



## **APEX HERBS IN THE MANAGEMENT OF VARICOSE VEIN - A BOON TO CONTEMPORARY TREATMENT**

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### **ABSTRACT:**

Varicose veins is condition comprising of enlarged & twisted veins located in the lower extremities thereby causing disfigurement & disability. It is prevalent in nearly 40 percent of the population, incidence of occurrence being more in females rather than males. Hereditary, obesity, old age, pregnancy, standing for prolong time act as the contributing factors for disease manifestation. Patients with varicose veins may present from asymptomatic to significant symptoms If left untreated, it may lead to complications such as bleeding veins, eczema, skin discoloration, venous ulcers, and deep vein thrombosis . A lot of nonsurgical and surgical interventions are available. Nevertheless in the absence of proper care, relapse of symptoms may occur. In order to overcome these hitches, it is mandatory to seek alternatives such as herbal drugs. Ayurveda herbs possess anti-inflammatory, antioxidant, analgesic, antimicrobial activities. These depicts membrane stabilising effects, increases the synthesis of collagen in tendons and muscles thereby improving skeletal muscle adaptation, increases physiological energy status, relieves fatigue and provides strength thereby rendering potent management for varicose veins. The purpose of this article was to review different herbs which are effective in efficient management of varicose vein disease thereby enlisting top 20 herbs , sorted as a result of extensive literary research done from classics and various online and offline databases.

**Keywords:** varicose veins, siragranthi, herbs, management.

## INTRODUCTION

When superficial veins get enlarged and bulge thereby being getting felt beneath the skin (generally larger than 3 mm in diameter) these are known as varicose veins. It develops due to either weakness of vein wall or loss of valve function. Under gravitational pressure, they get enlarged, twisted, pouched, thickened and superficially appear on the lower extremities. Varicose veins affect up to 40% of adults. Its prevalence is more in women rather than men.<sup>[1]</sup> Varicose veins are widely seen as medically unimportant thereby deserving low priority for treatment.<sup>[2]</sup> Patients with varicose veins present from asymptomatic to significant symptoms.<sup>[3]</sup> In many cases, varicose veins cause no symptoms, appear unattractive and are of cosmetic importance only. However sometimes it may become painful and depict other symptoms involving the leg such as itching,

burning, swelling, tiredness, numbness, heaviness, rashes, skin darkening and skin ulcers. If left untreated, it may further lead to bleeding veins, eczema, skin discoloration, venous ulcers, and deep vein thrombosis (DVT.)

Various risk factors of varicose vein include family history, declining age, pregnancy, prolonged standing or sitting jobs, obesity, constipation, smoking, leg trauma etc.<sup>[4]</sup> Varicose veins hamper the quality of life and the conditions worsen with chronicity. Varicose vein is diagnosed on the basis of clinical manifestation & duplex ultrasound. The varicose veins is described as, The CEAP (Clinical, etiologic, Anatomy and Pathophysiology) classification. The “C” component of CEAP classification holds utmost importance due to its usefulness and practicality in rating the disease severity.<sup>[5]</sup>

C0	No visible or palpable signs of venous disease
C1	dilated inter dermal veins <1mm or non-palpable sub dermal veins 1-3 mm
C2	Varicose veins (diameter of vein >3 mm)
C3	Edema
C4a	Pigmentation or eczema
C4b	Lipodermatosclerosis

C5	Healed venous ulcer
C6	Active venous ulcer
<b>C- Clinical Component</b>	

Asymptomatic patients may be just observed without giving any treatment whereas, symptomatic patients with classification pertaining to C2 to C6 stage of diseases are indicated for management. Various treatment modalities are offered for treating varicose veins like compression stockings, injection sclerotherapy, endovenous ablative therapy, endovenous deep system therapy, surgery- removal of the offending vein (ligation & stripping).<sup>[6]</sup> Hence the patients suffering from varicose veins usually have to undergo various complex treatments, surgical or non-surgical, involving numerous intricate processes. Although, these methods are highly recommended by the physicians, nevertheless they possess certain drawbacks and relapse of symptoms may occur. In order to overcome these hitches, it is mandatory to seek alternatives such as herbal drugs. These drugs possess entire properties which aid in the efficient management of varicose veins and its complications. These drugs not only assure an enduring effect on the

venous disorders but also prove to be cost effective and help patients recover better.

*Ayurveda* considers *Siraja Granthi*(varicose veins), as a swelling of vascular origin. *Acharya Sushruta*, describes the **causative factor** as excessive exertion by an emaciated person. Whereas *Vagbhatta* adds on to causative factors and states that after walking for long, the person suddenly washes the lower limb with cold water henceforth because of sudden change of leg temperature, the leg *sira* (vessels) becomes engorged and are unable to pump the blood properly. **Pathophysiology**: As a result of the above said practices , the *vata*(biological humour)gets vitiated and compresses & squeezes the network of veins ,thereby depicting **Signs & symptoms** of *sira sankocha*(contractions), *sira vishoshana* (dryness) and *granthi* (raised circular swellings) formation, which is very much similar to the presentation of varicose veins which are delineated with the presence of

dilated, elongated, and tortuous veins .**Types -**

Two types of *Siragranthi*(varicose veins), are present one which is immovable & painless, and another which is movable & painful.

**Prognosis-** Painful variety is *krichasadhy* (difficult to cure) whereas the painless variety, bigger in size and present in vital organs is *Asadhy* (incurable).<sup>[7]</sup>

## MATERIAL & METHODS

The purpose of this article was to review different herbs which are effective in efficient management

of varicose vein disease. PubMed, Scopus, Science Direct, Google Scholar and Web of Science databases were explored to study the various potential researches and *Ayurveda classics* were reviewed thoroughly to find the top 20 herbs useful in the management of varicose veins. Various *Ayurveda* texts, published review articles, research papers from the internet have been thoroughly reviewed for the same.

## RESULT

Top 20 herbs sorted from the *Ayurveda classics* are given underneath:

**Table I: Herb details (1-10)**

S. No.	Ingredients Name	Botanical Name	Part used	Properties
1.	<i>Guggulu</i> <sup>[8]</sup>	<i>Commiphora mukul</i>	Resin	<i>Rasayana</i> (rejuvenator), <i>Deepan</i> (increases digestive fire), <i>Balkaraka</i> (provides strength), <i>Kapha vata nashak</i> (relieves disorders of <i>kapha</i> & <i>vata</i> dosha), <i>Vata roga nashaka</i> (relieves diseases due to <i>vata</i> dosha), <i>Granthihara</i> (useful in cystic disorder), <i>Vrananashak</i> (relieves ulcers), <i>Shothahar</i> (relieves inflammation), <i>Sarva doshanashaka</i> (relieves diseases due to <i>vata</i> <i>pitta</i> <i>kapha</i> humour)

S. No.	Ingredients Name	Botanical Name	Part used	Properties
2.	<i>Daru Haridra</i> <sup>[9]</sup>	<i>Berberis aristata</i>	Root bark	<i>Tvakdoshahara</i> (relieves diseases of skin), <i>vranahar</i> (relieves ulcers)
3.	<i>Amalaki</i> <sup>[10]</sup>	<i>Emblica officinalis</i>	Fruit	<i>Rasayana</i> (rejuvenator), <i>Raktapittanashaka</i> (relieves disorders of <i>Rakta &amp; Pitta dosha</i> ), <i>Raktasrav Rodhak</i> (prevents hemorrhage).
4.	<i>Haritaki</i> <sup>[11]</sup>	<i>Terminalia chebula</i>	Fruit	<i>Vranaropaka</i> (wound healing), <i>Agnideepak</i> (increases digestive fire), <i>Rasayana</i> (rejuvenator), <i>Brnhan</i> (strength promoting), <i>Shothahar</i> (relieves inflammation)
5.	<i>Bibhitak</i> <sup>[12]</sup>	<i>Terminalia bellirica</i>	Fruit	<i>Kaphavata nashak</i> (relieves disorders due to <i>kapha &amp; vata dosha</i> )
6.	<i>Kanchnar</i> <sup>[13]</sup>	<i>Bauhini varigata</i>	Stem Bark	<i>Rasayana</i> (rejuvenator), <i>Balya</i> (strength promoting), <i>vrana shodhak</i> (wound healing), <i>vranaropak</i> (wound cleansing)
7.	<i>Shilajeet</i> <sup>[14]</sup>	<i>Asphaltum Punjabianum</i>		<i>Balya</i> (Strength promoting), <i>Shothahar</i> (relieves inflammation), <i>Vatadosha Shamaka</i> (relieves diseases due to <i>vata dosha</i> )
8.	<i>Neem</i> <sup>[15]</sup>	<i>Azadirachta indica</i>	Leaf /stem Bark	<i>Tvakdoshahara</i> (relieves diseases of skin), <i>Rasayana</i> (rejuvenator), <i>Vrana Ropaka</i> (wound healing), <i>Vrana Shodhaka</i> (wound

S. No.	Ingredients Name	Botanical Name	Part used	Properties
				cleansing), <i>Shothahara</i> (relieves inflammation), <i>Kanduhar</i> (relieves itching)
9.	<i>Dalchini</i> <sup>[16]</sup>	<i>Cinnamomum zeylanicum</i>	Stem Bark	<i>Vrana Ropaka</i> (wound healing), <i>Vrana Shodhak</i> (wound cleansing), <i>Vednahara</i> (relieves pain), <i>Vata Pitta nashak</i> (relieves disorders due to <i>vata</i> & <i>pitta dosha</i> ), <i>Balakaraka</i> (strength promoting), <i>Vatanulomaka</i> (correcting functions of <i>vata</i> ), <i>Deepana</i> (enhances appetite), <i>Pachana</i> (promotes digestion), <i>Shonit sthapana</i> (restores normalcy of blood)
10.	<i>Shunthi</i> <sup>[17]</sup>	<i>Zingiber officinale</i>	Rhizome	<i>Ruchikar</i> (promotes appetite), <i>Pachan</i> (digestive), <i>Kaphavatanashak</i> , <i>Shothahar</i> (relieves inflammation), <i>Amanashaka</i> (removes toxins), <i>Ajeernahar</i> (relieves dyspepsia)

**Table II: Herb details(11-20)**

11.	<i>Lahsun</i> <sup>[18]</sup>	<i>Allium sativum</i>	Stem	<i>Vranhar</i> (relieves ulcers), <i>Pachaka</i> (digestive), <i>Balya</i> (strength promoting), <i>Aruchihar</i> (relieves loss of appetite), <i>Shothahar</i> (relieves inflammation), <i>Vatakapha nashaka</i> (relieves disorders of <i>vata</i> and <i>kapha dosha</i> ),
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				<i>Rasayana</i> (rejuvenator)
12.	<i>Mandooparni</i> <sup>[19]</sup>	<i>Centella asciatica</i>	Panchanga	<i>Rasayana</i> (rejuvenator), <i>Balya</i> (strength promoting) , <i>Rakta Shodhak</i> (blood purifying), <i>Vrana Shodhak</i> (wound cleansing), <i>Vrana Ropak</i> (wound healing), <i>Tvakrogahar</i> (relieves diseases of skin)
13.	<i>Chirbilva</i> <sup>[20]</sup>	<i>Holoptelea integrifolia</i>	Stem Bark	<i>Shothahar</i> (relieves inflammation), <i>Kushtahar</i> (relieves diseases of skin)
14.	<i>Manjistha</i> <sup>[21]</sup>	<i>Rubia cordifolia</i>	Root	<i>Shothahar</i> (relieves inflammation), <i>Tvakdoshahar</i> (relieves diseases of skin), <i>Raktashodhak</i> (blood purifying), <i>Vrana ropak</i> (wound healing), <i>Vedana sthapaka</i> (relieves pain)
15.	<i>Sariva</i> <sup>[22]</sup>	<i>Hemidesmus indicus</i>	Root	<i>Agnivardhak</i> (increases digestive fire), <i>Rasayan</i> (rejuvenator), <i>Balya</i> (strength promoting), <i>Daha shamak</i> (relieves burning), <i>Kustahar</i> (relieves diseases of skin)
16.	<i>Shallaki</i> <sup>[23]</sup>	<i>Boswellia serrata</i>	Niryasa	<i>Pustikar</i> (nourishing), <i>Raktapitta nashak</i> (relieves disorders due to rakta and pita dosha), <i>Kustahara</i> (relieves diseases of skin), <i>vrana har</i> (relieves ulcers)
17.	<i>Nirgundi</i> <sup>[24]</sup>	<i>Vitex.negundo</i>	leaves	It is <i>Shoolahara</i> (relieves pain), <i>Shothahara</i> (relieves swelling), <i>Kushtahara</i> (relieves diseases of skin), <i>Aruchinashak</i> (relieves loss of appetite),

				<i>Balya</i> (strength promoting), <i>Rasayana</i> (rejuvenator)
18.	<i>Kaunch</i> <sup>[25]</sup>	<i>Mucuna.</i> <i>prurita</i>	Seed	It is <i>Vatashamaka</i> (relieves disorders of <i>vata dosha</i> ), <i>Kaphapittanashak</i> (relieves disorders of <i>kapha &amp; pitta dosha</i> ), <i>Raktadoshanashak</i> (relieves disorders due to <i>rakta dosha</i> ), <i>Balya</i> (strength promoting).
19.	<i>Bala</i> <sup>[26]</sup>	<i>S.cordifoia</i>	Root	It is <i>Vatavikaranashaka</i> (relieves disorders due to <i>vata dosha</i> ), <i>Raktavikaranashak</i> (relieves disorders due to <i>Rakta dosha</i> ), <i>Vrananashaka</i> (relieves ulcers), <i>Balya</i> (strength promoting), <i>Rasayana</i> (rejuvenator)
20.	<i>Sehchar</i> <sup>[27]</sup>	<i>Barleria.prioni</i> <i>tis</i>	Root/ Leaf	It is <i>Kaphahara</i> (relieves disorders due to <i>Kapha dosha</i> ), <i>Kanduhara</i> (relieves itching), <i>Shothahara</i> (relieves swelling), <i>Vranaropan</i> (wound healing)

## DISCUSSION

Nearly 40 percent of population is affected with varicose veins. Conventional system of medicine does not have any varicose veins treating drugs to their credit till date. They offer lot of nonsurgical and surgical treatments but in the absence of proper care relapse of symptoms may occur. In order to overcome these hitches, it is mandatory

to seek alternatives such as herbal drugs. In *Ayurveda* classics disorder named *Sira granthi* has clinical manifestations like i.e. *Sira sankocha* (contractions), *Sira Vishoshana* (dryness) and *Granthi* (raised circular swellings) formation, which is very much similar to the presentation of varicose veins which are depicted with the presence of

dilated, elongated, and tortuous veins. In many cases, varicose veins cause no symptoms, appear unattractive and are of cosmetic importance only. However it may become painful and involve other symptoms like itching, burning, swelling, tiredness, numbness, heaviness, rashes, skin darkening and skin ulcers. If such condition is left untreated, it may further lead to bleeding veins, eczema, skin discoloration, venous ulcers, and deep vein thrombosis (DVT.)

Hence *Ayurveda* treatment for *Siragranthi* (varicose veins), aims to balance the *Vata*, *Pitta* & *Kapha doshas* and provide inner strength by *balya* & *rasayana* treatment. *Ayurvedic* literature enlists many formulations and single drugs that provide a solution for the same. Various herbs enlisted in this paper help in the management of disease by its *Shoolhara* (relieves pain), *Shothahara* (relieves inflammation), *Rasayana* (rejuvenator) *Balya* (strength promoting), *Tridoshahara* (relieves vitiation of *vata*, *pitta*, *kapha dosha*), *Vranahara* (relieves disorder due to wounds), *Raktadoshahara* (relieves disorder of blood), *Agnivardhaka* (increase digestive fire), *Kanduhara* (relieves itching), *Dahahara* (relieves burning sensation), *Brnhan* (nourishing) actions. Further it was studied

in depth from scientific point of view so as to understand the probable mechanism of action of various herbs contributing in management of the varicose veins disease.

*Guggulu* (*C.mukul*) contains guggulu sterones depicting anti-inflammatory, antioxidant, anti-arthritic activity.<sup>[28,29,30]</sup> *Daruharidra* (*Berberis aristata*) ethanolic extract contains berberine and tetrahydropalmatine, as active metabolites which were found to be responsible for wound healing, demonstrating considerable wound contraction & epithelisation time.<sup>[31]</sup> It is very much documented that patients with chronic leg ulcers tend to have lower levels of vitamin C in their body.<sup>[32]</sup> *Amalaki* is a rich source of Vitamin C, or ascorbic acid, which in turn participates in several important functions in the vascular bed in support of endothelial cells i.e. prevents cell damage owing to its antioxidant properties, promotes collagen synthesis, strengthens the blood vessels, stimulates endothelial proliferation, inhibiting apoptosis, scavenging radical species, and sparing endothelial cell-derived nitric oxide to help modulate blood flow. Although it may not be able to reverse inflammatory vascular diseases but plays an essential role in preventing the

endothelial dysfunction thereby preventing varicose veins from worsening.<sup>[33]</sup> Hydroalcoholic extract of *Haritaki* (*Terminalia chebula*) fruits depict significant anti-inflammatory, antioxidant, anti-lipid peroxidative and membrane-stabilizing effects.<sup>[34]</sup> *Bibhitak* (*Terminalia bellirica*) fruit aqueous and ethyl acetate extracts and its bioactive compound ellagic acid (EA) depict anti-inflammatory activity & have potential to mitigate oxidative stress.<sup>[35]</sup> *Kanchnara* (*B. variegata*) contains kaempferol which is reported to exhibit radical scavenging activity thereby depicting its significant antioxidant effect.<sup>[36]</sup> *Shilajatu* (*Asphaltum punjabianum*) contains fulvic acid (FA) complex that rapidly increases the synthesis of collagen in tendons and muscles thereby improving skeletal muscle adaptation, increases physiological energy status & relieves fatigue.<sup>[37]</sup> *Neem* (*Azadirachta indica*) depicts antibacterial and free-radical scavenging efficacy.<sup>[38]</sup> Polyphenol Fraction of *Dalchini* (*Cinnamomum zeylanicum*) bark exhibits analgesic and anti-inflammatory effects.<sup>[39]</sup> *Shunthi* (*Gingiber officinale*) rhizomes ethanol extract possesses analgesic, anti-inflammatory properties.<sup>[40]</sup> Garlic has the potential to improve vascular function.<sup>[41]</sup>

Rotenoids & Boeravinone from *Boerhaavia diffusa* act as potential anti-inflammatory agents.<sup>[42]</sup> *Mandukparni* (*C. asiatica*) contains asiaticoside, enhances the induction of antioxidants, renders cell protection against oxidative damage, contributes in wound healing, depicts anti-inflammatory and anti-Vascular Leakage effects.<sup>[43]</sup> *Chirbilva* (*H. integrifolia*) exhibits radical scavenging activity thereby depicting its antioxidant effect. Its methanol extract exhibit significant antibacterial activity.<sup>[44]</sup> *Manjishtha* (*R. cordifolia*) contains manjistin, rubiadin depicting antioxidant, anti-inflammatory, analgesic and antibacterial activity.<sup>[45]</sup> *Sariva* (*H. indicus*) contains hemidesminine, triterpenes, hemidesterol, flavonoids etc. It depicts antioxidant, anti-inflammatory, analgesic, bacteriostatic and antithrombotic activity.<sup>[46]</sup> *Shallaki* (*B. serrata*) contains boswellic acid depicting significant anti-inflammatory, antimicrobial activity.<sup>[47]</sup> *Nirgundi* (*V. negundo*) exhibits prostaglandin synthesis inhibition thereby depicting anti-inflammatory, analgesic, antioxidant, antimicrobial activities. It depicts membrane stabilising effects.<sup>[48]</sup> *Bala* (*S. cordifolia*) contains fumaric acid, ferulic acid. It depicts antioxidant, analgesic, antifungal,

antibacterial, wound healing activity promoting stronger epithelial cell growth and increases collagen content.<sup>[49]</sup> *Kaunch (M. prurita)* contains L-dopa & contains large amounts of phenolic compounds, exhibiting high anti-oxidant and free radical scavenging activity. It increases rate of wound contraction, skin breaking stem and granulation tissue formation depicting wound healing activity.<sup>[50]</sup> *Sehchar (Barleria prionitis Linn)* methanolic extract depicts anti-inflammatory and anti-arthritis activities.<sup>[51]</sup>

## CONCLUSION

Numerous patients suffering from varicose vein usually undergo complex treatments i.e. Surgical and non- surgical involving so many complex processes, even post treatment due to lack of proper care relapse of signs symptoms of the disease occurs. Hence there is a dire need to recognise drugs which naturally strengthen the veins and detoxify the blood. Ayurveda system of medicine offers promising results in effective management of varicose veins and its complications. These drugs not only assure an enduring effect on the venous disease but they are even cost effective thereby reducing the socioeconomic burden.

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