was significantly reduced in the observation group, indicating that Zhuang medicine herbal thread moxibustion combined with traditional Chinese medicine syndrome differentiation nursing intervention may serve as a promising adjunctive therapy to control acute symptoms, promote tissue repair, and prevent chronic neuropathic pain transformation.

HZ pathogenesis is complex, primarily involving reactivation of latent VZV in the dorsal root ganglia, neuroinflammatory responses, and central sensitization of nociceptive pathways [20]. Although current treatments can partially suppress viral replication and alleviate acute pain, their effectiveness in shortening the disease course and preventing PHN remains limited. Moreover, elderly patients or those with comorbidities often demonstrate poor drug tolerance or compliance. As an important external therapeutic modality of ethnic medicine, Zhuang medicine herbal thread moxibustion offers a multifaceted mechanism that may address these clinical challenges [5].

Mechanistically, the therapeutic effects likely arise from the synergistic action of thermal stimulation ("fire power") and pharmacological properties ("herbal power"). The instantaneous high heat generated during moxibustion enhances local microcirculation, reduces peripheral nerve hypersensitivity, and stimulates immune responses. Herbal components in the thread—such as *Artemisia argyi* (mugwort), *Boswellia* (frankincense), and *Commiphora myrrha* (myrrh)—exert anti-inflammatory, analgesic, and skin regenerative effects, which are potentiated by transdermal delivery under heat. Precise stimulation of targeted acupoints (e.g., Lotus point, Apex point) facilitates the regulation of meridian flow, qi and blood circulation, and organ function, achieving holistic therapeutic benefits [21]. This multidimensional, multi-target mode of action may underlie its efficacy in neuropathic pain relief and PHN prevention.

Recent basic and clinical studies corroborate these findings, showing that herbal thread moxibustion modulates inflammatory cytokines such as TNF-α and IL-6, inhibits central sensitization pathways, and downregulates pain mediators, thereby exerting analgesic and anti-inflammatory effects. Its localized application avoids systemic side effects associated with oral or intravenous medications, minimizing gastrointestinal, hepatic, and renal burden—an advantage especially relevant for elderly patients. In this study, no serious adverse events were observed in the intervention group, supporting its favorable safety profile [22].

Nevertheless, this study has several limitations. First, due to the nature of the intervention, blinding could not be applied to participants and practitioners, which may introduce performance bias. To mitigate this risk, outcome assessors and data analysts were blinded, reducing detection bias and enhancing result reliability. Second, the relatively small sample size and short follow-up period limit the generalizability of our findings to broader patient populations and the assessment of long-term efficacy. Future studies with larger cohorts, extended follow-up, and incorporation of advanced biomedical techniques are warranted to elucidate underlying mechanisms, optimize treatment parameters, and support evidence-based standardization and clinical dissemination of Zhuang medicine herbal thread moxibustion interventions.

In conclusion, Zhuang medicine herbal thread moxibustion combined with TCM syndrome differentiation nursing demonstrates promising clinical efficacy in the comprehensive management of HZ, notably in pain control, lesion recovery, and PHN prevention. Its safety, practicality, and therapeutic potential warrant wider application. Further studies incorporating modern biotechnologies and rigorous evidence-based frameworks are essential to promote its standardization and international acceptance.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Funding

This study was supported by the University-level Project of Youjiang Medical University for Nationalities (Grant No. yy2021sk020) and the Innovation Project of Guangxi Graduate Education (Grant No. YCSW2025612).

Authors' Contributions

Wenchong Wang: Methodology, validation, data curation, and writing—original draft. Hanqing Tang: Methodology and formal analysis. Nongying Huang, Lin Lin, and Juan Zhang: Investigation and resources. Ningli Wang: Conceptualization, writing—review & editing, supervision, project administration, and funding acquisition. The manuscript was approved by all authors.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Patil, A., Goldust, M. and Wollina, U. (2022) Herpes Zoster: A Review of Clinical Manifestations and Management. *Viruses*, **14**, Article 192. https://doi.org/10.3390/v14020192

[2] Kennedy, P.G.E. (2023) The Spectrum of Neurological Manifestations of Varicella-Zoster Virus Reactivation. *Viruses*, **15**, Article 1663. https://doi.org/10.3390/v15081663

[3] Tayyar, R. and Ho, D. (2023) Herpes Simplex Virus and Varicella Zoster Virus Infections in Cancer Patients. *Viruses*, **15**, Article 439. https://doi.org/10.3390/v15020439

[4] Jiang, X., Li, Y., Chen, N., Zhou, M. and He, L. (2023) Corticosteroids for Preventing Postherpetic Neuralgia. *Cochrane Database of Systematic Reviews*, No. 12, CD005582. https://doi.org/10.1002/14651858.cd005582.pub5

[5] Zhang, Z., Liu, X., Suo, L., Zhao, D., Pan, J. and Lu, L. (2023) The Incidence of Herpes Zoster in China: A Meta-Analysis and Evidence Quality Assessment. *Human Vaccines & Immunotherapeutics*, **19**, Article ID: 2228169. https://doi.org/10.1080/21645515.2023.2228169

[6] Pan, Z., Huang, S., Ma, T., Yuan, R., Wang, M., Luo, R., *et al.* (2022) Comparative Effectiveness of External Therapies of Traditional Chinese Medicine and Surgical Treatments in Pain Management of Postherpetic Neuralgia: A Protocol for a Systematic Review and Network Meta-Analysis. *Medicine*, **101**, e31517. https://doi.org/10.1097/md.0000000000031517

[7] Wu, Q., Hu, H., Han, D. and Gao, H. (2021) Efficacy and Safety of Moxibustion for Postherpetic Neuralgia: A Systematic Review and Meta-Analysis. *Frontiers in Neurology*, **12**, Article 676525. https://doi.org/10.3389/fneur.2021.676525

[8] Wang, J., Chen, L., Wang, Z., Fang, X. and Zhen, Y. (2024) Perceptions, Attitudes, Beliefs, and Practices toward Traditional Chinese Medicine Therapies for Herpes Zoster: A Cross-Sectional Study of Healthcare Professionals. *Risk Management and Healthcare Policy*, **17**, 1239-1251. https://doi.org/10.2147/rmhp.s461149

[9] Zhang, Y., Wang, Y., Han, X., Xu, Z., Zhao, X., Yuan, X., *et al.* (2025) Thread Fragrant Moxibustion for a Young Women with Atypical Hand Herpes Zoster: A Case Report. *Medicine*, **104**, e41169. https://doi.org/10.1097/md.0000000000041169

[10] Pu, B., Lu, X., Yu, P., Wang, C., Li, J., Yang, D., *et al.* (2024) Acupoint Herbal Patching for Postherpetic Neuralgia: A Systematic Review and Meta-Analysis. *Medicine*, **103**, e37029. https://doi.org/10.1097/md.0000000000037029

[11] Wang, Z., Sun, Y., Liu, B., Fan, Z., Tian, J. and Lu, T. (2020) External Therapy of Chinese Medicine for Postherpetic Neuralgia: A Protocol for Systematic Review and Meta-Analysis. *Medicine*, **99**, e23270. https://doi.org/10.1097/md.0000000000023270

[12] Li, Z., She, Y., Luo, Z., Liu, Z., Pei, W., Zeng, J., *et al.* (2021) Efficacy of Thermotherapy for Herpes Zoster and Postherpetic Neuralgia: A Protocol for Systemic Review and Meta-Analysis. *Medicine*, **100**, e23823. https://doi.org/10.1097/md.0000000000023823

[13] Lim, D.Z.J., Tey, H.L., Salada, B.M.A., Oon, J.E.L., Seah, E.D., Chandran, N.S., *et al.* (2024) Herpes Zoster and Post-Herpetic Neuralgia—Diagnosis, Treatment, and Vaccination Strategies. *Pathogens*, **13**, Article 596. https://doi.org/10.3390/pathogens13070596

[14] Wang, X., Shang, S., Zhang, E., Dai, Z., Xing, Y., Hu, J., *et al.* (2024) Unraveling Herpes Zoster Vaccine Hesitancy, Acceptance, and Its Predictors: Insights from a Scoping Review. *Public Health Reviews*, **45**, Article ID: 1606679. https://doi.org/10.3389/phrs.2024.1606679

[15] Mao, P., Hu, H., Li, R., Zhang, Y., Zhang, Y., Li, Y., *et al.* (2024) Circadian Changes of Autonomic Function in Patients with Zoster-Associated Pain: A Heart Rate Variability Analysis. *Brain and Behavior*, **14**, e3489. https://doi.org/10.1002/brb3.3489

[16] Chan, P.K.S., Wong, M.C.S., Chan, M., Ching, K., Giannelos, N. and Ng, C. (2023) Public Health Impact of Herpes Zoster Vaccination on Older Adults in Hong Kong. *Human Vaccines & Immunotherapeutics*, **19**, Article No. 2176065. https://doi.org/10.1080/21645515.2023.2176065

[17] Zheng, B., Yin, D., Geng, Y., Li, Q., Cao, W., Yin, M., *et al.* (2025) Herpes Zoster Incidence and Burden in Older Chinese: A Systematic Review and Meta-Analysis. *BMC Public Health*, **25**, Article 1494. https://doi.org/10.1186/s12889-025-22703-6

[18] Wang, L., Lan, X., Lan, Z., Xu, S., He, R. and Jiang, Z. (2024) The Relationship between Pain Duration Characteristics and Pain Intensity in Herpes Zoster-Related Pain: A Single-Center Retrospective Study. *Frontiers in Medicine*, **11**, Article 1466214. https://doi.org/10.3389/fmed.2024.1466214

[19] Zuo, L., Su, A., Xie, Y. and Yang, X. (2024) Clinical Study of Short-Term Spinal Cord Stimulation for Herpes Zoster-Associated Pain. *European Journal of Medical Research*, **29**, Article 603. https://doi.org/10.1186/s40001-024-02196-6

[20] Wang, M., Yuan, Y., Wang, J., Yan, Y. and Yu, H. (2025) Immune Dysregulation in Acute Herpes Zoster: Predictive Factors for Postherpetic Neuralgia. *Medical Science Monitor*, **31**, e944688. https://doi.org/10.12659/msm.944688

[21] Guan, R., Hong, Z., Pan, L., Wang, Y. and Li, Y. (2024) Mechanism and Future Prospect of Treatment of Facial Paralysis Caused by Herpes Zoster Virus Infection with Acupuncture Combined with Medicine: A Review. *Medicine*, **103**, e39652. https://doi.org/10.1097/md.0000000000039652

[22] Sitong, X., Chenglong, W., Caiyue, L., Deyuan, Q., Zujie, Q. and Chen, L. (2024) Medicated Thread Moxibustion Therapy of Zhuang Medicine and Its Application in a Rat Model of Cold-Congealing Syndrome of Primary Dysmenorrhea. *Journal of Visualized Experiments*, **203**, e65669. https://doi.org/10.3791/65669