

Analysis of the Experience of Using Ointment Formula in the Treatment of Rheumatism in Chinese Medicine Books

Bianbian Wang^{1,a}, Jialian Yu^{1,b}, Xiaofan Jiang^{2,c,*}

¹Shaanxi University of Chinese Medicine, Xianyang, 712046, China

²Shaanxi Provincial People's Hospital, Xi'an, Shaanxi, 710068, China

^a1430500431@qq.com, ^b626232359@qq.com, ^cJiangxf7906@163.com

*Corresponding author

Keywords: Ointment formula, rheumatism, Chinese medical books

Abstract: The purpose of this study is to systematically and comprehensively collect and sort out the ointment prescriptions for the treatment of arthralgia syndrome recorded in the ancient books of traditional Chinese medicine, and to summarize the characteristics of the ointment prescriptions for the treatment of arthralgia in the ancient books of traditional Chinese medicine. Through the existing literature database and books, the important traditional Chinese medicine in the ointment formula was consulted, and the immune efficacy of the herbs was analyzed and summarized, in order to provide some inspiration and reference value for the clinical medication and academic research of traditional Chinese medicine in arthralgia syndrome. After sorting out and consulting, a total of 5 medical books and literatures containing external ointments and prescriptions for the treatment of arthralgia were collected, and 5 representative ointments and prescriptions for the treatment of arthralgia in each book were selected. Through the analysis of the efficacy of important traditional Chinese medicine in the five prescriptions, it is finally concluded that each prescription has the function of inhibiting immunity and regulating immune function.

1. The definition of rheumatism and ointment

Rheumatism refers to a major category of diseases that mainly invade joints, muscles, bones and surrounding soft tissues, and cause pain in joints and the bones, muscles, tendons and ligaments that make up joints, leading to joint dysfunction^[1]. The extensive, refractory and disabling nature of its pathogenesis seriously affects people's production and life^[2]1158. Rheumatism belongs to the category of 'Bi syndrome' in traditional Chinese medicine. The clinical symptoms mainly include joint swelling and pain, deformation, morning stiffness and flexion and extension difficulties. As early as in Ling Shu, the etiology, symptoms and treatment measures of arthralgia syndrome have been elaborated in detail. It is pointed out that the etiology of arthralgia syndrome is due to the invasion of wind, cold and dampness, but the symptoms are different due to different invasion sites, and the treatment methods are also different due to the deficiency and excess of six meridians and the closure of meridians.

Cream formula, is a semi-liquid dosage form made of Chinese herbal pieces, which are

repeatedly decocted, removed from the residue, concentrated by evaporation, and added with sugar or honey^[3]. As one of the eight doses of traditional Chinese medicine, cream formula is a unique external treatment of traditional Chinese medicine. During the Spring and Autumn Period and the Warring States Period, in the *Huangdi Neijing*, it was recorded that the heart of Gui was soaked in wine to iron cold arthralgia, which was the beginning of the treatment of arthralgia. The ointment has no bitter taste of medication and the pain of acupuncture, which is easy to be accepted by people. The application of ointment in the field of Chinese medicine has a long history, which enriches the treatment methods of traditional Chinese medicine and is worthy of vigorous promotion in clinical practice^[4].

2. Advantages of Ointment formula in treating rheumatism.

In the treatment of rheumatism, internal medicine as the main treatment method is commonly used by ancient and modern doctors. Compared with oral Chinese medicine, external treatment has the advantages of easy operation, low cost and rich clinical experience, which is favored by doctors and patients, and the use of Cream formula in the treatment of rheumatism also inherits this feature. The author sorted out the paste prescriptions for the treatment of rheumatism involved in five traditional Chinese medicine classics, and on the basis of referring to the relevant papers of existing clinical experiments, analyzed the contribution of each herb in the treatment of rheumatism in detail, and further refined the feasibility and practicability of these paste prescriptions for the treatment of rheumatism. It is hoped that provide an effective and simple treatment plan for clinical rheumatism immune patients.

3. The records of ointment formula for the treatment of rheumatism in ancient books of Chinese medicine

3.1 The ointment formula for treating rheumatism in *Peaceful Hold Benevolent Prescription*

Wutou San, derived from the *Peaceful Hold Benevolent Prescription* Volume 21. Studies have shown that now with aconite as the main drug of wutou decoction has been used in the treatment of rheumatic diseases, sciatica, knee osteoarthritis and other diseases, especially in the treatment of rheumatoid arthritis, carried out a series of clinical research and experimental research, and made some progress^[5].

The prescription is only composed of one *Aconitum* which is a pungent, warm and toxic herb in nature. It has analgesic, qi-promoting and hemostatic, wind-dispelling and dampness-removing, tendon-relaxing and collateral-dredging, anti-inflammatory and anti-tumor effects^[6]. In *Changsha Yaojie*, it is described that the power of aconitum to dredge the joints is rapid, and it can also open the sweat pores of the human body and expel the cold and dampness out of the body. In the prescription, it is clearly stated that it is necessary to add vinegar with better quality. Vinegar is widely used in the clinical practice of traditional Chinese medicine, it can reduce the toxicity of certain drugs. The aconitum in the prescription was peeled, mashed into fines, mixed with better quality vinegar, and then applied to the pain with gauze. This method can treat joint pain. Considering the toxicity of aconitum, it can be used as a ointment for external use to eliminate itself disadvantage. The extract is simple, easy and safe, and will has certain clinical application value.

3.2 The ointment formula for the treatment of rheumatism in *Yongle Canon*

Yuntaizi Powder, originated from *Yongle Canon*, can be used to treat various cold arthralgia. This prescription is composed of rape seed, white mustard seed and tangerine peel. The use of this

prescription is to study the above drugs into fine powder, then add vinegar to reconcile into a paste, and finally stick to the pain.

Brassica seed tastes pungent, belongs to the liver and large intestine meridian. It has the effect of promoting qi and breaking blood, reducing swelling and resolving masses, and can be used to treat lumbar and foot paralysis. White mustard seed can remove the phlegm of meridians and collaterals, so it can treat pain caused by phlegm stagnation of meridians and collaterals. Tangerine peel has the effect of regulating qi and drying dampness. Studies have found that tangerine peel can improve the low spleen lymphocyte proliferation response in immunosuppressed mice^[7]. The ointment formula is vinegar to remove evil, the above drugs are used together to remove the accumulated phlegm turbidity and cold evil, so that the blood circulation and relieve joint pain.

3.3 The ointment formula for the treatment of rheumatism in Puji Fang

The Scorpion Frankincense Powder comes from Puji Fang. The ointment is composed of aconite, Chinese iris seed, scorpion, pangolin, frankincense and atractylodes. On the basis of the above drugs, white mustard seed was added, and then stirred into a paste, attached to the pain, and the heat was even removed.

In this prescription, aconitum played a role in dispelling cold and dampness, warming meridians and relieving pain. Iris lactea is Malanzi. It is recorded in Shennong Bencao Jing that Iris lactea mainly has cold and heat in skin, and wind-cold-dampness arthralgia is caused by external pathogens such as wind-cold-dampness invading human muscles, bones and joints, resulting in obstruction of meridians and collaterals, which leads to pain^[8]. Studies have shown that Chinese iris seed lactea has a certain immunosuppressive effect^[9]. Scorpion is the only insect medicine in this prescription. Insect drugs can run well in the human body, thereby alleviating inflammation and improving disease symptoms^[10]. In recent years, more and more studies have found that insect drugs may have certain potential for the treatment of rheumatoid arthritis^[11]. Studies have found that scorpion can rebuild immune tolerance by increasing the expression of CD4 +, CD25 + and FoxP3 + in peripheral blood, so that autoimmune damage can be restored^[12]. Atractylodes lancea has the effect of dispersing cold and removing dampness to treat wind arthralgia pain, and is widely used in the treatment of rheumatic diseases^[13]. The combination of various drugs, dispelling cold and dampness, activating blood and dredging meridians, has a strong analgesic effect.

3.4 The ointment formula for the treatment of rheumatism in Liyue Pianwen

Baoan Ointment is from Liyue Pianwen. The prescription is composed of Aconitum, Atractylodes, Notopterygium, Dendrobium, Chuanxiong, Angelicasinensis, Ephedrasinica, Fangfeng, Xixin, Schizonepetae Herba, Scorpio, Tianma, Gaoben, radix glycyrrhizae, Bohe, Xionghuang, Zhusha, and Liangtoujian. The above drugs are ground into fine powder, and then the onion is mashed and pasted on the affected area together.

The Liangtoujian in the prescription can be used clinically for wind-cold-dampness arthralgia, limb spasm, joint pain, carbuncle swelling and ulceration. It is the main raw material of Chinese patent medicine ' Huoluo Dan ' and ' Zaizao Wan ' and has a wide range of applications in the treatment of rheumatism and anti-inflammatory^[14]. Ephedra, Notopterygium, Angelica dahurica, Saposhnikovia divaricata, Asarum, Schizonepeta, Ligusticum can be acrid and warm, expelling wind and dehumidification, dispersing cold and relieving pain ; yinhu, Danggui, Shouwu nourishing yin and blood, strong bones and muscles. Ligustrazine in Chuanxiong Rhizoma is one of the main effective components in the treatment of rheumatoid arthritis^[15]. Modern studies have shown that ligustrazine has anti-inflammatory and immunomodulatory effects, which can effectively inhibit the expression of pro-inflammatory factors in inflammatory diseases and promote the release of

anti-inflammatory factors ^[16-17]. All rheumatic arthralgia can be treated with this.

3.5 The ointment formula for the treatment of rheumatism in Compendium of Medicine

Ginger gum paste, from Zhang Xichun's Compendium of Medicine, is composed of fresh ginger juice and yellowish translucent glue. The practice is to boil these two drugs into a thin paste, and then spread on the gauze, and finally attached to the affected area, once a day. This ointment can be used for rheumatism such as wind-cold-dampness arthralgia and deficiency-cold low back pain.

Studies have shown that ginger juice has a certain effect on wind-cold-dampness arthralgia and joint pain ^[18]. According to the theory of traditional Chinese medicine, ginger is a kind of yang-supporting product. In the Bencao Gangmu, it is described that ginger contains gingerols, and its pungent taste is longer than divergent wind-cold. Fresh ginger is pungent and warm, can heat and dispel cold, through the external use of fresh ginger juice and acting on acupoints, so as to achieve the purpose of warming meridians, dispelling cold and removing dampness. In terms of relieving pain, fresh ginger juice can dredge the interstices to promote blood circulation, improve body surface metabolism, and improve efficacy. In this prescription, yellowish translucent glue is used to boil into ointment, which is easy to stick to the skin by its adhesion. Studies have shown that yellowish translucent glue can protect immune organ damage and has a synergistic and attenuated effect ^[19-20].

4. Conclusions

This literature displays the ointment prescriptions for the treatment of rheumatism recorded in Peaceful Hold Benevolent Prescription, Yongle Canon, Puji Fang, Liyue Pianwen and Compendium of Medicine. Through analysis and induction, the author finds that the general principles of these ointment prescriptions are dispelling wind, dispelling cold and removing dampness. Most of the ointments mentioned in this literature belong to drugs that are easy to open and close pores. Some of the prescription wind dehumidification drugs, so that the drug can smoothly penetrate into all parts of the body. This medication idea can help the body to eliminate the evil in the body, so that the body is in a relatively peaceful state to resist the invasion of external evils. Ancient Chinese doctors were also good at using vinegar, onion, wine, ginger juice and other medicinal and edible drugs to assist the efficacy, which is enough to see their wisdom and innovation. The development of external treatment of traditional Chinese medicine has been inseparable from the innovation and efforts of each generation of doctors. They have made great contributions to the development of external treatment of ointment. The ointment for the treatment of rheumatism listed in this article still has great learning value today. The ointment preparation method is simple, easy to operate, and can make up for the pain of decoction and acupuncture. It is a treatment method that people can accept and easy to promote. This has promoted the development and innovation of the external treatment of traditional Chinese medicine ointment to a certain extent, and provided a solid prescription guidance for the clinical application of ointment in the treatment of rheumatic immune diseases today. It also allows rheumatologists and rheumatology patients to have a variety of treatment options for the disease.

References

- [1] Haidong Wang, Zhiming Wang. *Acupotomology and rheumatism [J]. Chinese Journal of Orthopedics and Traumatology of Traditional Chinese Medicine*, 2012, 20(01):60-61.
- [2] Xinmin Liu. 'Chinese Medical Encyclopedia'. *Chinese Medical Encyclopedia · Internal Medicine Volume I Rheumatology*. Beijing: Military Medical Science Publishing House, 2008. 7
- [3] Haoming Hua. *Preliminary study on the historical origin of ointment [J]. Journal of Nanjing University of Chinese*

- Medicine, 1997(04):57-58+65.
- [4] Jiaojiao Duan, Hengli Zhao. Analysis of the advantages of paste in the treatment of ankylosing spondylitis [J]. *Bright Chinese medicine*, 2023, 38(13):2509-2511.
- [5] Xin Ba, Zhe Chen, Shenghao Tu. Research Progress of Wutou Decoction in the Treatment of Rheumatoid Arthritis [J]. *Medical Herald*, 2023, 42(02):173-177.
- [6] Shiwen Hu, Jing Luo, Gang Kuang, et al. Study on the distribution and comprehensive utilization of Aconitum medicinal plant resources in the Three Gorges area of the Yangtze River [J]. *Chinese herbal medicine*, 2020, 43 (9) : 2137-2140
- [7] Rong Li, Jun Li, Chengmu Hu, et al. Experimental study on immunomodulatory effect of hesperidin on immunocompromised mice [J]. *Chinese Pharmacology Bulletin*, 2007(02):169-172.
- [8] Hongbin Zhang, Ming Xie, Wanping Sun, et al. Herbal research of *Iris lactea* [J]. *Asia-Pacific traditional medicine*, 2023, 19(04):185-188.
- [9] Yu Meng, Guoyong Xie, Lu Shi, et al. Research progress on chemical constituents and pharmacological activities of *Iris lactea* [J]. *Wild plant resources in China*, 2017, 36(03):42-49.
- [10] Yan Sun. Immunomodulatory effect of traditional Chinese medicine [J]. *Chinese tumor*, 1993(03):13-14.
- [11] Jiuli Ding, Xiaojing Guo, Wei Liu, et al. Discussion on the application of insect drugs in rheumatoid arthritis based on collateral disease theory [J/OL]. *Journal of Beijing University of Chinese Medicine*: 1-11 [2023-11-09]. <http://kns.cnki.net/kcms/detail/11.3574.R.20230911.1645.002.html>.
- [12] Yunxia Liu, Yan Li, Yuchen Zhu, et al. Study of Anti-Inflammatory and Analgesic Activity of Scorpion Toxins DKK-SP1/2 from Scorpion *Buthus martensii* Karsch (Bm K) [J]. *Toxins*, 2021, 13(7): 498.
- [13] Qin Jing, Huiyang Wang, Dan Zhuang, et al. Structural characterization and immunoregulatory activity of two polysaccharides from the rhizomes of *Atractylodes lancea* (Thunb.) DC [J]. *International Journal of Biological Macromolecules*, 2019, 136341-136351.
- [14] Xin Liu. Study on chemical composition analysis and anti-hepatic fibrosis effect of Liangtougian before and after processing [D]. *Changchun University of Traditional Chinese Medicine*, 2023. DOI:10.26980/d.cnki.gcczc.2022.000053.
- [15] Weiye Zhang, Xuequn Zhuo, Wulong Wen and so on. PK/PD model study based on Chuanxiong Gel Plaster in the treatment of rheumatoid arthritis [J/OL]. *Chinese Journal of Traditional Chinese Medicine*: 1-9 [2023-11-09]. <https://doi.org/10.19540/j.cnki.cjcmm.20231011.301>.
- [16] Wenzhe Luo, Xiaofeng Qiao, Zhihui Ye, et al. Effect of ligustrazine on TGF- β 1/Smads in rats with pulmonary function injury induced by rheumatoid arthritis [J]. *Chinese Journal of Geriatrics*, 2017, 37(01):42-44.
- [17] Changlong Fu, Yangyang Mei, Jie Lin and so on. Study on the mechanism of ligustrazine intervention in rheumatoid arthritis [J]. *Rheumatology and arthritis*, 2016, 5(09):45-47.
- [18] Yuping Yang. Application of fresh ginger juice in the treatment of wind-cold-dampness arthralgia [J]. *Chinese community physician (medical specialty)*, 2012, 14(18):225.
- [19] Haiyu Xu, Songsong Wang, Hongjun Yang, et al. Study on the mechanism of compound Ejiao slurry in adjuvant treatment of tumors based on network pharmacology [J]. *Chinese Journal of Traditional Chinese Medicine*, 2014, 39(16): 3148-3151.
- [20] Xumin Sun, Xinyi Chen. Effect of Compound Ejiao Jiang on the expression of Cyclin D1 and CD44 in mice with lewis lung cancer [J]. *World Chinese Medicine*, 2013, 8(03):318-321.