

## A CRITICAL REVIEW ON TRADITIONAL HERBAL DRUGS: AN EMERGING ALTERNATIVE DRUG FOR VARICOSE VEINS

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### ABSTRACT

Herbal medicine is a natural remedy for all the disease. Varicose veins are dilated, tortuous, elongated superficial veins that are usually seen in the legs. A large UK population study has shown age adjusted prevalence's of 40% in men and 32% in women, although women more often are getting affected by varicose veins. The patient will come across various signs and symptoms and diagnosis to find out the problem and get prescribed to some of allopathic medicines which are harmful to humans. Furthermore, in spite of substantial progress in the study of the biological and physical manifestations of kidney stones, there is no satisfactory drug to use in clinical therapy in the management of varicose veins. The present review therefore critically evaluates the potential usefulness of herbal medicines in the management of varicose veins.

**KEYWORDS:** Varicose veins, Herbs, Therapy.

### INTRODUCTION

The World Health Organization (WHO) has recently defined traditional medicine (including herbal drugs) as comprising therapeutic practices that have been in existence, often for hundreds of years, before the development and spread of modern medicine and are still in use today. Herbal medicine is still the mainstay of about 75–80% of the world population, mainly in the developing countries, for primary health care because of better cultural acceptability, better compatibility with the human body and lesser side effects.<sup>[1]</sup> Varicose veins is a

common health complaint in people like security guards, watchmen, cops, soldiers, vehicle pullers, porters, rikshaw pullers, launderers, drivers, teachers etc.<sup>[2]</sup>

The prevalence of these two conditions is astonishing. In population studies the prevalence of varicose veins has been reported to be 10-15 percent for men and 20-25 percent for women.<sup>[3]</sup> In a recent cross-sectional study, the age-adjusted prevalence of varicose veins was 58 percent for men and 48 percent for women.<sup>[4]</sup> Over three-quarters of individuals in the United States have hemorrhoids at some point in their lives, and about half of the population over age 50 requires treatment.<sup>[5]</sup> The Merck Manual defines hemorrhoids as “Varicosities of the veins of the hemorrhoidal plexus, often complicated by inflammation, thrombosis, and bleeding”.<sup>[6]</sup>

### **Need and Importance of Herbal Medicine**

As we mention above the cure of diabetes mellitus is mentioned in Ayurveda. Ayurvedic researches undertaken during the last 50 years have not been very rewarding, except for the extremely useful exercise of literary research. This is the big question mark on synthetic drugs for answering the varicose veins.

### **Etiology of Varicose veins, Cure and Strategy**

#### **Epidemiological Factors**

Chronic venous disease of the lower limbs is one of the most common medical conditions seen in clinical practice.<sup>[7]</sup> Definitions range from “any prominent superficial vein in the lower extremity” to “a vein which has permanently lost its valvular efficiency and, as a result of continuous dilation under pressure, in the course of time becomes elongated, tortuous, pouched and thickened.” Callam, reviewing an analysis of published data on the epidemiology of varicose veins, assessed all of the studies with regard to age range and distribution of study population; criteria used to diagnose varicose veins; geographical site of the study population; and methods used to assess venous disease. He reported half of the adult population manifesting minor venous disease, and less than half (women 20-25%; men 10-15%) having visible varicose veins.<sup>[8]</sup>

#### **Pathogenesis and Etiological Factors<sup>[3, 9]</sup>**

The pathogenesis of varicose veins is thought to include increased venous and capillary pressures, increased capillary permeability, chronic edema, repeated inflammation, and stasis. Some of the risk factors associated with developing varicose veins are obesity, high systolic

blood pressure, cigarette smoking, low levels of physical activity, pregnancy, abdominal or pelvic asses, ascites, and occupations that require prolonged standing.

### **Aggravating factors**

Genetic predisposition, chronic constipation, tight clothing, sedentariness or lack of exercise, pregnancy, obesity and aging all contribute.

### **Sedentariness**

Standing in one place for extended periods or sitting for long periods of time can cause venous pooling in the lower legs since the flow of blood is not being assisted by the muscular pump. In addition, the weight of your legs pressing your veins against the chair can impede the flow of blood and crossing your legs while sitting will add to the problem.

### **Tight clothing**

Constrictive clothing can block the flow of blood in the venous system adding to the venous distention.

### **Chronic constipation**

This can lead to hemorrhoids although it can also be a factor in varicose veins of the legs and groin area. While most veins have valves to prevent back flow of blood, the veins extending from the anus to the liver lack them. Gravity imposes a constant burden and any abdominal pressure makes it worse. Straining during the lifting of a heavy object, coughing or straining at stool can cause pressure build up in the rectal area. Since chronic constipation causes straining at stool, it can lead to hemorrhoids.

### **Liver dysfunction**

The rectal veins lead to the portal vein of the liver via the mesenteric vein; liver dysfunction can cause a blockage in the flow of blood from the rectal veins to the portal vein which, in turn, can cause a back flow with possible venous distention. Since hemorrhoids often accompany sluggish livers, it is common in oriental medicine and naturopathic medicine to treat the liver while treating an individual with varicosities.

### **Pregnancy**

Pregnant women are often plagued by varicose veins, edema and hemorrhoids since the woman's legs are bearing greater weight than ever before. At later stages of pregnancy, there also can be compression of veins, depending on the position of the fetus. Her blood volume

will increase by 30- 40% placing an added stress on her veins and there is an increase in the hormone, progesterone, which will slow down her gastrointestinal tract, thereby leading to constipation. Decreased exercise will also add to the problem.

## **Symptoms**

### **Leg swelling**

This is an uncommon symptom of varicose veins- other causes are much commoner. Unilateral swelling of a leg with big varicose veins is the most typical presentation.

### **Thrombophlebitis**

Superficial thrombophlebitis (“phlebitis”) can complicate varicose veins. The risk of deep vein thrombosis is remote, but in a case series it occurred very occasionally if phlebitis extended above the knee.<sup>[10]</sup>

Veins may sometimes remain permanently occluded. Treatment of the varicose veins may be appropriate if phlebitis is recurrent or severe, or if the veins also cause other symptoms. Note that thrombophlebitis is not caused by infection, and treatment with antibiotics is unnecessary: drug treatment should be limited to anti-inflammatory analgesics.

### **Bleeding, skin changes, and ulcers<sup>[11]</sup>**

These are the complications of varicose veins that mandate consideration of treatment. They are all associated with high venous pressure in the upright position, as a result of incompetent venous valves.

Bleeding is uncommon and usually occurs from a prominent vein on the leg or foot with thin, dark, unhealthy skin overlying it.

“Skin changes” range from eczema, through brown discoloration, to florid lipodermatosclerosis with induration of the subcutaneous tissues. Sometimes this can become painfully inflamed -“inflammatory liposclerosis”- which is often misdiagnosed as phlebitis or infection. If neglected, lipodermatosclerosis can lead to ulceration, which can be chronic and troublesome: treatment of ulcers will not be considered in this review.

## **Strategy for Treatment of Varicose veins**

### **Conventional Treatment**

Standard treatment for varicose veins is mechanical compression, sclerotherapy, or surgery. Compression therapy is achieved with lightweight hosiery for small, mildly symptomatic varicose veins. Advanced cases require a heavier elastic support stocking. Mechanical compression is inconvenient, uncomfortable, and subject to poor compliance.

### **Medicine for Treatment of Varicose veins**

Additionally patients can apply the elastic bandage too tightly, producing a tourniquet effect. Even when applied correctly, bandages can rapidly loosen and become ineffective.<sup>[6]</sup> Injection sclerotherapy is used to treat all degrees of primary varicose veins. The aim of sclerotherapy is to destroy the vein by fibrosis. Sodium tetradecyl sulfate 1% solution is injected, while the vein is emptied of blood, causing damage to the intima of the vein and permanent fibrosis.

### **Therapy**

Sclerotherapy does not require hospitalization, and the patient resumes normal activity after the procedure. Painful varicose veins with recurrent phlebitis or skin changes are considered indications for surgery.<sup>[6]</sup> General practitioners must refer to a vascular surgeon for surgery and should consider this only if indicated.

## **Dietary and Hydrotherapy Approaches**

### **Dietary Recommendations**

Diet therapy is a widely accepted modality in the management of varicose veins. Many physicians consider the first line of therapy to be a high fiber diet with commercial fiber supplements and enough oral fluids to produce soft, but well formed and regular bowel movements. A low fiber diet can result in small hard stools that can cause patients to strain during bowel movements.

This strain increases intra-abdominal pressure, subsequently increasing pressure on the veins of the lower legs. Over time this can deteriorate vascular integrity. A high fiber diet is an important component to the prevention and treatment of varicose veins. This in addition to hydrotherapy and avoiding activities that require the patient to strain are the foundation of the approach of many family practitioners to these conditions.

**Prevention of varicosities & treatment<sup>[12]</sup>**

To assist the body's circulation, exercise is vital. Aerobic exercise such as walking, running, bike riding, or cross country skiing would be best, but a brisk 20 minute walk daily is a simple and easy exercise.

**Diet**

It is also important. Eat simple nourishing meals. Keep your bowels regulated by the food you eat. A diet with 65-70% complex carbohydrates, 15-20% protein and 15% oil is necessary for optimal health. Include a daily minimum of one serving of green leafy vegetables and two uncooked fruits or vegetables.

**Vitamins and minerals**

The following nutrients are known to be beneficial to the structure and integrity of the blood vessels. It is best to get nutrients from food and use supplements as a last resort. Foods high in that particular nutrient are listed below.

**Vitamin A (10,000 IU)**

Liver, Carrots, dandelion greens, spinach, parsley, plantain, nettles, your basic green foods and yellow-orange vegetables, liver.

**Vitamin B complex (10-100 mg)**

Yeast, grains, organ meats, nuts, legumes.

**Vitamin C (500-3,000 mg) to bowel tolerance is best**

Currants, broccoli, rose hips, berries, fruit in general, parsley, brussel sprouts, green veggies.

**Vitamin E (200-600 IU)**

Extra virgin olive oil, leafy greens and watercress, nuts in general, egg yolks, wheat germ.

**Zinc (15-30 mg)**

Oysters, whole grains, brewer's yeast, spinach, sunflower seeds, pumpkin seeds.

**Bromelain (500-750 mg TID at 1,500 MCU)**

Best to use a supplement.

**Flavonoids (100-1000 mg mixed flavonoids)**

Fruits high in flavonoids are cherries, blueberries, hawthorne berries (and other berries which are blue-red), Saint John's Wort, Calendula, lemons, oranges and rosehips. The flavonoids in these foods reduce capillary fragility and increase the integrity of the venous walls. Rutin, hesperidin and quercetin are examples of flavonoids.

Other foods which aid the circulatory system are okra, oats, beets, artichokes, wheat germ, green leafy vegetables, raw garlic, onions and foods high in lecithin, such as soybeans. These last three are good to eat daily as they help regain and retain elasticity in the blood vessels.

**Constipation****Fiber, Fiber, and more Fiber**

Remember that little saying "An apple a day keeps the doctor away?" It applies in the case of hemorrhoids.

**Psyllium seeds**

1 teaspoon seeds in 1/2 cup water, let sit 15 minutes, drink and follow with one cup water. Use a few times per day or as often as necessary. Can also use Pectin, Guar gum, Slippery elm, etc.

**Warm lemon water**

Drink a cup in the morning before breakfast.

**Ginger tea**

Drink one cup warm water with 1 teaspoon ginger before bed.

**Laxatives** (should always be a last resort)

For herbs to really get the bowels going: Yellow dock (milder), Oregon grape, Rhubarb, Cascara, Buckthorn, Senna, Aloe. Most bitter herbs will stimulate the bowels to move.

**Hot baths, hot water bottles and abdominal massage** can also relieve constipation.

**FIRST AID FOR VARICOSE VEINS****Baking soda**

Can be applied externally, wet or dry, to take the itch away. It may burn or feel hot for a short time.

**Grated raw potatoes or apples**

Can be applied to ease swelling and pain.

**Witch hazel, Oak bark or other astringent herbs**

Can be applied to reduce swelling, pain, and curb bleeding.

**Red rose petals**

Can be made into a poultice and applied to reduce swelling and bleeding. It is astringent & Vulnerary.

**An herbal sitz bath**

Use one of each of the following

1. An astringent herb such as witch hazel, yarrow, oak bark, or geranium.
2. A vulnerary herb such as calendula, rose petals, or plantain.

**Apple cider vinegar**

Can also be used as a wash to ease the pain of varicosities.

**Poultices, fomentations, suppositories**

Use astringent and vulnerary herbs.

**MORE TIDBITS OF ADVICE****Varicose Veins of the Leg****Support Stockings**

Go all the way up to the hips, raise legs high for 10 minutes prior to putting them on.

**Leg Massage**

A 5-10 minute daily massage, working with the flow of blood, will improve circulation.

**Inverted yoga postures**

The head stand, plow or shoulder stand.

**Cold morning bath** (For all varicosities.)

Vigorously rub your entire body with a cold wet towel, then a dry one, to improve circulation.



**Sitz baths for hemorrhoids**

Hot and cold alternating sitz baths. Sit in a pan of hot water for 3 minutes, then a cold pan for 30 seconds. The water needs to cover your entire pelvic area. Do this for 10-20 minutes, 3 times per day. Always end with the cold treatment.

**TO BE AVOIDED**

Obesity, tight clothing, crossing legs, sitting or standing for long periods, high heeled shoes (they do not allow full natural contraction of leg muscles), knee high stockings, constipating food, lifting heavy objects incorrectly and straining at the toilet.

**HERBS FOR VARICOSITIES****External applications**

The following herbs can be used as poultices, sitz baths, oils, suppositories or fomentations.

**Witch hazel, Geranium, Oak bark, Yarrow**

These plants are largely effective because of their astringent action which causes tissue constriction, including the veins. See astringent herbs below.

**Saint John's wort, Calendula, Ruta, Arnica**

These herbs support normal venous tissue integrity and are anti-inflammatory.

**Comfrey, Slippery elm, Plantain**

These plants are mucilaginous and have a demulcent effect thereby soothing and healing irritated tissues. All three of these plants are well known for their ability to speed the healing process when applied to irritated tissue.

**Butcher's broom**

Ruscogenins in this plant have been shown to inhibit inflammation and induce venous constriction.

**Internal applications** (detailed descriptions of these herbs follow this list)

Stone root, Butcher's broom, Cinnamon, Gotu kola, Witch hazel, Geranium, Oak bark, Yarrow, Saint John's wort, Calendula, Horse chestnut, Liver herbs (see below), Cayenne, Garlic, Onion, Ginger.

**INTERNAL HERBS FOR VARICOSITIES****1. Butcher's broom - *Ruscus aculeatus*<sup>[13, 14]</sup>**

**Family:** Liliaceae or Lily family.

**Part used:** root.

**Taste/smell:** soapy taste.

**Dosage:** 1 heaping teaspoon per cup water (decocted) or 5-30 drops 1:5 dry liquid extract, 1-3 times per day in a little water.

**Use:** Anti-inflammatory, vasoconstrictor, antihemorrhagic. Butcher's broom acts upon the venous system and is used for varicosities, especially hemorrhoids. It causes the swelling of hemorrhoidal varices to go down and has a tonic effect on the rectal blood vessels.

**Constituents:** Contains ruscogenin and neoruscogenin which have been shown to have anti-inflammatory and vasoconstrictive activities.

**2. Gotu kola - *Centella asiatica*<sup>[15, 16]</sup>**

**Family:** Umbelliferae or Parsley family

**Part used:** whole plant

**Taste/Smell:** spicy, fragrant

**Dosage:** 1 tablespoon per cup water (infused) or 20- 60 drops of 1:1 fresh liquid extract, 1-4 times per day.

**Use:** Anti-inflammatory, diuretic, laxative, vulnerary, antiseptic, circulatory stimulant, increases endurance and energy. Ingestion helps prevent scarring. Gotu kola is used externally and internally to accelerate the healing time in wounds and ulcers. It is also used for sluggish digestion, to improve memory, high blood pressure, abscesses, rheumatism, fever, ulcers, leprosy, general skin eruptions, varicose veins, nervous disorders and jaundice. It has a calming and supportive effect on the nervous system. Centella has the potential to enhance connective tissue integrity, elevate antioxidant levels in wound healing, and improve capillary permeability.

**Constituents:** *Centella asiatica* are combinations comprised of asiatic acid (30%), madecassic acid (30%), and asiaticoside (40%). The centella extract TTF (total triterpenic fraction) is comprised of asiatic acid and madecassic acid (60%) in a ratio not clearly defined, in combination with asiaticoside (40%).

**3. Horse chestnut - *Aesculus hippocastanum*<sup>[17, 18]</sup>**

**Family:** Hippocastanaceae.

**Part used:** ripe chestnut and bark

**Taste/Smell:** bitter, slightly pungent

**Dosage:** 1-5 drops of 1:5 dry liquid extract, 1-3 times per day in a little water.

**Use:** It is astringent, improves vascular resistance and reduces pathologically induced capillary wall permeability.

**Constituents:** It contains aescin which is antiexudative, anti-edematous, anti-inflammatory and decreases capillary permeability (apparently due to inhibition of lysosomal enzymes).

#### **4. Stone root - *Collinsonia canadensis***

**Family:** Lamiaceae or Mint family

**Part used:** root

**Taste/smell:** astringent

**Dosage:** 1-2 teaspoons herb per cup water (decocted) or 20-60 drops of 1:4 dry liquid extract, 1-4 times per day.

**Use:** Alterative, diuretic, astringent, stimulates and tones the alimentary mucous membranes, suitable for atonic conditions. Vaso-contracting to the portal system so is indicated for pelvic/rectal congestion secondary to portal back-pressure and venous stasis. Used for gastroenteritis with diarrhea, hemorrhoids and laryngeal inflammation. Stone root causes emesis if the aerial parts are used, but the root has long been used for hemorrhoids, specifically in patients with hard dry stools.

**5. Cayenne, Garlic and Ginger** are used for their fibrinolytic quality. (Fibrin and fat are deposited in tissue near varicose veins which cause the skin to become hard and lumpy.) These herbs also decrease the risk of thrombus formation in thrombophlebitis.

#### **6. Agrimony - *Agrimonia* spp.**

**Family:** Rosaceae or Rose family

**Part used:** aerial parts

**Taste/smell:** slightly bitter, astringent

**Dosage:** 1 heaping teaspoon per cup water (infused) or 10-40 drops of 1:1 fresh liquid extract, 3 times per day in a little water.

**Use:** Diuretic, astringent, stimulating gastrointestinal tonic. It is also used for hepatic atony, enuresis or urinary incontinence due to atony.

**7. Bayberry - *Myrica cerifera***

**Family:** Myricaceae or Wax Myrtle Family

**Part used:** bark

**Taste/smell:** astringent

**Dosage:** 1 teaspoon per cup water (decocted) or 1- 30 drops of 1:5 dry liquid extract, 1-3 times per day in a little water.

**Use:** Astringent, styptic, tonifying for atonic tissues with discharges due to over-relaxation. Used for passive hemorrhages, ulceration of the mucous membranes and digestive tract, venous atony and congestion.

**Contraindications:** The wax on young branches can be irritating and there are constituents in the wax which are reported to be carcinogenic. Contraindicated in pregnancy.

**8. Cinnamon - *Cinnamomum spp.***

**Family:** Lauraceae

**Part used:** inner bark

**Taste/Smell:** pungent, aromatic, sweet

**Dosage:** 1 teaspoon per cup water (infused 25 minutes) or 10-60 drops of 1:4 dry liquid extract or 1-5 drops essential oil—the larger doses are used for hemostatic effects. Do not use these larger doses repetitively.

**Use:** Astringent, aromatic stimulant, carminative, hemostatic, antiseptic, flavoring, antibacterial,

antifungal, gastrointestinal tonic and warming herb. Also used for passive pulmonary, gastric, intestinal and renal bleeding. It stimulates and then depresses the nervous system, corrects nausea and vomiting, and is used in small amounts for digestive irritation.

**Contraindications:** Contraindicated in pregnancy and for those allergic to cinnamon.

**9. Geranium - *Geranium maculatum***

**Family:** Geraniaceae

**Part used:** root

**Taste/Smell:** astringent

**Dosage:** 1 teaspoon per cup water (decocted) or 10- 60 drops 1:3.5 dry liquid extract, 1-4 times per day in a little water.

**Use:** Used as a styptic and for atonic tissues with discharges due to over-relaxation, passive hemorrhages, ulceration of the mucous membranes and digestive tract, venous atony and

congestion. This herb's astringency makes it useful in any instance where there are abundant and debilitating discharges.

**Constituents:** Contains gallic acid, tannic acid, gum, pectin, starch, resin. Tannin is highest in spring roots collected prior to flowering.

#### 10. White oak (other oaks can be used) - *Quercus alba*

**Family:** Fagaceae or Oak family

**Part used:** bark

**Taste/smell:** astringent

**Dosage:** 1-2 teaspoons per cup water (decocted) or 10-60 drops of 1:5 dry liquid extract, 1-4 times per day.

**Use:** Used as an astringent, styptic, for mucous membrane irritation, passive hemorrhages and for venous laxity and congestion, such as bleeding hemorrhoids and other varicosities.

**Contraindications:** Contraindicated for external use with extensive skin surface damage. Strong, full baths contraindicated in cardiac insufficiency stages III and IV (NYHA), febrile infectious disorders and weeping eczema over a large area.

#### 11. Witch Hazel - *Hamamelis virginiana*

**Family:** Hamamelidaceae family

**Part used:** bark

**Taste/smell:** astringent

**Dosage:** 1-2 teaspoons per cup water (decocted) or 10-60 drops of 1:4 dry liquid extract, 1-4 times per day.

**Use:** Used as an astringent, styptic, for passive hemorrhages, wounds and local inflammations. Used for venous laxity and congestion, such as hemorrhoids and other varicosities.

**Contraindications:** In sensitive individuals, irritation of the stomach may occur. In rare cases, witch hazel's tannins may cause liver damage.

#### 12. Yarrow - *Achillea millefolium*

**Family:** Asteraceae or Aster family

**Part used:** flowers, leaves

**Taste/smell:** Bitter, aromatic, pungent

**Dosage:** 1 teaspoon per cup water (infused) or 10-30 drops of 1:1 fresh liquid extract, 1-4 times per day.

**Use:** Yarrow is a bitter tonic, antiseptic, styptic, stimulating diaphoretic, anti-inflammatory and anodyne. It is used for atonic and relaxed tissues where there is free discharge or massive bleeding of bright red blood, and for diarrhea. Also used for bleeding hemorrhoids, excessive menstrual flow and vaginitis.

**Constituents:** Contains achilletin and achilleine (hemostatic), beta iso-thujone, coumarin, chamazulene, apigenin and steroidal B-sitosterol.

**Contraindications:** Beta iso-thujone can cause vomiting, stomach and intestinal cramps, retention of urine and in serious cases, renal damage, vertigo, tremors and convulsions. Beta iso-thujone is alcohol soluble so aqueous extracts contain less of it. Allergic contact dermatitis can occur with external use of yarrow on sensitive individuals. Discontinue external use if a rash occurs. Contraindicated in pregnancy.

### 13. Slippery elm - *Ulmus spp. (rubra, fulva)*

**Family:** Ulmaceae or Elm family

**Part used:** inner bark

**Taste/smell:** a little like maple syrup without the sweetness, astringent, mucilaginous

**Dosage:** 1 tablespoon powdered herb per cup water mixed into a slurry.

**Use:** A mucilaginous demulcent, diuretic, and antiinflammatory. Used for soothing mucous membrane irritation in the gastrointestinal tract, respiratory tract and urinary tract. Used internally for inflamed respiratory tract disorders, inflammation of the mouth, throat, stomach, intestines, bladder, urethra. Used externally for wounds, burns, ulcers, and all skin disorders with inflammation.

### 14. Psyllium - *Plantago arenaria /ovata/asiatica*

**Family:** Plantaginaceae or Plantain family

**Part used:** seed

**Taste/smell:** mucilaginous, bland, no noticeable smell

**Dosage:** 1-2 teaspoons are soaked in a cup of water. Drink and follow by a second cup of water. If constipated, drink 2 glasses of water after taking the herb.

**Use:** Used to soothe gastrointestinal mucosa, as a demulcent, bulking agent, used for both constipation and diarrhea.

**Contraindications:** Contraindicated in bowel obstruction. It is important to take adequate liquid with these seeds.

**15. Flax seed - *Linum usitatissimum*****Family:** Linaceae**Part used:** seed**Taste/smell:** mucilaginous, oily**Dosage:** 1 tablespoon crushed seeds per cup cold water, let sit until partially dissolved, then drink. Follow with a second cup of water. Externally, used as a poultice by powdering the herb and adding enough water to make a paste.**Use:** Mucilaginous, bulking and lubricating agent used in chronic constipation and also used in the treatment of many chronic diseases, such as arthritis and psoriasis. Because it is high in omega-3 fatty acids, it can be used in the prevention of arteriosclerosis.**Contraindications:** Take with plenty of liquid. Contraindicated in bowel obstruction.**Vulnerary Herbs**

Vulneraries decrease inflammation and heal irritated tissue. These herbs are primarily used externally as pastes, poultices, oils, suppositories or sitz baths.

**16. Calendula - *Calendula officinalis*****Family:** Asteraceae or Aster family**Part used:** flowers prior to fully opening**Taste/smell:** slightly bitter, salty**Dosage:** 2-3 heaping tablespoons in 1 cup water (infused) or 20-50 drops 1:5 dry liquid extract, 1-4 times per day in a little water. Fresh plant succus is best for external use on wounds.**Use:** Antiseptic, anti-inflammatory, choleric, demulcent, vulnerary, immune stimulant, anti-viral, supports creation of normal connective tissue structure. Used for healing wounds, burns, bruises, boil, rashes. It promotes the formation of granulation tissue.**Constituents:** Contains essential oil, flavonol glycosides, saponins, triterpene alcohols, sterols, carotenes and xanthophylls, polysaccharides, tannins and other constituents.**17. Comfrey - *Symphytum officinalis*****Family:** Boraginaceae or Borage family**Part used:** root and main rib of leaf have the most mucilage and allantoin**Taste/Smell:** mucilaginous, nutritious tasting, bland**Dosage & Use:** Useful externally as a poultice, paste or fomentation for contusions, sprains, dislocations, wounds, burns, ulcers and all inflammatory skin disorders. Used to decrease

inflammation of thrombophlebitis and phlebitis. This herb decreases the healing time for all manner of skin wounds and irritations.

**Constituents:** It contains 6-8% allantoin, .02-.07% pyrrolizidine alkaloids, 4-6% tannins, intermedine, acetylintermedine, lycopsamine, acetyllycopsamine, symphytine, mucilage, starch, triterpenes (isobauerenol) and sterols (sitosterol).

**Contraindications:** Not to be used internally due to possible pyrrolizidine poisoning.

### 18. Plantain - *Plantago spp.*

**Family:** Plantaginaceae or Plantain family

**Part used:** leaf

**Taste/smell:** nutritious, mucilaginous, slightly bitter, salty **Dosage:** 1 tablespoon (infused) per cup water or 15-40 drops of 1:1 fresh liquid extract, 1-4 times per day.

**Use:** Used as an antiseptic, astringent, antiinflammatory, vulnerary and mucilaginous agent. Cooling agent for use with hemorrhoids.

### 19. Saint John's wort - *Hypericum perforatum*

**Family:** Guttiferae

**Parts used:** flowering tops (best used fresh) when they are a mix of buds and open flowers

**Taste/smell:** astringent

**Dosage:** 10-60 drops of 1:1 fresh liquid extract, 1-4 times per day.

**Use:** Antiviral, anti-inflammatory, astringent, antibacterial, vulnerary, nervine, sedative, trophorestorative. It is used for hemorrhoids, especially with sharp radiating pain.

### Lymphagogues

Lymphagogues support the lymphatic organs and stimulate activity of the lymph system, hereby improving the removal of wastes from cells and the reception of nutrients.

### 20. Cleavers - *Galium aparine*

**Family:** Rubiaceae or Madder family

**Parts used:** fresh succulent aerial parts in flowering/ seed forming stage

**Taste/Smell:** fresh, pleasant taste

**Dosage:** 30-60 drops of 1:1 fresh+dry liquid extract, or add a handful of fresh herb into your juicer when you make a fresh vegetable juice.

**Use:** A relaxing diuretic, nutritive, vulnerary, hypotensive, lymphagogue. It supports the immune



system, corrects inability to pass normal catabolic wastes, and is a vulnerary. Used for bladder and kidney problems, such as benign prostatic hypertrophy, and it acts to reduce stones. Also used for enuresis in children.

### **21. Red root -*Ceanothus americanus***

**Family:** Rhamnaceae or Buckthorn family.

**Part used:** Root.

**Taste/smell:** Astringent.

**Tendencies:** Drying.

**Dosage:** Decoction: 1-2 teaspoons per cup of water; or 1:4 dry strength liquid extract: 20-40 drops 1-4 times per day.

**Mental picture and specifics:** It is indicated for stagnation of fluids, turbid lymph, mucus, swollen glands and poor nutrition to the tissues. Consider red root when the person is melancholic and the tongue is enlarged, swollen, with a dirty white or yellow coating.

**Use:** (a) Astringent, (b) Lymphagogue, (c) Expectorant. Red root is used in lymphatic, splenic and liver congestion, enlarged lymph nodes, sinusitis, tonsillitis, laryngitis, pharyngitis, chronic post-nasal drip and mononucleosis. It also can increase platelet counts and is specific for reducing cysts. This herb is best suited for subacute and chronic conditions.

**Contraindications:** Information unavailable at this time.

### **Liver Herbs**

Supporting the liver decreases blockage in the flow of blood from the rectal veins to the portal vein and therefore decreases venous distention and hemorrhoids due to liver disfunction.

### **22. Burdock - *Arctium lappa***

**Family:** Asteraceae or Aster family

**Part used:** root

**Taste/smell:** sweetish initially, bitter later, slightly mucilaginous

**Dosage:** 1 heaping tablespoon per cup water (decocted) or 20-60 drops of 1:1 fresh liquid extract, 1-4 times per day in a little water.

**Use:** Alterative, diuretic (especially the seeds), digestive stimulant, blood and lymph cleanser, liver tonic, choleric and mild laxative. Burdock stimulates the natural flow of lymphatic fluid thereby supporting excretion of toxic byproducts from cells. It helps the skin, kidneys,

liver, gall bladder, mucous and serous membranes to remove accumulated byproducts of catabolism.

**Constituents:** Seeds contain a glycoside (arctine) and fatty oil. The root contains volatile oils, inulin, mucilage and minerals, including calcium, phosphorus, sodium and iron. It also contains vitamins, including thiamine, riboflavin, niacin and ascorbic acid.

**Contraindications:** Long term use or excessive doses of the seed can cause urinary tract irritation.

### 23. Dandelion - *Taraxacum officinalis*

**Family:** Asteraceae or Aster family.

**Part Used:** whole plant, leaves, flowers, roots.

**Taste/Smell:** leaf and root are somewhat bitter but also slightly sweet taste in the root.

**Dosage:** 1 heaping teaspoon of root (decocted) or 1 heaping tablespoon of leaf (infused) in 1 cup water, or 1-60 drops of 1:1 fresh+dry liquid extract, 1-4 times per day in a little water.

**Use:** Whole plant acts as a diuretic (especially the leaf), stomachic, mild laxative, cholagogue and choleric. Used to lower blood pressure and cholesterol, decrease edema, normalize blood sugar, and in arthritis and gout. Useful for many female conditions, as well as skin diseases, because of its effect on the liver. Autumn roots can be roasted and used as a coffee substitute.

**Constituents:** Contains bitter substances, eudesmanolides, germacranolides, triterpenes, sterols, carotenoids, flavonoids, carbohydrates (root), fructose (18% in spring), mucilage, 4.5% potassium (greens), inulin (2%, in spring, which increases to as much as 40%, in autumn).

**Contraindications:** Physical contact with the fresh latex in Dandelions can cause contact dermatitis.

### 24. Licorice - *Glycyrrhiza glabra*

**Family:** Fabaceae or Legume family

**Part used:** Root

**Smell/Taste:** sweet, nutritious

**Dosage:** 1 teaspoon per cup water (decocted) or 20- 60 drops of 1:3 dry liquid extract, 1-4 times per day.

**Use:** A demulcent, adaptogen, adrenal-modulator, antibacterial, antiviral, expectorant with secretolytic and secretomotor activity, anti-inflammatory, nutritive, spasmolytic, antioxidant,

estrogenic, immune stimulant, liver tonic and protectant. Most known for the effect on mucous membranes. It is effective for many chronic liver conditions with high liver enzymes. Makes a nice addition to formulas which are unpalatable. Glycyrrhizinic acid and aglycone glycyrrhetic acid are essential active components. They decrease inflammation by enhancing movement of leucocytes towards inflamed areas. Glycyrrhizin inhibits the activity of phospholipase A and the formation of prostaglandin E2 in activated peritoneal macrophages.

**Contraindications:** Contraindicated in high blood pressure, kidney disease, liver cirrhosis and cholestatic liver disorders. Chronic use mimics aldosteronism by increasing sodium resorption and potassium excretion by the kidney. Avoid using with pre-existent hypertension. The toxic symptoms are hypertension, edema, hypokalemia, vertigo and headache. This ceases when Glycyrrhiza is withdrawn or by concurrent use of anti-aldosterone agents. Standard licorice doses of 5-15 grams per day should not be taken for more than 6 weeks unless under the guidance of a physician. Persons with high blood pressure, cardiac or renal impairment should consult a physician before taking licorice preparations. Licorice potentiates the activity of anthraquinone drugs, or herbs containing anthraquinones (such as Cascara, Senna and Buckthorn) by increasing the wettability of the bowel contents because of the high surfactant activity of glycyrrhizin.

## 25. Milk thistle - *Silybum marianum*

**Family:** Asteraceae or Aster family

**Part used:** seed

**Smell/Taste:** bitter

**Dosage:** 1-2 teaspoons crushed seed (decocted) or 20-60 drops of 1:2.5 dry liquid extract, 1-4 times per day.

**Use:** Antioxidant and hepatoprotectant used in liver disease, such as hepatitis, fatty liver, cirrhosis, for liver protection and regeneration immediately after exposure to liver toxins; best used as a protectant before exposure to liver toxins. Silymarin changes the outer membrane cell structure, preventing certain toxins from entering the liver cells. It also stimulates RNA polymerase A (polymerase I) which enhances ribosome protein synthesis and activates the regenerative capacity of the liver cells.

**Constituents:** Contains 1.5-3% silymarin which mostly consists of silybin, a combination of silibinin, silychristin and silydianin.

**26. Turmeric - *Curcuma longa*****Family:** Zingiberaceae or Ginger family**Part used:** rhizome**Taste/smell:** Warming, bitter, slightly pungent**Dosage:** 10-40 drops of 1:0.85 fresh liquid extract, 1- 4 times per day.**Use:** Anti-inflammatory, antiarthritic, antibacterial, antifungal, hypotensive, anti-atherosclerotic, cholagogue, choloretic, emmenagogue, lowers cholesterol, stimulates digestive enzymes, carminative, hepatoprotective, vulnerary, anticoagulant (inhibits platelet aggregation). Used for flatulence, jaundice, menstrual difficulties, gallstones, hemorrhage, toothache, bruises, colic, arthritis, sprains, wounds, anticancer agent.**Constituents:** Contains polysaccharides: Ukonan- A (phagocytosis activating factor) and Ukonan-D (reticuloendothelial system-potentiating activity), 4-5% orange-yellow volatile oil mainly composed of turmerone, atlantone and zingiberone, 0.3-5.4% curcumin (antioxidant, antiedemic effect), disaccharides: glucose 28%, fructose 12%, arabinose 1%, various resins, proteins, vitamins and minerals.**Contraindications:** Contraindicated in pregnancy (uterine stimulant).**27. *Corylus avellana*<sup>[19-22]</sup>****Family:** Betulaceae.**Parts used:** Fruit**Taste:** bitter**Use:** This plant has a venotonic action being used on varicose veins and edema caused by venous insufficiency. Dietary fiber has an important therapeutic implication, as exhibit a protective effect against hypertension, chronic heart diseases<sup>120</sup>.**Constituents:** The compounds of this plant are tannins; flavonoids; essential oil; fat (mainly oleic acid); proteins; carbohydrates; dietary fibre; vitamins; minerals; phytosterols (mainly  $\beta$ -sitosterol) and antioxidant phenolics. The leaves of this plant contain phenolic compounds such as flavonoids, caffeic acid and diaryl ether heptanoids derivatives.**28. *Vaccinium myrtillus*<sup>[23-25]</sup>****Family:** Ericaceae**Parts used:** Fruit (Wild blueberries)**Taste:** bitter

**Use:** They are medical use at venous insufficiency by varicose veins and hemorrhoids. The leaves present tannins (between 5% and 10%); flavonoids (quercetin derivatives); triterpenic acids (ursolic, oleanolic); phenolic acids and iridoids; ANCs pigments; mineral salts (iron, magnesium and chromium) and quinolizidine alkaloids. Other compounds of this plant are catechins, pectins, myricetin, caffeic acid and  $\rho$ -coumaric acid. Pharmacological studies have shown an effective treatment for vascular disorders. Others studies shown that ANCs are responsible for a decrease of blood pressure in models of hypertension.

**Constituents:** The fruit of this plant are tannins (about 10%), mainly soluble in water; oligomeric procyanidins; ANCs pigments (0,5%) by heterosides forms (delphinidin, cyanidin, petunidin, peonidin and malvidin); organic acid; carbohydrates (oses, inositol); pectin; carotenes; flavonoids (rutin ). This plant is a good natural source of ANCs. The fruits have properties of vitamin P of ANCs, flavonoids pigments, phenolic compounds other than flavonoids (flavonols, phenolic acids and pro-anthocyanidins) and vitamins C and E that increase and decrease of capillary permeability.

## CONCLUSION

All drugs which we have discussed in this review have a significant in their mode of action and therapy of Varicose veins, in contrast of plants bioactive phyto-molecules are less known about their mode of action but there is no doubt about the role of plants to treating Varicose veins. It is also important to screening the world's plant diversity extensively for more and specific bioactive phytomolecules which are helpful in treating varicose veins. On the other hand the traditional formulation of drugs must be researched and re-standardized by using new techniques and methods for managing the varicosis. Furthermore these drugs will be accessible to the people who are unable to purchase the costly synthetic drugs. Hence herbal drugs may be an emerging alternative of synthetic drugs to curing varicose veins.

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