

REVIEW ARTICLE

Effectiveness of CAM (Complementary and Alternative Medicine) on Varicose Vein Complications

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Abstract

The varicose veins refer to the condition in which the veins in the legs enlarge and bulge outwardly or become varicose. Varicose vein disease is defined as long-term morphological and functional venous abnormalities that may or may not be symptomatic. This condition

can manifest as tiny, dilated blood vessels, varicose veins, and even skin ulcers. CAM (Complementary and alternative medicine) is a cost-effective alternative therapy including Yoga, Ayurveda, Siddha, Homeopathy, and Naturopathy. Various experimental evidence suggested that the alternative therapy reduces the symptoms of varicose veins complications and associated complications by modulating hs-CRP protein, enhancing the apoptosis, and reducing the homocysteine concentration..

Key Words: *Yoga; Ayurveda; Siddha; Homeopathy; Varicose vein*

Introduction

The term “varicose veins” refers to the condition in which the veins in the legs enlarge and bulge outwardly, or become varicose. Varicose veins are superficial veins located in the subcutaneous tissue [1]. The overall population frequently has varicose veins. Varicose vein prevalence varies significantly [2-3]. In the US, it has been estimated that 23% of adults suffer from varicose veins. Serious health hazards are hardly ever linked to varicose veins. Pulmonary embolism (PE), Deep vein thrombosis (DVT), and peripheral artery disease (PAD) are vascular

conditions that can result in significant systemic consequences. Inflammatory and pro-thrombotic indicators are present at higher levels in patients with varicose veins [4-5]. In a population-based study conducted in Finland, the likelihood of developing artery disease was notably higher among 888 individuals with varicose veins compared to 2006 control patients. Individuals with varicose veins could also be susceptible to conditions such as chronic peripheral artery disease (CPAD), angina pectoris, heart attacks, or cerebrovascular diseases [6]. The symptoms of varicose veins, which might include hurting, throbbing, weariness, pruritus, ankle swelling,

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and discomfort, are what drive the majority of patients to seek treatment rather than aesthetic concerns [7]. Additionally, varicose veins are a symptom of chronic venous insufficiency, which can lead to leg discomfort, edema, long-lasting skin abnormalities, and non-healing ulcers [7-8].

Complementary and alternative medicine (CAM) is a cost-effective alternative therapy used for the prevention and treatment of various communicable and non-communicable disorders. It includes Yoga, Ayurveda, Siddha, Homeopathy and Naturopathy. There have been few investigations on CAM and the issues linked to varicose veins. In this review, we will analyze how CAM may be effective in varicose vein complications (VVC).

Methodology

Search strategy

Studies were found through electronic database searches in Google Scholar, PubMed, and Web of Sciences by using the keywords such as Yoga, Ayurveda, Siddha, Homeopathy, Naturopathy, and Varicose vein.

Inclusion criteria

We have included the Ayurvedic, Naturopathic, Homoeopathic, Siddha, Exercise therapy and Yoga treatment modules for varicose vein problems. We have included experimental research on the effects of complementary and alternative medicine and varicose vein complications. We compiled all the case studies and RCTs over the last 30 years.

Methodological evaluation of included studies

A thorough literature search was done to gather studies for their inclusion in this review.

Common varicose vein-associated complications

The long-term consequences of varicose vein complications encompass vein rupture, thrombophlebitis, and chronic ulcers, all of which can be readily precipitated [9]. Patients might undergo symptoms such as pigmentation, lower limb edema, bleeding, deformity, and other manifestations that profoundly affect their quality of life [10]. While conventional medicine offers numerous surgical methods for addressing lower extremity varicose veins, these interventions often fail to fully mitigate potential complications such as postoperative limb swelling, subcutaneous hematoma, ecchymosis, saphenous nerve damage, and other factors that disrupt patients' post-surgery recuperation [11-12].

Effects of Cam on Varicose Vein Complications (VVC)

Ayurvedic treatment for varicose vein complications (VVC)

Ayurveda is a traditional science that Indian philosophy contributed to 10,000 years ago. According to Ayurveda, varicose vein issues can be treated using a variety of therapeutic methods.

- Taila panna (oil therapy): Some Ayurvedic oils can be applied locally to help provide short-term comfort.
- Basti karma (Medicated Drug Emem): Water and medicinal herbs such as *Rubia cordifolia*, *Glycyrrhiza glabra*, and *T. cordifolia* are injected into the anal cavity.
- Useful herbs: Brahmi (*Bacopa monnieri*) is taken continuously for four weeks to obtain long-lasting results. 10 to 20 milliliter dosages are administered twice daily. It is also advised to take Jasad Bhasma in addition to Brahmi. Complications from varicose veins are also treated with plant extracts of ginger (*Zingiber officinale*),

garlic (*Allium cativum*), and onion (*Allium cepa*).

- *Siravyadha* (Bloodletting): *Siravyadha* (bloodletting) is the most crucial para surgical technique and is regarded as the majority of surgical treatments. In reality, *Siravedha* was created in the prehistoric era using a variety of tools. Now a days, *Siravyadha* can be performed with just a simple needle, blade, or scalp.
- Bloodletting using a therapeutic leech, as mentioned by Sushruta in Ayurveda.

Yoga and Naturopathic treatment for varicose vein complications (VVC)

Yoga therapy involves stretches for the neck, shoulders, elbows, wrists, fingers, hips, knees, and hamstring muscles, along with yogic cleansing methods, gentle joint mobilization, asanas (yogic postures), pranayama (voluntarily controlled breathing exercises), deep relaxation techniques (DRT), and Om meditation, has the potential to offer efficacy in managing varicose vein complications [13]. Naturopathy treatment includes full body massage, mud applications, and enema [13].

Exercise therapy and Varicose vein complications (VVC)

Stretching and strengthening of lower limb muscles, as well as aerobic exercises that increase venous return, such as walking, are common components of exercise regimens. Minor movement of the lower limbs can aid in the circulation of venous blood (Bergan 2006). However, a physical exercise programme has been shown in studies to have a variety of benefits, including reduced oedema of the lower limbs, improved haemodynamic performance of the calf muscle through strengthening, and improved cardiorespiratory fitness, which in turn improves functional capacity and QoL

(Padberg 2004, Quilici 2009). In addition, researchers believe that treatments that aim to increase ankle joint movement, with subsequent strengthening of the calf muscle pump, improve calf muscle pump function in the early stages of CVI by increasing the ejection fraction and decreasing the residual fraction, this may be useful in the prevention of disease progression and its consequences (Yang 1999).

Homeopathic treatment for vari vein complications (VVC)

In particular, homeopathy will provide an individualized strategy for treating varicose veins. Homoeopathy offers about ten alternative methods for treating the complications caused by varicose veins [14].

- Arnica, often known as “Leopard’s Bane,” is used to treat varicose veins that feel and appear inflamed and are painful and swollen to the touch.
- Aesculum Hippocastanum (Horse Chestnut): Aesculus hippocastanum is used to treat elongated and purple veins.
- Bellis perenis (Daisy): Bellis perenis is used to treat pregnant women with varicose veins that make it difficult to walk.
- Carbo vegetabilis (vegetable charcoal): When there is mottled skin with enlarged veins, carbo vegetabilis is reported to be a good treatment. Fluoric acidum (Hydrofluoric acid): -Fluoric acidum is utilized for perpetual varicose veins and ulcers.
- Hamamelis (Witch Hazel): This homoeopathic witch hazel is used to treat varicose veins in the legs and thighs that are clogged, swollen, painful, and great.
- Lachesis (Bushmaster snake): This is frequently used as a remedy for the bluish-red swelling associate with varicose veins.

- Pulsatilla (Wind Flower): Pulsatilla is utilized for the treatment of dilated veins in the lower extremities. This botanical remedy may exhibit a pallid bluish hue and induce a sensation of stinging pain, notably observed during the period of pregnancy.
- Sepia (from the inn of the cuttlefish): Sepia is used to treat clogged, purple veins that have become rigid.
- Lycopodium (Club moss): Lycopodium is frequently the preferred treatment for leg discomfort. The results of this pilot study suggested that Arnica D12 might have positive effects in terms of reducing hematoma and pain after surgery [15].

Siddha medicinal treatment for varicose vein complications (VVC)

One of the traditional medical systems is the Siddha system, which is mostly practiced by South Indians. Two approaches are used in the Siddha system of medicine to alleviate issues associated with varicose veins.

- Podi thimirdhal, which involves rubbing turmeric or horse gram flour over the body, with or without camphor [16].
- Conventional elastic stocking: It elevates the foot and provides regular wound dressing [17].

Acupuncture treatment for varicose vein complications (VVC)

In order to treat physical ailments, acupuncture involves inserting tiny needles into certain body parts. The patients typically received acupuncture treatments at the median (LIV-3, St-41, Kid-6, St-25,24, Sp-9). The treatment of venous ulcers significantly improved with acupuncture [18-19].

Results

Since the number of experimental studies is quite less in complementary and alternative medicine for varicose vein complications, it is difficult to justify the effectiveness of varicose vein complications. According to one study, leech therapy (Ayurveda) for 20 males with varicose vein problems reduced edema and limb girth in 95% of patients, reduced hyperpigmentation in 75% of patients, and led to ulcer healing in all patients [20]. Moreover, another case report mentioned that after six sessions of medicinal leech therapy (Ayurveda), swelling and pain are greatly reduced, along with skin discoloration and itching [21]. Thirty patients who had varicose vein issues underwent *Siravedha* (Ayurveda), a form of bloodletting, for 15 days. The results reveal a considerable improvement of RBC count in the cubital vein, hematocrit in the cubital vein, and varicose vein are objective blood parameters that significantly changed following *Siravedha*. Additionally, there was a considerable improvement in the VCSS (Venous clinical severity score) and CEAP (Clinical ethologic anatomic pathophysiologic parameter) [22]. Among individuals with uncomplicated varicose veins, the synergistic effects of yoga and naturopathic interventions led to reduced blood pressure and decreased inflammatory markers, indicating the potential for addressing endothelial tissue inflammation in the microvascular system. A second study looked at 56 KSRP officers who had main varicose vein problems. After three months of yogic treatment, a considerable reduction in symptoms will be seen [23]. According to a different case report, a 38-year-old Indian male with a history of varicose veins for 5–6 years was also suffering from varicose ulcers. The patients have reported that the varicose ulcer has completely disappeared after undergoing the standard homeopathic treatment (Anthracinum

30CH and 200CH twice daily) [24]. A man who received acupuncture treatment had complications with edema, redness, and cyanosis on his toes. The patient reported that there was a decrease in symptoms after the treatment [25]. The 40 patients with difficult varicose veins

exhibited considerable symptom reduction after using traditional Siddha medicines for a month [26]. The experimental evidence of the effect of Complementary and alternative medicine are given in Table 1.

TABLE 1
Experimental evidence of the effect of CAM on varicose vein complications.

Sl. No.	Nature of treatment	Sample size	Interventions	Effects on varicose vein complications	References
1.	Leech therapy (Ayurveda)	20	15 sessions	Reduced edema and limb girth, reduced hyperpigmentation	[20]
2.	Leech therapy (Ayurveda)	1	six sessions	Swelling and pain are greatly reduced, along with skin discoloration and itching	[21]
3.	Siravedha (Ayurveda)	30	15days	Improvement of RBC count in the cubital vein, hematocrit in the cubital vein, and varicose vein	[22]
4.	Yoga and Naturopathy	50	3 months	Reduced blood pressure and decreased inflammatory markers.	[13]
5.	Yoga		3 months	Reduces the symptoms	[23]
6.	Homeopathic treatment (Anthracinum 30CH and 200CH twice daily)	1	1 month	Reduces the symptoms	[24]
7.	Acupuncture	1	-	Reduction of edema, redness, and cyanosis	[25]
8.	Siddha medicines	40	2 months	Reduces the symptoms	[26]

Discussion

The number of experimental studies on the effects of CAM on varicose vein complications is quite low. It is difficult to justify the mechanism through which CAM prevents varicose vein complications. While Yoga and Ayurveda have a good number of research studies to explain the mechanism of how maybe Yoga and Ayurvedic treatment is effective against varicose vein complications.

According to the evidence, the HCy is encouraging endothelial dysfunction, inflammation, and vascular wall leakage. It

was thought to be significantly assisting in the treatment of chronic venous illness [27,28]. Additionally recognized as a possible risk factor for cardiovascular illnesses is the HCy. Increased levels of HCy in the blood have been linked to thrombosis, platelet activation, and endothelial damage [28]. The pathophysiology of chronic vascular problems may be implicated by the HCy because it may promote the interaction between leukocytes and endothelium [29]. The role of biological markers on the development of varicose vein complications is depicted in figure 1. After one month of integrating yoga and naturopathy treatments, the concentration

of HCy decreases in all patients with simple varicose veins. Apoptosis, a programmed cell death, is distinguished by the occurrence of membrane blebs, condensation of cytoplasm, and the initiation of intrinsic endonucleases and specific proteases. An essential physiological process in healthy morphogenesis, tissue control, and development is apoptosis [30]. Varicose vein complications include dysregulated apoptosis and dysregulated cell cycle. Varicose veins have fewer apoptotic cells overall and have less activity than healthy veins [30-32]. The Apoptosis process can be controlled by yoga and meditation [33]. *Withania somnifera* root extract, an ayurvedic herb, may promote apoptosis in murine melanoma cells [34]. Even homeopathy causes tumor cells to undergo more apoptosis [35]. Some studies reported an increase in the hs-CRP protein in patients with varicose veins. Hs-CRP proteins are dramatically decreased by yoga [36]. When HS-CRP proteins are supplemented with *Curcuma Caesis* (Calebin A), they drop in comparison to the control group [37]. The hs-CRP protein is also decreased by homeopathic medicine [38]. The effects of complementary and alternative medicines on varicose vein complications, by altering biological markers is depicted in figure 2.

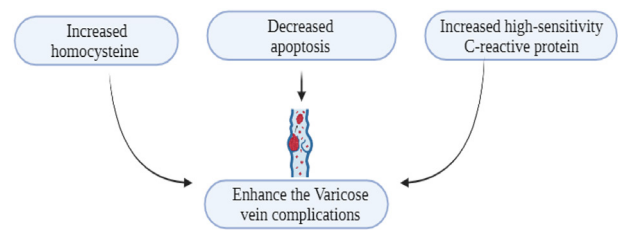


Figure 1) Role of biological markers on the development of varicose vein complications.

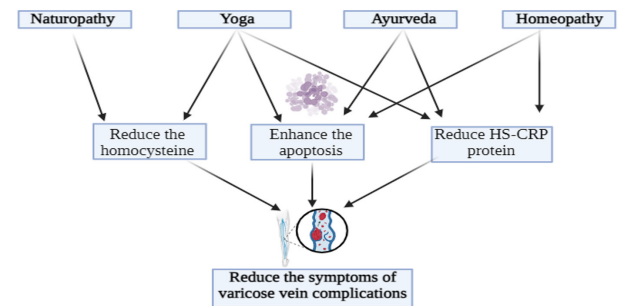


Figure 2) Effects of complementary and alternative medicines on varicose vein complications, by altering biological markers.

Conclusion

Numerous researchers have described the therapeutic approach; however, there are few experimental investigations available. In this review paper, we concluded that complementary and alternative therapies can be used as additional therapy along with conventional therapies in the treatment of varicose vein problems. However, further studies should be conducted so that safer and more reliable results could be extracted.

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