

# Progress of Research on the Treatment of Varicose Veins of the Lower Limbs with Chinese Medicine

Jianpeng Zhai<sup>1</sup>, Jun Zhou<sup>2,\*</sup>

<sup>1</sup>Shaanxi University of Chinese Medicine, Xianyang 712046, Shaanxi, China

<sup>2</sup>Affiliated Hospital of Shaanxi University of Chinese Medicine, Xianyang 712000, Shaanxi, China

\*Correspondence Author

**Abstract:** *Varicose veins of the lower limbs are peripheral vascular diseases in which the superficial veins of the lower limbs are thickened, dilated, and tortuous, often accompanied by infections, ulcers, and other complications, and are mainly treated with surgery, but it is more traumatic. Chinese medicine, as a traditional medicine, has been quite effective in treating varicose veins of the lower limbs in recent years, and more and more studies have been conducted. The article summarises the research on the treatment of varicose veins of the lower limb by Chinese medicine in recent years, and summarises and elaborates on various aspects, with a view to providing theoretical reference for the treatment of varicose veins of the lower limb by Chinese medicine, so as to serve the clinic.*

**Keywords:** Varicose veins of the lower limbs, Chinese herbal medicine, Acupuncture, Review.

## 1. Introduction

Varicose veins (VV) is a peripheral vascular disease in which the superficial veins of the lower limbs become thickened, dilated and tortuous due to valvular dysfunction, brittle vessel walls and increased intraventricular pressure, which may be associated with infections, ulcers, and thrombosis [1]. Varicose veins of the lower extremities are one of the major diseases that seriously affect people's quality of life and health, with a high incidence rate year after year, and a prevalence rate of nearly 10% in China [2,3]. Currently, the main treatments for varicose veins of the lower limbs are medication, compression, sclerotherapy and surgery [4].

Varicose veins of the lower limbs are called "fascioma" in Chinese medicine, because of the stagnation of gas and blood stasis, cold and dampness stagnation. The Surgery of the Genuine" cloud: "tendon tumour, firm and purple colour, base green tendons, coiled even, knot as earthworms." Visible in our country very early on this disease has a certain understanding. Some studies have confirmed that Chinese medicine has achieved good efficacy in the treatment of varicose veins of the lower limbs and their complications by using traditional Chinese medicine, acupuncture, tuina, bloodletting and other therapies [5], and Chinese medicine has played its unique advantages in the treatment of varicose veins of the lower limbs, with a high degree of acceptance by the patients, little damage, as well as the possibility of reducing the postoperative complications [6]. In this paper, we will summarise the literature at home and abroad in recent years and explore the research progress of Chinese medicine in treating varicose veins of the lower limbs, so as to provide new ideas for the treatment of varicose veins of the lower limbs with Chinese medicine.

## 2. Internal Treatment with Traditional Chinese Medicine

For patients with varicose veins of the lower limbs, they can be treated with evidence-based treatment and oral Chinese medicine. Tong Guangzhao et al. [7] Summarised the experience of Professor Zhang Jianqiang, who based on the

theory of zongqi, combined with the theory of qi lifting and lowering, used Zhang Xichun's Lifting and Sinking Soup as the basic formula, and created Lifting and Tonicating Zongqi Soup, which is used to lift and tonify zongqi, activate blood circulation and promote diuresis, to treat varicose veins of the lower limbs. Wang Tao et al. [8] found that the treatment of varicose veins of the lower limbs with the combination of the Blood Stasis Expelling and Tongxin Tang and minimally invasive surgery had better efficacy, which laid the foundation for the treatment of mild to moderate varicose veins of the lower limbs with the Blood Stasis Expelling and Tongxin Tang. Zhang Weikang [9] treated varicose veins of the lower limbs with the addition and subtraction of Si Miao Yong An Tang combined with laser endovenous closure and found that it could improve the effect, reduce the VCSS scores and AVVQ scores, correct the haemorheological indexes, improve the quality of life, and reduce the complications. Wu Hongfang [10] et al. found that haematopoietic soup combined with endoluminal laser closure for the treatment of patients with varicose veins of the lower extremities could significantly improve the symptoms of petechiae, limb pain, swelling, etc., reduce the incidence of complications, and increase the patients' satisfaction with the treatment, and the clinical efficacy was good. Lu Huimin et al. [11] found that acupuncture bloodletting combined with haematopoietic blood-stasis-expelling soup for the treatment of varicose veins of the lower limbs also had reliable efficacy. Ding et al. [12] gave Taohong Siwu Tang combined with radiofrequency ablation to patients with varicose veins combined with thrombophlebitis of the lower limbs, which can inhibit inflammation, reduce endothelial damage, improve blood rheology and microcirculation, alleviate the clinical symptoms of patients, and improve the clinical efficacy of patients. Zhu Mengying et al. [13] explored the effect of Astragalus and Red Tongluo Formula (Astragalus, Safflower, Poria, Atractylodes Macrocephala, Peach kernel, Chickweed vine, Angelica sinensis, Dilophylaxis, Oxlip, Honeysuckle) combined with radiofrequency ablation in the treatment of varicose saphenous veins, and found that the effect was better, which could reduce inflammatory indexes in a short period of time. In the short term CRP, PCT and VCSS indicators were reduced. Clinically it showed symptomatic relief and was safe. Xue Diming et al. [14] et al. analysed the medication pattern

and mechanism of action of traditional Chinese medicine in the treatment of fasciomas based on data mining combined with network pharmacology, and found that the Chinese medicines with higher frequency of use were Gan Cao, Red Peony, Mudan Pi, Astragalus, and Sheng Dihuang, and the efficacy of the medicines was based on the category of heat-clearing, and the cold medicines, bitter medicines, and those attributed to the Liver meridian had a high frequency of use, and obtained the core grouping of angular medicines Red Peony-Mudan Pi-Sheng Dihuang. Zhao Junkai [15] reviewed and collated 62 cases of polycarbonates patients hospitalised in the Department of Vascular Sore and Ulcer Surgery of the Affiliated Hospital of Liaoning University of Traditional Chinese Medicine, and summarised that for polycarbonates with the evidence of damp-heat underflow, the use of oral Ermiao Pill combined with Wushen Tang plus intravenous active medicines, and the use of oil-adjusted ointment for external application in the acute stage plus heat-clearing, moisture-relieving, detoxifying decoction fumigation were adopted; for polycarbonates with the evidence of qi deficiency and blood stasis, the use of oral tonifying Yang Yu Wu Tang combined with Sihmiao Tang plus intravenous active medicines was adopted; the use of Yixiang Ointment combined with Elephant Skin Powder was used as an external application to benefit the vitality of qi and blood and generate muscle growth. The efficacy of the decoction is remarkable. Chen Peng found that *Paeonia lactiflora* and *Glycyrrhiza glabra* soup with added flavour could reduce the size of the tumour and improve the symptoms of soreness, heaviness and spasm of the lower limbs [16]. Shuai Yinqi et al. [17] summarised Professor Chen Chaozu's "Fascial Theory" in treating varicose veins of the lower limbs. In the case of dampness-heat subluxation, Si-Miao-San combined with Huo-Park-Hsia-Ling Tang with additional subtractions is used to clear dampness-heat; in the case of liver-spleen disharmony, Easy-San combined with Si-Zhou-Zun-Zi is used to dredge the liver and regulate the spleen; and in the case of liver-kidney yin deficiency, Qi-Ju-Di-Huang-Tang combined with Easy-San is used to nourish the water and the wood.

Lower extremity varicose veins with ulcers are a relatively common complication of lower extremity varicose veins. Zhou Kangyuan et al. [18] used blood-activating and vein-opening drink plus orally as well as moist burns cream to change the dressing to treat local wounds, with good therapeutic effect and no reoccurrence of rupture and ulceration. Guo Haitao et al. [19] observed the clinical efficacy of Polycarbonate Sore Soup (*forsythia*, *dandelion*, *raw astragalus*, *angelica sinensis*, *red peony*, *danshen*, *Job's tear grains*, *saponin*, *dahurica dahuricae*, *poria*, *amaranthus*, *Amaranthus*, *Ampelocarpus indicus*, *poria*, *white corky bark*, *dicotyledonous seed*, and *bitter ginseng*) for the treatment of damp-heat and stasis blockage type of venous ulcers on lower limbs, and found that its therapeutic efficacy is exact, and it can effectively control the chronic inflammation.

To sum up, different medical practitioners have different dialectical ideas, but oral Chinese medicine treatment of varicose veins of the lower limbs are mostly Chinese medicines that activate blood circulation to dispel blood stasis, clear away heat and dampness, and advocate evidence-based treatment. Therefore, according to the severity of the patient, the characteristics of the evidence for the administration of

medicines, can not be confined to one, should be different from person to person.

### 3. External Treatment with Chinese Medicine

#### 3.1 Acupuncture

##### 3.1.1 Fire Needle and Fire Needle Bleeding

Fire Needle Therapy is a method of treating diseases by rapidly stabbing the tips of needles red with fire into acupuncture points, which has a history of thousands of years in China, and is a unique medical system in acupuncture therapy, which has the function of dispelling cold and removing dampness, clearing the menstruation and relieving pain, and inducing heat to reach the outside of the body [20]. In the treatment of varicose veins of the lower limbs with fire needles, Professor Zhang Jianqiang believes that its role is threefold: firstly, to release blood and expel blood stasis; secondly, to induce heat with heat to dispel cold; and thirdly, to warm and invigorate Yang Qi [7]. Liu Chao et al. [21] treated varicose veins of the lower limbs with burnt-needle hijacking acupuncture combined with conventional acupuncture. Burnt-needle hijacking acupuncture is to use He's fire needles to quickly pierce the varicose veins, quickly pierce the varicose veins, which has the dual therapeutic effects of fire needles and acupuncture; the conventional acupuncture points are: Sanyinjiao, Ashigaru Sanli, Yanglingquan, Sea of Blood, Huizhong, and Taichong. The results of this study show that burnt needle robbing and stabbing acupuncture combined with conventional acupuncture can significantly improve the soreness and pain in the affected area of patients with varicose veins of the lower limbs, reduce the patient's VSS score, reduce the severity of the disease, and improve the patient's venous damage, and its clinical effect is better than that of conventional acupuncture.

Fire needle bloodletting is a therapeutic method derived from fire needle therapy, which is a combination of fire needle and bloodletting, which plays a certain therapeutic effect in canker sores, herpes zoster, folliculitis and lumbago [22-25]. Fire needle bloodletting is also mainly used for varicose veins of the lower limbs. Jiang Hua et al. [26] compared the clinical efficacy of fire needle bloodletting and surgical treatment of varicose veins of the lower limbs and found that fire needle bloodletting can effectively treat varicose veins of the lower limbs, and the mechanism of action may be related to the improvement of the patient's haematological rheology, the down-regulation of immune-inflammatory response, the enhancement of the vascular endothelial cell function, and the inhibition of cell apoptosis. Cheng Jing et al. [27] observed the effect of Qinglong wagging tail acupuncture combined with fire needle bloodletting to supplement the treatment of varicose veins of the lower limbs, and found that its efficacy on varicose veins of the lower limbs was better. Chen Qian et al. [28] found that acupuncture and bloodletting combined with traditional Chinese medicine footbath in the treatment of mild varicose veins of the lower limbs has the characteristics of small adverse reactions, indicating that this therapy is worth promoting in the clinic. Wang Jingli et al. [29] found that the treatment of varicose veins of the lower limbs by needle bloodletting combined with rehabilitation training can inhibit the inflammation of patients, reduce the level of

SERPINE 1, increase the level of KLF2, APTT and t-PA, improve the hypercoagulable state of the patient's blood, reduce the damage of endothelial function of the blood vessels, improve the patient's haemato-rheology, and alleviate the clinical symptoms. Zhang Jianwei [30] An exploratory study on the treatment of varicose veins of the lower limbs by bloodletting with fire-needle pricking found that improving the local oxygenation of varicose veins may be an important mechanism for the treatment of varicose veins of the lower limbs by bloodletting with fire-needle pricking.

### 3.1.2 Stabbing and bloodletting method

Bloodletting therapy is a method of using three-pronged needles to stab the blood in the forgiven superficial venous vessels, which has the function of dispelling blood stasis and generating new blood, draining heat and relieving pain, dredging meridians and collaterals, regulating yin and yang, and it is widely used in the diseases of the five senses, skin diseases and pain, etc. [31-33]. In varicose veins of the lower limbs, bloodletting by stabbing the collaterals dispels the old blood and removes the evil when the blood changes, thus promoting the recovery of varicose veins of the lower limbs. It is found that compared with oral diosmin, "blood change and evil elimination" bloodletting therapy can improve the internal diameter of saphenous vein, reflux time of saphenous vein, improve the clinical symptoms of the patients, and improve the quality of survival of the patients [34]. Yanhong Liu [35] investigated the clinical efficacy of disposable sterile needle bloodletting combined with warm acupuncture in the treatment of primary varicose veins of the lower limbs, which can improve the effect of treatment and shorten the recovery time. Zhao Ziming et al. [36] found that the combination of bloodletting by stabbing and auricular pressure pills in the treatment of primary varicose veins of the lower limbs also had a better therapeutic effect.

### 3.1.3 Other therapies

Liang Xieqing et al. [37] summarise the experience of Professor Ji Laixi of Shanxi University of Traditional Chinese Medicine in the treatment of varicose veins of the lower limbs, whose clinical use of magnetic circular plum needles combined with needle and knife in the treatment of this disease has a remarkable effect. Firstly, the magnetic plum needle is used to knock the varicose area, and then the needle knife is used to explore the high tension point for cutting and loosening. It is believed that the magnetic round plum needle has high magnetism, and the magnetic field generated by the contact with the human body during the treatment can cause the biomagnetic effect and promote the venous return of the lower limbs; the needle knife can cut and loosen the adherent muscle fibres and activate the muscle activity, and if the point of the application is located in the acupoints of acupuncture and moxibustion, the acupoints can also be stimulated through the cutting and dredging of the meridian channels. This has the advantages of less trauma, less pain, easy operation, low cost, etc. It is worth to promote the use in the clinic.

Wu Mengying et al. [38] summarise the "Four Sides Theory", a characteristic theory of traditional Chinese medicine surgery proposed by Professor Liu Ming of the Department of Peripheral Vascular Diseases, Shandong Provincial Hospital

of Traditional Chinese Medicine. According to this theory, the periphery of the ulcer can express the prevalence, decline and regression of the disease, and the periphery of the ulcer can be used to treat the disease by clearing away heat and removing toxins, activating blood circulation and removing blood stasis, etc. Commonly used peripheral therapies include peri-compresses, poultices, fumigation, acupuncture, bloodstaining, moxibustion, and so on. Professor Liu Ming's team has proposed the Xingwei peripheral acupuncture method based on the theory of the four sides, including Xingwei blood-stabbing therapy and Xingwei acupuncture method, which includes heat-dissolving and dampness-relieving acupuncture method, blood-stasis-activating acupuncture method and qi-blood-activating acupuncture method according to dialectics, which is worth to be promoted.

In conclusion, the research on acupuncture for varicose veins of the lower limbs has become more mature, mainly focusing on the bloodletting of fire needles as well as the research of each school of thought itself, which provides ideas for the treatment of varicose veins of the lower limbs with acupuncture; however, the treatment mechanism still needs to be further improved for dialectical treatment so as to promote it in the clinic.

## 3.2 Chinese Herbal Fumigation

Chinese medicine fumigation is mainly used for eczema or ulcers, for patients with mild varicose veins of the lower limbs can be given Si-Miao-Si-Wu-Tang fumigation, Tong-Mei-Shui-Yu-Tang fumigation, or rhubarb decoction tattoos, which can significantly improve the clinical symptoms of varicose veins of the lower limbs with better therapeutic effects [39]. Li Yafei et al. [40] found that fumigation with traditional Chinese medicine (alum, pomegranate peel, cypress, tsabaki root bark, mugwort leaf) combined with surgery to treat varicose vein ulcers of the lower limbs, combining traditional Chinese and Western medicines, can promote the healing of the ulcers more quickly, and the therapeutic efficacy is exact.

## 3.3 External Application of Chinese Medicine

External application of traditional Chinese medicine is mostly used for the treatment of varicose veins complicating ulcers of the lower limbs. Jin Liqiang et al. [41] used compound cypress liquid coating (forsythia, cypress, honeysuckle, dandelion) in combination with foam sclerotherapy to treat varicose vein ulcers of the lower limbs and found that it was able to effectively inhibit the expression of inflammatory factors, reduce the clinical severity score of the veins, alleviate pain, and improve the clinical efficacy. Zhang Kai et al. [42] used pain relief and muscle growth powder (blood exhaust, frankincense, myrrh, catechu, erythrite, keel bone, ice tablet) combined with surgical treatment of varicose vein ulcers of the lower limbs, which can effectively improve the clinical symptoms of patients with varicose vein ulcers of the lower limbs and lower limb perfusion, and promote the healing of traumas, and the clinical efficacy of the treatment is remarkable. Ma Haiying [43] found that Yinqiao Sanhuang Cream (Huanglian, Scutellaria baicalensis, Cyperus rotundus, Honeysuckle, Forsythia, Ice flakes, Yellow wax and sesame

oil) can effectively improve clinical symptoms and lower limb blood perfusion of patients with varicose vein ulcers and promote wound healing, and its clinical efficacy is remarkable. Yao Zaoying et al. [44] found that the wet application of traditional Chinese medicine muscle-generating powder (astragalus, pomegranate peel, bitter ginseng, cypress, danshen, yellow dock, comfrey, five-fold, dandelion, honeysuckle, bletilla, frankincense, myrrh, safflower, red peony) combined with intracavernous radiofrequency treatment can accelerate the recovery of patients' lower limb varicose venous ulcers' area, improve inflammatory reaction and organic symptoms, improve the therapeutic effect, and reduce the degree of pain. Zhang Xiaohong [45] explored and concluded that varicose veins of the lower limbs with stasis dermatitis can effectively reduce the clinical symptoms of patients by applying the comprehensive intervention combined with the formula for promoting dampness and blood stasis (cypress, rhubarb, angelica sinensis, Liu Shunnu, haitongpi, bitter ginseng, baixianpi, manganese nitrite) wet compresses, improve the organism's haematological rheology, reduce the inflammatory reaction, and promote the healing of traumas. Tang Yinglei [46] explored the clinical efficacy of Longcao Cream in the treatment of venous ulcers of the lower limbs (damp-heat injection type), and found that Longcao Cream can significantly improve the symptoms of the sores of patients with venous ulcers of the lower limbs (damp-heat injection type), improve the colour of the sores, reduce the amount of exudate from the sores, promote the growth of neoplastic granulation tissue, accelerate the formation of neoplastic epithelial tissues, improve the temperature and colour of the periapical area, alleviate the periapical swelling potential, and relieve the pain of the periapical area. Li Zhuo et al. [47] explored the therapeutic effect of the external application of San Miao San combined with foam sclerotherapy in the treatment of recurrent ulcers after varicose vein surgery, and found that it can significantly reduce pain, promote wound healing, and shorten the healing time, and the mechanism may be related to the inhibition of inflammatory response. Ouyang Ying et al. [48] found that compound ice tablet preparation (dragon blood exhaust capsule (remove capsule shell), ice tablet, alcohol) applied externally for the treatment of varicose veins complicating phlebitis of the lower limbs can quickly relieve redness, swelling and pain, and can buy time for the implementation of varicose vein surgical treatment, and the therapeutic effect is satisfactory. Li Ling [49] found that the combination of Si-Miao Tang and external application of traditional Chinese medicine can effectively improve the therapeutic effect of patients operated for varicose veins with phlebitis of the great saphenous veins and promote the recovery of the patients' organism.

In summary, the external application of traditional Chinese medicine for the treatment of varicose veins of the lower limbs is mostly for varicose veins of the lower limbs accompanied by ulcers, and the traditional Chinese medicine is mostly for activating blood circulation and removing blood stasis, removing putrefaction and regenerating muscle, clearing away heat and detoxification of toxins, which helps to repair ulcers, and thus to carry out surgical treatment, and clinically it is mostly the external application of traditional Chinese medicine combined with surgery for the treatment of varicose veins of the lower limbs, but in the author's opinion,

follow-up can be carried out to clinically promote the screening of a more further step.

#### 4. Summary and Outlook

Varicose veins of the lower limbs are a common disease that seriously affects people's quality of life. At present, Chinese medicine treats varicose veins of the lower limbs by means of oral Chinese medicine, bloodletting with fire needles, and external application of Chinese medicine, which can effectively treat varicose veins of the lower limbs and their complications, or combined with other treatments have also produced good results, such as surgical treatments and auricular acupressure pills. However, Chinese medicine needs dialectical treatment, varicose veins of the lower limbs evidence type research is quite a lot [50,51], but the dialectical and research evidence type of each medical doctor is not unified, quite a part of the clinical research of varicose veins of the lower limbs of the evidence type is also fuzzy must be clear, not enough to be comprehensive, not enough to regulate. If we can unify the understanding, then Chinese medicine treatment of varicose veins of the lower limbs is more scientific and more helpful for clinical promotion.

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