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MODERN ADVANCES AND UNANI INSIGHTS IN THE MANAGEMENT OF VARICOSE VEINS: A COMPARATIVE REVIEW

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Case Study

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ABSTRACT

Varicose veins (Dawali) are a chronic vascular condition characterized by dilated, tortuous, and elongated veins, most commonly affecting the lower limbs due to valve incompetence and venous hypertension. Modern medicine identifies multiple contributing factors, including prolonged standing, hormonal imbalances, pregnancy, and genetic predisposition. Symptoms vary from cosmetic concerns to significant discomfort and complications such as chronic venous insufficiency, ulcers, and thrombophlebitis. The CEAP classification system is widely used to categorize the disease clinically and anatomically. In Unani medicine, varicose veins are considered to result from the accumulation of *saudavi maadda* (black bile) and are managed through holistic therapies aimed at balancing the humours. Treatments include *fasd* (bloodletting), *Irsal-e-Alaq* (leech therapy), herbal formulations (e.g., *Habb-e Asgand*, *Majoon Ushba*), massage, and dietary regulation. Unani remedies focus on detoxification, circulation enhancement, and tissue healing. In addition, modern treatments such as compression therapy, sclerotherapy, endothermal ablation, and surgical procedures are discussed. Integration of modern diagnostics with traditional Unani methods offers a comprehensive and cost-effective approach to managing this prevalent condition. The paper highlights the potential of Unani medicine in treating varicose veins effectively and safely, with fewer side effects, particularly in regions with limited access to surgical interventions.

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Keywords: Varicose veins, Unani medicine, Dawali, Leech therapy, Venous insufficiency, Herbal treatment.

INTRODUCTION

A vein is described as varicose when it becomes dilated, elongated, and tortuous. Common sites of varicosity include the superficial venous system of the lower limbs, involving either the long saphenous vein, the short saphenous vein, or both; the gastro-esophageal junction, where esophageal varices develop; the hemorrhoidal veins, leading to piles; and the spermatic veins, resulting in a varicocele.[1]

Varicose veins are abnormally dilated, elongated, and twisted veins, typically found in the legs, where faulty valves cause a reversal of blood flow. These veins become permanently enlarged and follow a tortuous path, leading to disrupted and pathological circulation. Several factors increase the risk of developing varicose veins, including a family history of the condition, being female, occupations involving prolonged standing, immobility, and increased intra-abdominal pressure—such as that caused by athletic activities, tight clothing, pregnancy, elevated progesterone levels, and hormonal imbalances involving estrogen and progesterone. Additional contributing factors include chronic constipation and wearing high-heeled shoes. The condition affects approximately 35% of the population, with 10% experiencing severe varicose veins, 8% developing chronic venous insufficiency (CVI), and 2% progressing to leg ulcers.[2]

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Varicose veins are often called the "penalty for standing upright," because blood in the legs has to flow upward to the heart, working against gravity. This makes the legs more likely to develop vein problems. In many people, varicose veins don't cause any symptoms. However, increased pressure in the abdomen—often seen in women due to repeated pregnancies—can make them worse. When complications occur, they may become serious enough to require hospital treatment.[3]

Material and Methods

A thorough literature review was carried out using databases such as PubMed/Medline, Science Direct, Google Scholar, SciFinder, Scopus, and Web of Science. Relevant keywords like intermittent varicose veins (VVs), neovascularization, epidemiology, causes, clinical features, signs and symptoms, risk factors, disease process, diagnosis, impact on quality of life, and global burden of VVs were used to gather information. Articles were selected based on full-text availability, and studies involving congenital disorders or animals were excluded. Only original research articles, reviews, mini-reviews, and case reports written in English were considered for this study.

Aetiology

Varicose veins in the lower limbs are often seen as a consequence of humans standing upright, which forces the veins to pump blood upward against gravity. Superficial veins are particularly vulnerable because they are supported by loose fatty tissue, making them more prone to becoming varicose. Varicose veins are classified into three types: primary, secondary, and congenital.

1. Primary varicose veins are the most common and usually result from faulty valves in the veins. These valve problems can be either present from birth (congenital) or acquired later, often due to vein inflammation or clotting (thrombosis).

- A damaged saphenofemoral valve leads to varicosity in the long saphenous vein.
- A faulty saphenopopliteal valve affects the short saphenous vein.
- Valve failure in the perforator veins can cause varicosity in either or both saphenous systems.

2. Secondary varicose veins occur due to blockage or pressure in the deep veins, often caused by:

- Physical pressure from pregnancy or pelvic tumors like uterine fibroids, ovarian cysts, or cancers of the cervix, uterus, ovary, or rectum.
- Deep vein thrombosis (DVT), which can damage the valves.
- Hormonal changes, especially in women who have had multiple pregnancies, due to progesterone.
- Acquired arteriovenous fistulas, either from injury or surgical procedures like dialysis access.
- Cavernous haemangiomas, which are abnormal clusters of enlarged veins.
- Retroperitoneal lymph node swelling or fibrosis.
- Iliac vein thrombosis.

3. Congenital varicose veins are rare and usually appear in individuals under 20 years old. These are often caused by congenital arteriovenous fistulas or cavernous haemangiomas. [1]

Epidemology

Varicose veins are a widespread vascular disorder, affecting between 10% and 30% of the global population, with prevalence varying based on age, gender, occupation, and geographical location. Research shows that women are more commonly affected (up to 25%) than men (10–15%), and the likelihood of developing the condition rises significantly after the age of 50 (Aslam et al., 2022). There are also clear regional differences—for example, rates are particularly high in Italy (up to 77.3%) and Saudi Arabia (over 60%), while countries like Spain report much lower rates, around 5.6% (Aslam et al., 2022; StatPearls, 2023). Key risk factors include pregnancy, obesity, standing for long periods, a sedentary lifestyle, and a family history of the condition. Job-related risks are also important, with healthcare workers showing a pooled prevalence of about 25%. The condition is observed more frequently in Caucasians than in Asians, suggesting a role of both ethnic background and genetic predisposition.[4,5]

Classification

Varicose veins are classified according to their symptoms, causes, anatomical site, and the underlying disease process. The CEAP classification is the most commonly used system for this purpose. The CEAP Classification (Clinical-Etiology-Anatomy-Patho-physiology), developed by the American Venous Forum, is the internationally recognized gold standard for categorizing chronic venous diseases, such as varicose veins.[6,7,8]

Clinical classification	
C0	No visible or palpable signs of venous disease
C1	Telangiectasies or reticular veins
C2	Varicose veins
C3	Edema
C4a	Pigmentation and eczema
C4b	Lipodermatosclerosis and atrophie blanche.
C5	Healed venous ulcer
C6	Active venous ulcer
S	Symptomatic, including ache, pain, tightness, skin irritation, heaviness, and muscle cramps, and other complaints attributable to venous dysfunction
A.	Asymptomatic
Etiologic classification	
Ec	Congenital
Ep	Primary
Es	Secondary (postthrombotic)
En	No venous cause identified
Anatomic classification	
As	Superficial veins
Ap	Perforator veins
Ad	Deep veins
An	No venous location identified
Pathophysiology classification	
Pr	Reflux
Po	Obstruction
Pr,o	Reflux and obstruction
Pn	No venous pathophysiology identifiable

The clinical classification of varicose veins based on their appearance includes several types:

- **Thread veins** (also known as dermal flares, telangiectasia, spider veins, or hyphen veins) are tiny surface veins measuring 0.5–1 mm. These appear as red or purple web-like patterns, typically around the ankles, and are more commonly seen in women.
- **Reticular varices**, ranging from 1–4 mm in diameter, are slightly larger and located in the subdermal or subcutaneous layers.
- **Varicose veins** are visibly enlarged, palpable veins greater than 4 mm in diameter, usually found within the saphenous vein system.
- In some cases, a combination of these vein types may be present.

Additionally, varicose veins are categorized by size: small varicose veins are less than 4 mm wide, while large varicose veins exceed 4 mm.

Corona phlebectatica refers to clusters of blue telangiectasias seen on the inner side of the foot below the ankle bone. The presence of more than five of these

is a strong indicator of potential skin changes related to venous disease.[2]

Clinical Features

The symptoms of varicose veins can vary widely, and some individuals may not experience any symptoms at all. When present, symptoms may affect one or both legs and include localized discomfort such as pain, burning, itching, and tingling at the site of the affected veins. General symptoms often involve aching, heaviness, cramping, throbbing, restlessness, and leg swelling, which typically worsen toward the end of the day, especially after standing for long periods. These symptoms usually improve with leg elevation or rest. Women are more likely than men to report symptoms in the lower limbs. As the CEAP classification progresses from C0 to C6, both the frequency and severity of symptoms tend to increase.

While varicose veins can cause discomfort and cosmetic concerns, they rarely lead to serious complications. However, signs of more advanced venous insufficiency may include skin discoloration, eczema, infection, inflammation of superficial veins (thrombophlebitis), venous ulcers, loss of soft tissue, and lipodermatosclerosis—a condition where chronic inflammation leads to fibrosis and shrinkage of the skin and subcutanous tissue, causing the lower leg to narrow.

Visible signs of varicose veins include:

- Veins that appear swollen, twisted, or bulging
- A blue or dark purple color
- Throbbing or muscle cramps
- Itchy or irritated rashes
- Darkening and thickening of the skin
- Leg swelling
- Prolonged bleeding from minor injuries
- A feeling of heaviness or tiredness in the legs
- Tenderness near the affected veins
- Lipodermatosclerosis, where fat under the skin near the ankle hardens and the skin tightens
- Venous eczema, presenting as red, dry, itchy skin
- Atrophie blanche, characterized by irregular white scar-like patches near the ankles

Restless legs syndrome, causing an uncontrollable urge to move the legs.[9, 4, 10]

Common Predisposing Factors for Formation of Varicose Vein

A variety of internal and external factors contribute to the risk of developing varicose veins. These include age, sex, pregnancy, body weight and height, ethnicity, diet, bowel habits, occupation, posture, previous episodes of deep vein thrombosis (DVT), genetic predisposition, and climate. Additional factors identified in research include heredity, jobs requiring long periods of standing or sitting, wearing tight clothing, use of raised toilet seats, physical inactivity, smoking, and oral contraceptive use. Tight undergarments can lead to increased venous pressure in the upper legs. A low-fiber diet may cause constipation and straining during bowel movements, while elevated toilet seats discourage natural squatting, further contributing to straining. These factors are all believed to cause or worsen venous hypertension, which is closely associated with the onset and progression of chronic venous insufficiency.[11]

Pathogenesis

Blood flow in the veins depends on healthy valves and muscle movements to push blood back to the heart against gravity. Normally, blood flows from the superficial veins into the deep veins and then upward toward the heart, moving from the lower part of the body to the upper part. Valves in the superficial, deep, and perforating veins help keep blood moving upward and stop it from flowing backward. When these valves stop working properly—especially in the legs—pressure from the deep veins can flow back into the superficial veins through the saphenofemoral junction (SFJ) and perforating veins, causing the veins to stretch and become varicose. Studies using imaging like ultrasound have shown that faulty valves can be found throughout the leg in people with varicose veins. The most common area affected is in the branch veins below the knee, especially in the great saphenous vein. Higher pressure in the veins is linked with more severe symptoms of the condition.[12]

Venous hypertension can result from several factors, including malfunctioning venous valves, structural changes in the vein walls, inflammation, and alterations in shear stress. Varicose veins develop due to a combination of these pathophysiological processes. Reflux caused by valve failure, blockage of venous inflow, or inadequate calf muscle pump function can all lead to venous hypertension. This reflux, which contributes to venous insufficiency, may

affect either the superficial or deep venous systems. In cases with significant perforator vein incompetence, the pressure from deep veins—especially during calf muscle contraction—can be transmitted directly to the superficial veins, leading to valve failure in those areas. Structural changes in the vein wall contribute to further weakening and dilation. Histological studies of varicose veins have shown an imbalance in collagen production (increased type I collagen, reduced or disrupted type III collagen), abnormal arrangement of smooth muscle cells, and changes in elastin fibers—factors that all play a role in the progression of the disease.[13]

Unani Concept

Varicosity is a condition where the veins in the legs and feet become enlarged due to the excessive buildup of blood. According to Unani medicine, this buildup may be caused by saudavi maadda (black bile), ghair saudavi maadda, or balgham ghaleez (thick phlegm). The term "varicose" comes from a Greek word meaning "grape-like" and was first used medically by Hippocrates around 460 BC. Historical records of varicose veins date back over 3,500 years, with the earliest mention found in the Ebers Papyrus of ancient Egypt, which advised against surgical removal due to the risk of fatal bleeding. Hippocrates instead recommended treatments like compression and cauterization rather than excision. Later, physicians such as Paulus Aegineta promoted ligation techniques centuries before they became mainstream, and bloodletting with leeches was widely practiced in ancient Greece, Rome, and the Arab world. Over the centuries, treatments progressed slowly, with minimal focus on appearance until more recent times.

In Unani medicine, the symptoms of Dawali (varicose veins) are believed to result from the accumulation of saudavi blood in the lower limbs. To alleviate these symptoms, it is essential to eliminate the morbid matter. Traditional Unani treatments for Dawali have included emesis (vomiting), purgation, and bloodletting, with fasd (venesection) being the most commonly used method to remove the diseased humors and manage the condition.[14] Bloodletting is believed to remove excess or harmful humours from the body, thereby helping to purify the blood, relieve pressure, and restore the natural balance of bodily fluids. In surgical conditions, it is used to reduce inflammation, pain, and swelling by improving circulation and clearing stagnant blood. Unani physicians have historically emphasized the timing, method, and selection of specific veins for bloodletting based on the patient's temperament and disease state. When performed correctly, it is considered a safe and effective procedure within the framework of Unani healing practices.[15]

Prevention

Lifestyle Changes: Limit long periods of walking, standing, or sitting, as avoiding prolonged standing can help ease varicose vein symptoms. Try not to sit with legs crossed, although this might be difficult in some cultural situations.

Avoid wearing high heels for extended times; low-heeled shoes help strengthen the calf muscles, which assist in moving blood through the veins.

Losing weight can improve circulation and reduce pressure on the veins, helping to relieve symptoms.[14] . Improving blood circulation and muscle strength may reduce the chance of developing varicose veins. The methods used to ease varicose vein symptoms can also help prevent them. Consider these tips:

Follow a diet rich in fiber and low in salt.[16]

Complications of Varicose Veins

1. **Chronic Venous Insufficiency (CVI)**: If varicose veins are not treated, they may cause complications such as Chronic Venous Insufficiency (CVI). This condition occurs when blood pools in the veins for a long time, which can damage vein function and result in symptoms like swelling in the legs, changes in the skin, and pain.
2. **Chronic Venous Insufficiency (CVI):** Open sores or ulcers, typically found around the ankles, can develop due to poor blood flow and high pressure in the veins.
3. **Superficial Thrombophlebitis:** Inflammation and blood clots can occur in a superficial vein, leading to redness, pain, and swelling.
4. **Deep Vein Thrombosis (DVT):** Although it is less frequent, varicose veins can raise the risk of deep vein thrombosis (DVT), a serious condition where blood clots develop in the deeper veins.
5. **Bleeding:** Varicose veins near the surface of the skin may burst, leading to bleeding either on their own or after an injury.
6. **Skin Changes (Lipodermatosclerosis & Hyperpigmentation):** Chronic vein problems can lead to the skin becoming thickened,

darkened, and developing eczema because of poor circulation. [17]

Treatment

There are various treatments for varicose veins, including conservative care, foam sclerotherapy, thermal techniques, and surgery. However, these methods have limitations, with varicose veins recurring in 26% to 60% of cases after surgery. This highlights the need for alternative approaches, such as herbal medicines, to slow down the progression and help manage the condition. Therefore, polyherbal drugs present a promising option for treating and controlling varicose veins.[18]

Traditional treatments for varicose veins involved compression therapy using special stockings and surgical methods like vein stripping, cryosurgery, and ambulatory phlebectomy. However, more effective non-surgical options are now available that promote faster and better healing. These include treatments such as sclerotherapy or foam sclerotherapy and endothermal ablation. Additionally, there are many natural remedies used to treat varicose veins, including horse chestnut seed extract, Centella asiatica, apple cider vinegar, butcher's broom, garlic, amla, grape seed extract, and citrus fruits.[19]

Physical Therapy for Varicose Veins: Exercise and yoga help strengthen muscles and enhance blood circulation, reducing pain and promoting healthy veins. Activities such as walking, cycling, and swimming also help tone muscles and improve blood flow. Elevating the legs with pillows while resting can further aid circulation. Additionally, massage therapy using oils like olive, mustard, castor, or citrus applied in an upward motion can stimulate blood flow and drainage. Losing weight may also relieve symptoms, especially in individuals who are overweight.

Compression therapy: This therapy involves using special compression stockings that apply pressure to the calves, squeezing the enlarged veins. This reduces the size of the veins, helping to improve blood flow back to the heart.[20]

Non-surgical Treatments like

Sclerotherapy: Spider veins, also known as angiiectasis, are treated with a method that uses sclerosing agents like sodium salicylate, polidocanol, or chromated glycine, which are injected with fine needles. After the procedure, patients are advised to wear compression stockings to help tighten the treated veins. Possible side effects include scarring at the injection sites, the development of small new veins called neovascularization (which can take months to a year to fade), swelling, and in severe cases, small ulcers.

Ultrasound guided foam sclerotherapy: This method works by damaging the inner lining of the vein to cause blockage and scar tissue in the enlarged veins. The sclerosing agent is used in foam form because it covers a larger area inside the vein walls. Possible side effects include bubble embolism and inflammation of the veins (thrombophlebitis).[18,20]

Endothermal Ablation: This treatment uses energy from radiofrequency and lasers to close off the damaged veins, promoting faster healing. It consists of two main methods.

Radiofrequency ablation of the Varicose Veins: The affected veins are treated by inserting a radiofrequency catheter with sheath electrodes and heating them using a bipolar generator at a temperature of around 85±3 °C.

Endovenous Ablation: This technique closes the vein by inserting a catheter into the saphenous vein at the saphenofemoral junction (below the knee) and guiding a laser fiber through it. It has a 98% success rate in treating venous insufficiency. Reported side effects include limb stiffness, pain, and bruising.[21]

Surgical Treatments

Surgery has traditionally been a common treatment for varicose veins, particularly when the greater saphenous vein is involved. However, studies suggest it may not always be the most effective or only treatment option available.

Ligation: Tying off the affected vein through a small surgical incision to prevent abnormal blood flow.

Phlebectomy: This procedure involves removing superficial veins through small incisions in the skin and is typically done by a dermatologist on an outpatient basis. After surgery, patients are advised to continue wearing compression stockings for a certain period. Mild swelling and inflammation may occur temporarily.

Vein Stripping: This surgical method involves treating the damaged veins by inserting specially designed

wires through an incision in the saphenous vein to "strip" or remove them. The procedure is performed under general anesthesia and is referred to as bilateral surgery. Possible side effects include bleeding, bruising, and infections.

These surgical treatments offers several advantages, including a reduced risk of complications like ulcers, an 88% ulcer healing rate, and a low recurrence rate of 13% over 10 months. However, it also carries some risks, such as the potential for vein recurrence and increased pressure in nearby veins.[19]

Unani Treatment

In Unani medicine, numerous single and compound remedies, along with bloodletting techniques, are used to treat and manage "Dawali" (varicose veins). These approaches are considered safe and affordable. Unani treatment takes a holistic view, focusing on improving blood circulation and restoring balance among the body's humours. While specific herbal formulations may vary based on a person's constitution and symptoms, several commonly used herbs are frequently prescribed for managing varicose veins. [22] These include as

Table 1: Herbal Medicines used for treating Varicose Veins.

Herbal Medicines	
Herb	**Description**
Habb-e Asgand	Known as Ashwagandha or *Withania somnifera*, this herb has revitalizing properties that may help support blood circulation and improve vascular health.
Qurs-e Zeequn Nisa	A Unani formulation containing multiple plant ingredients such as *Zingiber officinale* (ginger) and *Cyperus scariosus* (nagarmotha) is believed to possess anti-inflammatory effects and promote blood circulation.
Majoon Ushba	This Unani herbal paste is thought to improve blood circulation and reduce swelling, often including ingredients such as *Terminalia chebul*a.

Table 2: Drug regimen for treating Dawali (Varicose Vein)

Following drug regimen are followed for treatment of Dawali	
Ilaj bid Dawa (Pharmacotherapy)	**Ilaj Maqami (Local management)**
Matbookh saba	Bandage of leg spiralling from below to upward using tila
Habb afteemoon	Tila used with medicines like Turmus and Turfa with Roghan zaitoon
Afteemoon with ma'ul jubn	Tila Ma'in Kala, Aqaqiya, Gond Babool
Ma'ulJubn	Natool of extract of Turmus
Quabiz Zimadat	Itrifal-e- Sagheer with Zanjabeel orally
Nuskhatila (Sibr, Aqaqiya, Mur, Ramik,UsaraLehya-tu Tees)	PodinaNahri, Sana Makki, Harmal, Bartang, Magz Tukhm Bed AnjeerWa Shahad, Useful Orally And Locally as Zimad

In the Unani system of medicine, Irsal-e Alaq (leech therapy) and Tanqiya-e Sauda (removal of black bile) are effectively used to manage varicose veins. A treatment plan combining Irsal-e Alaq with Itrifal Sagheer and Zanjabeel has been shown to significantly reduce symptoms like pain, heaviness, swelling, skin changes, and vein enlargement. This approach, based on the principles of Tanqiya (cleansing) and Ta'deel (balance), is considered safe and effective for treating Dawali (varicose veins). To eliminate the morbid matter causing the condition, oral administration of Itrifal Sagheer with Zanjabeel along with Joshanda Aftimoon is commonly used. The main treatment goal in Dawali is to remove the accumulated Madda (morbid matter), especially the Sauda (melancholic matter), which deposits in the veins of the lower legs. Leeches (Irsal-e Alaq) are also applied to help evacuate this harmful substance and aid in the healing process.[23,24,25]

Leech therapy[26,27]

Leeches, known as Alaq in Arabic, are worms classified under Hirudinea, with around 300 species worldwide. Some species, such as Hirudinaria granulosa found in India, possess medicinal qualities. Traditionally, leech therapy has been used to treat a variety of health issues. Leeches latch onto the skin, draw blood, and release saliva that contains more than 100 active substances. One important ingredient, hirudin, helps stop blood from clotting. Additionally, their saliva provides pain relief and has antibacterial and anti-inflammatory properties. In varicose veins, leeches help by:

- Removing congested blood
- Improving blood circulation
- Reducing swelling and pain
- Preventing clot formation
- Enhancing tissue healing

Studies suggest leech therapy may relieve symptoms and prevent complications of varicose veins. It is also used for other conditions like arthritis, phlebitis, migraines, and hypertension. Overall, leech therapy is a natural method that supports blood flow and healing in varicose veins.

Bioactive ingredients found in Leech saliva

Leech saliva contains several pharmacologically active substances with proven benefits, including:

a. **Hirudin:** A protein from *Hirudo medicinalis* that strongly inhibits thrombin, making it the most powerful natural thrombin inhibitor used to prevent postoperative blood clots without significant side effects.

b. **Destabilase:** An enzyme with glycosidase activity that helps dissolve blood clots.

c. **Hyaluronidase:** This enzyme reduces viscosity, enhances absorption, and increases connective tissue permeability; it's being studied to boost the effectiveness of chemotherapy drugs.

d. **Carboxypeptidase-A:** Increases blood flow at the site of injury, aiding the healing of varicose ulcers by improving circulation.

e. **Calin:** Prevents blood clotting by blocking the binding of Von Willebrand factor to collagen and inhibits platelet aggregation.

f. **Eglin:** Small proteins like Eglin C show promise in treating inflammation-related diseases by preventing neutrophil infiltration into inflamed vessels and have been effective in experimental shock models.

g. **Bdellins:** Inhibit enzymes such as trypsin, plasmin, and sperm acrosin.

h. **Hirustasin:** Also known as Hirudo antistasin, it inhibits coagulation factor Xa and possesses anti-metastatic properties.

I. **Guamerin:** A novel inhibitor of human leukocyte elastase.

j. **Gelin:** Similar to Eglin, it inhibits enzymes like elastase, cathepsin G, and chymotrypsin.

Hydrotherapy: A warm sitz bath is a type of hydrotherapy, is an effective and noninvasive treatment for simple varicose veins, but it demands strong patient commitment to be successful.[10]

Herbal cream

Herbal creams are natural skincare products made from plant parts such as seeds, roots, leaves, and flowers. They are increasingly popular worldwide, with about 80% of people using herbal medicine, due to their gentle, healing, and nourishing qualities. These creams are favored for being safer and causing fewer side effects compared to synthetic products. Herbal antiseptic creams, in particular, help calm and heal skin problems like rashes, sores, heat rashes, and mild infections without irritation. They usually contain essential oils, vitamins, and plant extracts that provide hydration, reduce inflammation, fight microbes, and offer antioxidant effects. Herbal creams are categorized based on their function (such as cleansing or massage), the type of emulsion (oil-in-water or water-in-oil), and their specific purposes like night creams, hand creams, or skin protectants. Overall, they offer a natural, safe, and effective way to support skin health.[16]

Natural venoactive drugs

Venoactive drugs, which work through various mechanisms, are often an effective and safe treatment option for patients with chronic venous conditions. Many of these medications are derived naturally from plant extracts.

Diosmin: 7-disaccharide derivative of diosmetin, works by enhancing venous tone and lymphatic flow while improving the elasticity of blood vessels. It is commonly available as a micronized purified flavonoid fraction (MPFF), such as Daflon, which contains about 90% diosmin and 10% other active

flavonoids like hesperidin, diosmetin, linarin, and isoorhoifolin derived from Rutaceae aurantiae. Diosmin also helps reduce swelling by decreasing blood vessel wall permeability and boosting capillary blood flow. Additionally, it has anti-inflammatory and antioxidant effects, supports vessel elasticity, inhibits leukocyte adhesion, platelet activation, and complement system activity, and reduces COX-1 enzyme activity.

Hesperidin: Hesperidin possesses anti-inflammatory, antioxidant, and antimicrobial properties. Its anti-inflammatory action is linked to blocking the p38 MAPK signaling pathway and reducing the production of pro-inflammatory cytokines. This flavonoid also decreases platelet aggregation and boosts the levels of antioxidant enzymes such as catalase (CAT) and superoxide dismutase (SOD). Additionally, hesperidin inhibits inflammatory mediators like NF-□B, iNOS, and COX-2, while activating the ERK/Nrf2 signaling pathway to enhance the cell's antioxidant defenses.

Coumarin: Coumarin derivatives exhibit a wide range of pharmacological and therapeutic effects, including anti-inflammatory, antioxidant, antiviral, antibacterial, anticoagulant, anti-edema, and anticancer properties. Esculetin, a coumarin derivative, helps neutralize free radicals produced during lipid peroxidation and enhances antioxidant enzyme levels like CAT, SOD, and GPX.[28]

Conclusion

varicose veins (Dawali) represent a widespread vascular disorder that affects a significant portion of the global population, particularly women and individuals with certain lifestyle and occupational risk factors. Modern medical science attributes the condition to valve dysfunction, venous hypertension, and structural changes in the vein walls, while Unani medicine links it to an imbalance of bodily humours, particularly the accumulation of *saudavi* matter. Both systems offer a range of treatment options—from conservative management and surgical interventions to herbal remedies, bloodletting, and leech therapy. Unani medicine emphasizes holistic healing through detoxification, restoration of humoral balance, and the use of natural therapies, offering a safe, cost-effective, and culturally rooted alternative for managing varicose veins. Integrating modern diagnostic tools with traditional Unani principles may provide a more comprehensive approach to prevention, symptom relief, and long-term management of this chronic condition. This paper aims to serve as a complete resource for understanding the current state of knowledge and clinical practice surrounding varicose vein.

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