

Botanical Remedies for Piles: A Comprehensive Review of Plants Used In Hemorrhoid Treatments

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Abstract- The herbs that have historically been used to treat piles or hemorrhoids are thoroughly reviewed in this article. Because millions of people suffer from this widespread and uncomfortable ailment, conventional medicine has inspired researchers to investigate natural therapies for hemorrhoids. Highlighting the plant-based treatments' historical significance, active ingredients, and documented therapeutic effects, the overview covers a wide range of herbal remedies. This article seeks to provide light on the possible efficacy, safety, and mechanisms of action related to these herbal treatments through a thorough examination of scientific literature and traditional wisdom.

Keywords: Hemorrhoid, pomegranate, fig, onion, *Aloe vera*, guava.

INTRODUCTION

Adults frequently suffer from hemorrhoids, sometimes known as piles. Over 50% of those 50 years of age and beyond will experience hemorrhoids at some point in their lives (Bailey, H. R, 2004). Though they are uncommon in children, hemorrhoids are reported to occur in some of them these days (Heaton, N. D et al., 1992) and in older individuals (Navarra, L et al., 1999). Ancient medical texts from every civilization have reference to hemorrhoids (MacKay, D, 2001). The Greek words "haema" (blood) and "rhoos" (flowing) are the roots of the English word "hemorrhoids," which Hippocrates first used to refer to the flow of blood from the anus veins. As this illness may not always be accompanied by bleeding, the term piles are more appropriate for describing it. In society, it is commonly referred to as piles. The word pile is derived from Latin and means a ball or a mass (Gheewala, M. N et al., 1971). Common people refer to them as piles, the nobility refers to them as hemorrhoids, the French refer to them as figs, which means to clot (Rangnekar, G. V et al., 1974).

PATHOPHYSIOLOGY OF HEMORRHOIDS

Generally speaking, the term "hemoid" refers to the symptoms that hemorrhoids produce. In healthy people, hemorrhoids are present (Chawla, Y et al., 1991). Hemorrhoidal columns do, in fact, exist in utero. Hemorrhoids are the name for these vascular cushions. When hemorrhoids grow, become inflammatory, thrombosed, or prolapse, symptoms usually follow. According to the majority of writers, low-fiber diets result in tiny stools, which make it difficult to defecate (Katz, J. A et al., 1993). Engorgement of the hemorrhoids results from this elevated pressure, maybe as a result of venous return obstruction. The same mechanism likely explains why hemorrhoidal issues can also be brought on by pregnancy and abnormally high internal sphincter muscle tension. Long periods of time spent sitting on the toilet (for example, while reading) are thought to produce a tourniquet effect in the perianal region, which enlarges hemorrhoids. The support structures deteriorate with age, which makes prolapse easier. As early as the third decade of life, support networks may start weakening. One of the main factors contributing to hemorrhoids is constipation and strain (Moesgaard, F et al., 1982). The canal resting tone is higher than usual in patients who complain hemorrhoids. It's interesting to note that following a hemorrhoidectomy, the resting tone is lower than it was initially. The mechanism of action of Lord Dilatation, the surgical treatment most widely used in the United Kingdom for anorectal symptoms, is this shift in resting tone (Saleeby Jr, R. G et al., 1991). It is evident that women are more susceptible to hemorrhoidal symptoms during pregnancy, even though the exact cause is unknown. Remarkably, upon birth, the majority of patients return to their pre-symptomatic state (Yuksel, B. C et al., 2008). The correlation between hemorrhoids and pregnancy supports the idea that either physical pressure or hormonal

changes are the cause. Hemorrhoids and portal hypertension have frequently been reported together. Patients with portal hypertension do not experience hemorrhoidal symptoms more frequently than those without it. In these patients, hemorrhoids rarely cause massive bleeding (Faucheron, J. L et al., 2008). It is advised to directly stitch the problematic column if bleeding is discovered. A prevalent condition in people with portal hypertension is anorectal varices. Varices arise at the points where the inferior and intermediate rectal veins link to the portal system in the mid rectum. Patients without cirrhosis get varices more commonly, albeit they rarely bleed. The primary focus of treatment is typically on the underlying portal hypertension. Suture ligation can provide bleeding control in an emergency (Johanson, J. F et al., 1992). Intra hepatic porto systemic shunts and trans jugular hypertension and consequent bleeding have been managed by porto systemic shunts (TIPS). By the age of 50, hemorrhoids are thought to affect up to half of the population. They are a highly prevalent condition.

HISTOLOGY OF HEMORRHOIDS

Everybody has hemorrhoidal tissue, which are cushions of tissue in the anal canal that house blood vessels and supporting tissue composed of elastic and muscle tissue (Liebach, J. R et al., 1991). Superior, intermediate, and inferior hemorrhoidal veins create a plexus in the ano-rectal region, where varicose veins called piles can develop. Hemorrhoids can develop from external (skin-covered) piles, which are caused by an enlargement of the external veins. When the internal vein swells, it can result in internal hemorrhoids, which are concealed by mucous membranes. External hemorrhoids are visible around the outside of the anus and frequently feelable (Mukherjee, D. R et al, 1976; Johansen, K. et al., 1980). Unless extremely severe condition, internal hemorrhoids are invisible and less felt. When both types are present, internal external hemorrhoids are distinct from external hemorrhoids (Mukherjee, D. R et al., 1976; Hosking, S. W et al., 1989). For practical purposes, internal hemorrhoids are further graded based on their appearance and degree of prolapse, known as Goligher's classification:

(1) First-degree hemorrhoids (grade I): The anal cushions bleed but do not prolapse;

(2) Second-degree hemorrhoids (grade II): The anal cushions prolapse through the anus on straining but reduce spontaneously;

(3) Third-degree hemorrhoids (grade III): The anal cushions prolapse through the anus on straining or exertion and require manual replacement into the anal canal; and

(4) Fourth-degree hemorrhoids (grade IV): The prolapse stays out at all times and is irreducible.

Acutely thrombosed, incarcerated internal hemorrhoids and incarcerated, thrombosed hemorrhoids involving circumferential rectal mucosal prolapse are also fourth-degree hemorrhoids (Clinical Practice Committee et al., 2004).

DIAGNOSIS OF HEMORRHOIDS

When a patient presents with symptoms such as rectal discomfort, swelling, pain, discharge, and bleeding during defecation, it is advisable to seek a comprehensive evaluation. This should include a rectal examination, a proctoscopic examination, and in certain situations, a sigmoidoscopy or colonoscopy (Loder, P. B et al., 1994). Along with performing a close rectal exam with a gloved, greased finger to feel for irregularities and an anoscope—a hollow, illuminated tube excellent for viewing internal hemorrhoids—the doctor will inspect the anus and rectum to check for enlarged blood vessels that suggest hemorrhoids (Gami, B, 2011).

CAUSES OF HEMORRHOIDS

Hemorrhoids' true etiology is unknown (Madoff, R. D et al., 2004). Temperament, bodily habits, customs, passions, sedentary lifestyle, tight clothing, climate, and seasons are a few of the initial causes that were suggested (Hulme-Moir, M et al., 2001). Patients with spinal cord injuries frequently experience hemorrhoids; other factors that may be contributing include constipation, chronic diarrhea, poor toilet habits, delaying bowel movements, and a low-fiber diet (Yarnell, E, 2000). According to recent research, there are several factors that contribute to increased intra-abdominal pressure, such as genetic predisposition, heredity, gravity, intrinsic blood vessel wall weakness, prolonged forceful valsalva defecation, pregnancy-related venous outflow obstruction, and constipated stool in the rectal ampulla (Pfenninger, J. L et al

1995; Parks, A. G et al., 1956). Severe hemorrhoids may be brought on by alcoholic cirrhosis or other causes of portal blockage. Haemorrhoids may, less frequently but significantly more crucially, be indicative of collateral anastomotic channels that form as a result of portal hypertension (Cotran, R. S et al., 1999).

TREATMENT OF HEMORRHOIDS

Increased dietary fiber, oral fluids to stay hydrated, non-steroidal anti-inflammatory medicines (NSAIDs), sitz baths, rest, and other measures are commonly used as treatments. It has been demonstrated that consuming more fiber improves results, and this can be done by making dietary changes or taking fibre supplements (Alonso-Coello et al., 2006; MacLeod, J. H, 1982). Other therapeutic modalities include rubber band ligation (RBL), conventional hemorrhoidectomy, and Longo's approach (Longo. A, 1998) of stapled hemorrhoidopexy, which started a revolution in the surgical treatment of hemorrhoidal illness. RBL, an office technique that doesn't require anaesthesia, involves stopping the blood supply to the troublesome hemorrhoid using a latex band. Retroperitoneal sepsis following RBL has been reported to occur both fatally and nonfatally on several occasions (Quevedo-Bonilla, G et al.,1988; Scarpa, F. J et al., 1988). The surgery procedure is not without consequences.

COMMONLY USED PLANTS IN THE TREATMENT OF PILES

1. *Abutilon indicum*

Abutilon indicum, commonly known as Indian mallow, is a member of the Malvaceae family. In traditional medicine, various parts of this plant are used for their therapeutic properties. The leaves, seeds, and roots of *A. indicum* are employed in different preparations for their potential benefits, ranging from anti-inflammatory to antimicrobial properties. Hence, they are been used to treat piles or haemorrhoids (Ignacimuthu, S et al., 2008).

2. *Pergularia daemia*

Pergularia daemia, commonly known as "Atufa," belongs to the family Asclepiadaceae. In traditional practices, various parts of this plant are utilized for medicinal purposes. The roots and leaves of *P. daemia* are often employed in herbal preparations, offering potential therapeutic benefits to treat piles.

This plant has been explored for its diverse properties, including anti-inflammatory and analgesic effects (Bhat, R. B et al., 1985).

3. *Funtumia elastic*

It is commonly referred to as "Preuss Rubber," is a member of the Apocynaceae family. The latex extracted from the bark of *F. elastic* is a significant part used for various purposes. This latex, known for its elastic properties, has been traditionally utilized in African folk medicine and also serves as a source of natural rubber. The plant holds importance for its contributions to both traditional healing practices and economic uses. The aerial parts of this plant is been used to treat piles. This is applied topically or used in formulations for its purported anti-inflammatory and soothing effects on hemorrhoidal discomfort (Idu, M et al., 2007).

4. *Cannabis sativa*

It belongs to the Cannabaceae family and is frequently referred to as hemp or marijuana. The plant is well-known for its many applications, and the main parts used for a variety of tasks are the leaves, flowers, and seeds. Delta-9-tetrahydrocannabinol (THC) and Cannabidiol (CBD), two substances found in *Cannabis sativa*, have been researched for their possible medical and recreational benefits. The flowers and leaves are used to treat the piles (Acharya, E et al., 2006).

5. *Punica granatum*

Pomegranates, or *Punica granatum*, are members of the Lythraceae family. This little tree or deciduous shrub is well-known for its vivid red fruit, which is stuffed with juicy arils. *Punica granatum* is mostly utilized for its seeds and arils, which are prized for both their possible health advantages and their sweet and tart flavour. Pomegranates are consumed for their antioxidant qualities, which are thought to contribute to a number of health benefits, and have a long history in traditional medicine. The seeds and flowers are been used in the treatment of the piles or the hemorrhoids in the form of decoction (Gangwar, K. K et al., 2008).

6. *Cinnamomum tamala* Linn

It is referred to as Tejpat or Indian bay leaf, is a member of the Euphorbiaceae family. Originating from the Indian subcontinent, this evergreen tree is prized for its fragrant foliage. The main ingredient

is the aromatic and savory bay leaf, which is frequently used in cooking to improve the flavor of many foods. Apart from its culinary applications, *C. tamala* is acknowledged in conventional medicine for its possible medicinal attributes to address piles (Anisuzzaman, M et al., 2007).

7. *Ficus racemosa*

Ficus racemosa, commonly known as the cluster fig tree, belongs to the Moraceae family. In traditional medicine, various parts of this plant are utilized for their therapeutic properties. Specifically, the latex derived from the bark of *F. racemosa* is often employed in remedies aimed at alleviating piles. This latex is known for its potential anti-inflammatory and wound-healing properties, making it a popular choice for treating various ailments, including hemorrhoids. Additionally, extracts from other parts of the plant, such as the leaves and roots, may also hold medicinal value and could potentially be explored for their efficacy in managing piles (Anisuzzaman, M et al., 2007).

8. *Allium cepa L*

Onion, or *Allium cepa L.*, is a member of the Amaryllidaceae family. Different components of this plant are used for their medicinal qualities in traditional medicine. In particular, pile-relieving treatments frequently include the bulb of *Allium cepa*. The bulb contains full of bioactive substances, including as sulfur-containing compounds and flavonoids, which are thought to have antibacterial and anti-inflammatory qualities. For those with piles, these qualities might aid in lowering inflammation and accelerating healing. Onion extracts have also been researched for their ability to build blood vessels and enhance blood circulation, which may add to their efficacy in treating this illness.

Preparation and administration: The bulb is heated, crushed and applied externally to the affected part daily (Shettar, V. B et al., 2021).

9. *Ehretia amoena Klotzsch*

Belonging to the Boraginaceae family is the plant *Ehretia amoena Klotzsch*, also referred to as Amoena. Traditionally, piles have been treated with it. Usually, the leaves or bark of the plant are used for this purpose, and they are prepared in different ways such decoctions or ointments.

Preparation and administration: The plant is boiled to make a decoction and a cup of it is taken twice a day (Shukla, A et al., 2018).

10. *Jatropha gossypifolia*

Jatropha gossypifolia contains several compounds that are believed to aid in the treatment of piles. Some of these compounds include flavonoids, alkaloids, tannins, and saponins. Flavonoids possess anti-inflammatory properties and can help reduce swelling and discomfort associated with piles. Alkaloids may have analgesic effects, providing relief from pain. Tannins have astringent properties that can help shrink swollen tissues and reduce bleeding. Saponins may contribute to the plant's anti-inflammatory and analgesic effect.

Preparation and administration: Boiled to make a decoction and taken it in a cup twice a day (Ariyo, O. C et al., 2020; Soladoye, M. O et al., 2010).

11. *Aloe vera*

Aloe vera, or aloe, is a member of the Asphodelaceae (formerly Liliaceae) family of plants. Traditionally, piles have been treated with it. The portion of the aloe vera plant that is mainly utilized for this purpose is the gel that is removed from the leaves. The anti-inflammatory and calming qualities of this gel are well-known for their ability to reduce pile-related discomfort and symptoms like burning, itching, and inflammation.

Preparation and administration: After peeling, apply and massage the affected area of the anus (Shettar, V. B et al., 2021).

12. *Psidium guajava*

Guava, or *Psidium guajava*, is a member of the Myrtaceae family. It has historically been applied to pile treatment. The portion of the *Psidium guajava* plant that is mainly utilized for this is the leaves. Bioactive substances found in these leaves include tannins, phenolic acids, and flavonoids; these substances have astringent, analgesic, and anti-inflammatory qualities. These characteristics might lessen discomfort, facilitate pile healing, and lessen inflammation.

Preparation and administration: Crush the leaves and applied to the affected part by massaging (Parvaiz, M et al., 2013).

13. *Hymenocardia acida*

The Tulip tree, or *Hymenocardia acida*, is a member of the Hymenocardia family. Traditionally, piles have been treated with it. The main portion of the *H. acida* tree that is utilized for this is its bark. Many bioactive substances found in the bark, such as tannins, flavonoids, and alkaloids, are thought to have analgesic, astringent, and anti-inflammatory effects. These qualities might aid in pain relief and pile repair.

Preparation and administration: Crush and soak the bark in water and the is taken three-times a day (Sofidiya, M. O et al., 2009).

14. *Aesculus hippocastanum* L

Aesculus seeds are associated with their antihemorrhoidal properties. In Europe, hippocastanum has been used to treat hemorrhoidal disease. Clinical and endoscopic symptoms improved in patients with acute symptomatic hemorrhoids after an average of six days of administration, according to a clinical trial conducted on *A. hippocastanum* (Pirard, J et al., 1976). Aescin is the main active ingredient in the seed extract of *A. hippocastanum*. The triterpene saponins known as a and 13 are combined to generate the aescin. The active version of these two is β -aescin. Aescin exhibits venotonic, anti-edematous, and anti-inflammatory properties (Sirtori C. R. et al., 2001).

15. *Boswellia* species:

Traditional Iranian medicine has utilized gum resins from *Boswellia* species, specifically *B. serrata* Roxb. ex Colebr. and *B. carterii* Birdw., to treat hemorrhoids (Zareian M- ali et al., 2017). Numerous studies have documented gum resin's anti-inflammatory properties, particularly those of its main component, boswellic acids (Siddiqui, M.Z et al., 2011).

16. *Commiphora* species

In traditional Iranian medicine, the gum resins of *Commiphora mukul* and *C. myrrha* (Nees) Engler have been employed as effective plant materials for the treatment of hemorrhoids. *C. myrrha* exhibited antinociceptive and anti-inflammatory properties (Su, S et al., 2011; Su, S et al., 2012). *C. mukul* showed anti-inflammatory effects *in vitro* (Francis, J.A et al., 2004). Strong anti-inflammatory effects were demonstrated by terpenoids and

guggulosteroids from *C. mukul* (Kimura, I et al., 2001; Francis, J.A et al., 2004).

17. *Euphorbia prostrata aiton*

A preliminary study showed that *Euphorbia prostrata* can be used for the treatment of grade I and II of hemorrhoids with satisfactory efficacy and safety (Gupta, P. J et al., 2011). This plant works against hemorrhoids by improving venous tone, decreasing capillary permeability, increasing lymphatic drainage, preserving capillary bed microcirculation, and suppressing inflammatory responses. According to reports, thromboxane A₂, prostaglandin E₂, and leukocyte activation, movement, and adhesion are all strongly inhibited by flavonoids found in *Euphorbia* (MacKay, D et al., 2001). Studies with the standardized extract of *E. prostrata*, when administered orally showed an inhibition of both canageenan-induced paw edema and histamine-induced edema (Singla, A. K et al., 1990). Another important component of the *E. prostrata* extract is ellagic acid, which has been shown to inhibit the production of histamine (Choi, Y. H et al., 2009).

18. *Ginkgo biloba* L

Patients with hemorrhoids benefited from the use of Ginkor-f01te, a commercial medicine made from *Ginkgo biloba* leaf extract combined with the flavonoid troxerutin and the vasodilator heptaminol (Sumboonnanonda, K et al., 2004; Hep, A et al., 2000; SoullardJ and Contou J. F et al., 1978). *G.biloba* may help hemorrhoids by acting as a venoprotective and anti-inflammatory medication (Chan, P. C et al., 2007).

19. *Juniperus* species

Turkish folk medicine uses a number of *Juniperus* species as a hemorrhoid treatment. Only methanol extracts of the fruit and leaves from *J. oxycedrus* and *J. communis* showed notable antinociceptive and anti-inflammatory properties among the five different species of *Juniperus* (Akkol, E. K et al., 2009). Diterpenoids like hinokiol, which was separated from *Juniperus polycarpus*, have been demonstrated to have anti-inflammatory properties among the various substances found in *Juniperus* species (El-Sayed, A., 1998).

20. *Melastoma malabathricum* L

Malay traditional medicine has employed the powdered leaves and roots to ease hemorrhoids' irritation. Hemorrhoidal bleeding has also been

treated with the flower. Numerous *in vivo* investigations have proven this plant's antinociceptive, anti-inflammatory, and wound-healing properties (Zakaria, Z. A et al., 2006; Susanti, D et al., 2008; Sulaiman, M. R et al., 2004; Sunilson, A.J et al., 2010). Flavonoids and tannins, two chemical components found in this plant, may be responsible for the claimed activity (Joffry, S. M et al., 2012).

21. *Myrtus communis* L

Many investigations have assessed *M. communis* for anti-inflammatory and antinociceptive properties (Al-Hindawi et al., 1989; Hosseinzadeh, H et al., 2011; Amira, S et al., 2012). One of the main ingredients of this plant, flavonoids, may be primarily responsible pharmacological characteristics (Montoro, P et al., 2006).

22. *Onosma* species

Turkish traditional medicine treats hemorrhoids with *Onosma* species. Several *Onosma* species were screened for their anti-inflammatory and antinociceptive properties, and *O. isauricum*, *O. sericeum*, and *O. cmcheranum* showed notable activity (Tosun, A et al., 2008). It has been discovered that onosmins, a type of flavonoid present in *Onosma* species, block the activity of the lipoxigenase enzyme (Ahmad, I et al., 2005). Furthermore, it has been reported that an accumulation of naphthaquinones of alkannin and shikonin derivatives occurs in the root barks of various *Onosma* species. These substances have strong anti-inflammatory properties (Tanaka, S et al., 1986).

23. *Phlomis* species

Phlomis species has been used to cure hemorrhoids in Spanish traditional medicine (Limem-Ben Amor, I et al., 2009). Reports on the vascular protection properties and antinociceptive properties of *Phlomis* species exist (Sarkhail, P et al., 2003; Mohajer, M et al., 2006; Ismailoglu, U. B et al., 2002). Additionally, a significant number of flavonoids found in these species have been shown to be effective in the treatment of hemorrhoids (Limem-Ben Amor et al., 2009).

24. *Plantago ovata* Forssk

Clinical trial results demonstrated the advantages of *Plantago ovata* seed husk for hemorrhoid sufferers (Webster, D.J et al., 1978; Moesgaard, F et al., 1982; Perez-Miranda, M et al., 1996). *Plantago*

seed husk has anti-bleeding, anti-symptomatic, and anti-hemorrhoidal cushioning properties. *Plantago* was also used to treat problems following a hemorrhoidectomy. According to reports, treating *P. ovata* patients after an open hemorrhoidectomy reduced pain and tenesmus rate, and the length of the postoperative hospital stay was significantly reduced (Kecmanovic, D. M et al., 2006).

25. *Verbascum* species

In traditional Turkish medicine, various *Verbascum* species have been used to treat hemorrhoids. The *V. mucronatum* flower's aqueous extract has demonstrated anti-inflammatory, antinociceptive, and wound-healing properties. This extract's fractionation revealed that verbascoside, in particular, and other iridoid glycosides, are what cause these effects (Akdemir, Z et al., 2011). Other *Verbascum* species, such as *V. latisepalum* and *V. salviifolium*, demonstrated notable antinociceptive and anti-inflammatory properties in addition to *V. mucronatum* (Tatli, I. I et al., 2008). *V. lasianthum* methanol extract exhibited strong anti-inflammatory and antinociceptive properties. Several iridoid glycosides are isolated through the fractionation of these extracts, and it was shown that aucubin and ilwensisaponin A are the ones responsible for the aforementioned pharmacological effects (Kupeli, E et al., 2007).

26. *Azadirachta indica* (Neem bark)

Neem aids in the removal of waste and prevents constipation, which helps to prevent hemorrhoids. By fortifying vein walls, it stops bleeding, hence exhibiting antihemorrhagic activity and aiding in the treatment of bleeding piles. Both nimbidine and azadirachtin have analgesic properties. The inhibition of prostaglandin synthesis, a peripheral method of pain inhibition, is preferred to produce the analgesic effect. It affects mediators that also produce pain and fever, such as histamine, bradykinins, leucotrienes, prostaglandins (particularly the E series), and serotonin. As such, it works well for hemorrhoidal-related acute inflammatory disorders (Sonavaria, D et al., 2019).

THE PHARMACOLOGICAL AND PHYTOCHEMICAL CHARACTERISTICS OF BOTANICALS

Plants' secondary metabolic products determine their therapeutic effects (Wink, M., 1999). The

following groups were identified as the cause of plants' antihemorrhoidal qualities,

TRITERPENOIDS

Tropical medicinal plant *Centella asiatica* has been used for therapeutic purposes for a very long time. The pentacyclic derivatives asiatic acid, madecassic acid, and asiaticoside are the active ingredients of these plants (Brinkhaus, B et al., 2000), are potentially improving capillary permeability in CVI and varicose vein therapies, raising antioxidant levels in wound healing, and enhancing connective tissue integrity (Shukla, A et al., 1999). The whole triterpenoid fraction of *C. asiatica*, or TTFCa, enhances microcirculation, lowers capillary filtration rate, and improves vascular tone. TTFCa was found to have a beneficial effect on venous disease by lowering blood levels of lysosomal enzymes (beta-glucuronidase, beta-N-acetylglucosaminidase, and arylsulfatase) involved in mucopolysaccharide decomposition.

TANNINS

The tannin content of plants with antihemorrhoidal qualities has been observed for *Hamamelis virginiana* (Fleming, T., 1998), *Achillea millefolium* L (Teixeira, R. D. O et al., 2003), *Embllica officinalis* (Kirtikara, K. R et al., 2001), *Cassia fistula*, *Terminalia chebula*, and *Vitex nigundo*. Additional research reveals that tannins have anti-inflammatory, astringent, and vasoconstrictive properties; these properties make them useful for treating hemorrhoids. Those who suffer from bleeding hemorrhoids can benefit from tannin's astringent properties.

SAPONIN GLYCOSIDES

Ruscus aculeatus is well-known for treating internal hemorrhoids and hemorrhoids associated with pregnancy-related problems. These plants' extract, which is attributed to saponin glycoside, has anti-inflammatory and astringent qualities that make it useful for raising venous tone (De Combarieu, E et al., 2002).

TRITERPENIC SAPONINS

Horse chestnut seed extracts, or *Aesculus hippocastanum* (HCSE), have been used to treat chronic CVI (Ernst, E., 1999). Triterpenic saponin has recently been found to be the active ingredient in HCSE. An *in vitro* investigation demonstrates that HCSE suppressed the activity of the enzyme

hyaluronidase and elastase, which are involved in the breakdown of proteoglycan and damage a portion of the extravascular matrix and capillary endothelium. These characteristics make HCSE perfect for treating hemorrhoids (MacKay, D et al., 2001). Additionally, HCSE exhibits anti-inflammatory, venotonic, vascular protecting, and free radical scavenging qualities.

BIOFLAVONOIDS

Bioflavonoids demonstrate vasculoprotective properties, phlebotonic action, and antagonistic effects on biochemical mediators of inflammation. Based on plethysmography measurements of vein elasticity and venous tone, human trials have demonstrated that bioflavonoids can also reduce plasma indicators of endothelial activation (Shoab, S. S et al., 1999). Jacques Masquelier was the first person in France to extract bioflavonoids, specifically oligomeric proanthocyanidin complex (OPCs), from grape seeds and pine bark (BHARAT, G., 2014). OPCs contain a number of characteristics, including the ability to block the enzymes collagenase, elastase, and hyaluronidase as well as their ability to scavenge free radicals. Daflon 500 © Les Laboratoires Servier France, a bioflavonoid containing 90% diosmin and 10% hesperidin, was used to treat both acute and chronic hemorrhoidal symptoms. It improved discharge, bleeding, edema, and erythema, as well as blood vessel health (BHARAT, G., 2014).

TOCOTRIENOLS

Rice bran and palm oils are rich sources of tocotrienols. Health benefits, such as decreasing cholesterol (Qureshi, A. A et al., 2000), antioxidant activity, anti-cancer effect, and preventing atherosclerosis (Qureshi, A. A et al., 2002), have been thoroughly researched. Tocotrienols haven't been researched for pathology associated to veins, despite strong pharmacological studies. Tocotrienols, which are thought to be safe and efficacious at doses of 50–100 mg/diet, were initially studied by Silvia and her group for the treatment of hemorrhoids. In hemorrhoid therapies, tocotrienols perform the roles of ROS scavengers and antioxidant enzyme up-regulators (Vertuani, S et al., 2004).

VOLATILE OILS

Volatile oil made by oxygenated chemicals found in terpenes. They consist primarily of mono (C₅H₈), sesqui (C₁₀H₁₆), and diterpenes (C₁₅H₂₄), as well as isoprene units (C₅H₈). These all add up to the positive effects of volatile oil (Buchbauer, G., 2000). Many bioactivities, including antibacterial, hypotensive, glycaemic, anti-inflammatory, and antidiarrheal properties, have been linked to essential oils (Buchbauer, G., 2000; Lahlou, M., 2003). Many essential oils are utilized as gastroprotectants or for gastrointestinal disorders (Santos, F. A et al., 2001; Baggio, C. H et al., 2003). Because of all these benefits, essential oils are the finest choice for treating hemorrhoids in the form of creams and ointments. Hemorrhoids can be treated with essential oils from *Calendula officinalis* L., *Cupressus sempervirens*, *Pelargonium graveolens*, *Juniperus communis* L., and *Mentha piperita* (Bharat, G., 2014).

HEMORRHOIDAL HOME REMEDIES (Hosking, S. W et al., 1988; Lin, J. K. 1989; Nisar, P. J et al., 2004; Peng, B. C et al., 2004).

Treating piles (hemorrhoids) should focus more on symptom relief than on enhancing the anal canal's appearance. Constipation and piles are related, as has been known for ages. It is often advised to modify one's diet to avoid constipation and straining. In one study, a high-fiber diet was found to be more effective at reducing symptoms than a placebo. In another study, the fiber-treated group with the first and the second degrees piles showed a considerable improvement utilizing Ispaghula husk. Some of the home remedies includes

- Mash a ripe banana in a cup of milk. Take this concoction three to four times a day to relieve pile-related pain.
- Soak three to four figs in a glass of water for the entire night. Eat them first thing in the morning, when your stomach is empty.
- Squeeze out the bitter gourd leaves' liquid. Every morning, take two tsp of this juice with a glass of buttermilk on an empty stomach.
- Remove around 150 ml of juice from the turnips. After mixing this juice with any other vegetable juice, such as carrot, spinach, or watercress consume it.

- Increase your intake of fruits, vegetables, and seeds including papaya, radish, bitter melon, turnip, onion, and Java Plum (Black berry) fruits, dried figs, Indian gooseberry.

CONCLUSION

This literature review on plants used to treat piles or hemorrhoids highlights a diverse array of botanical remedies with potential therapeutic effects. From traditional herbal medicines to modern phytochemical investigations, the research underscores the significance of plants in addressing this common ailment. However, further clinical studies are warranted to validate their efficacy, dosage, and safety profiles for practical application in healthcare settings. Integrating traditional knowledge with contemporary scientific methods holds promise for advancing our understanding and treatment options for piles or hemorrhoids.

REFERENCE

- [1] Acharya, E., & Pokhrel, B. (2006). Ethnomedicinal plants used by Bantar of Bhaudaha, Morang, Nepal. *Our nature*, 4(1), 96-103.
- [2] Ahmad, I., Nawaz, S. A., Afza, N., Malik, A., Fatima, I., Khan, S. B., & Choudhary, M. I. (2005). Isolation of onosmins A and B, lipoxygenase inhibitors from *Onosmahispida*. *Chemical and pharmaceutical bulletin*, 53(8), 907-910.
- [3] Akdemir, Z., Kahraman, Ç., Tatlı, I. I., Akkol, E. K., Süntar, I., & Keles, H. (2011). Bioassay-guided isolation of anti-inflammatory, antinociceptive and wound healer glycosides from the flowers of *Verbascum mucronatum* Lam. *Journal of ethnopharmacology*, 136(3), 436-443.
- [4] Akkol, E. K., Güvenç, A., & Yesilada, E. (2009). A comparative study on the antinociceptive and anti-inflammatory activities of five *Juniperus* taxa. *Journal of ethnopharmacology*, 125(2), 330-336.
- [5] Al-Hindawi, M. K., Al-Deen, I. H., Nabi, M. H., & Ismail, M. A. (1989). Anti-inflammatory activity of some Iraqi plants using intact rats. *Journal of ethnopharmacology*, 26(2), 163-168.
- [6] Alonso-Coello, P., Zhou, Q., Martinez-Zapata, M. J., Mills, E., Heels-Ansdell, D., Johanson, J. F., & Guyatt, G. (2006). Meta-analysis of

- flavonoids for the treatment of haemorrhoids. *Journal of British Surgery*, 93(8), 909-920.
- [7] Amira, S., Dade, M., Schinella, G., & Ríos, J. L. (2012). Anti-inflammatory, anti-oxidant, and apoptotic activities of four plant species used in folk medicine in the Mediterranean basin. *Pak. J. Pharm. Sci*, 25(1), 65-72.
- [8] Anisuzzaman, M., Rahman, A. H. M. M., Harun-Or-Rashid, M., Naderuzzaman, A. T. M., & Islam, A. K. M. R. (2007). An ethnobotanical study of Madhupur, Tangail. *Journal of Applied Sciences Research*, 3(7), 519-530.
- [9] Ariyo, O. C., Usman, M. B., Emeghara, U. U., Olorukooba, M. M., Fadele, O. K., Danbaki, C. A., ... & Ariyo, M. O. (2020). Indigenous curative plants used in the treatment of piles from Akinyele local government area, Ibadan, Oyo State, Nigeria. *Annual Research & Review in Biology*, 35(6), 78-89.
- [10] Baggio, C. H., Freitas, C. S., Rieck, L., & Marques, M. C. A. (2003). Gastroprotective effects of a crude extract of *Baccharisillinita* DC in rats. *Pharmacological Research*, 47(1), 93-98.
- [11] Bailey, H. R. (2004). Innovations for an Age-Old Problem: Hemorrhoids in the Female Patient. *FEMALE PATIENT-PRACTICAL OB GYN MEDICINE THEN OB GYN EDITION-*, 29(1), 17-23.
- [12] BHARAT, G. (2014). HEMORRHOIDS—A Review. *Indian Journal of Pharmaceutics*, 5(1), 37-42.
- [13] Bhat, R. B., Adeloje, A. A., & Etejere, E. O. (1985). Some medicinal plants of Nigeria. *J. Econ. Taxon. Bot*, 6, 161-165.
- [14] Brinkhaus, B., Lindner, M., Schuppan, D., & Hahn, E. G. (2000). Chemical, pharmacological and clinical profile of the East Asian medical plant *Centella asiatica*. *Phytomedicine*, 7(5), 427-448.
- [15] Buchbauer, G. (2000). The detailed analysis of essential oils leads to the understanding of their properties. *CHEMICAL WEEKLY-BOMBAY-*, 45(49), 163-165.
- [16] Chan, P. C., Xia, Q., & Fu, P. P. (2007). Ginkgo biloba leaf extract: biological, medicinal, and toxicological effects. *Journal of environmental science and health part C*, 25(3), 211-244.
- [17] Chawla, Y., & Dilawari, J. B. (1991). Anorectal varices--their frequency in cirrhotic and non-cirrhotic portal hypertension. *Gut*, 32(3), 309-311.
- [18] Choi, Y. H., & Yan, G. H. (2009). Ellagic Acid attenuates immunoglobulin E-mediated allergic response in mast cells. *Biological and Pharmaceutical Bulletin*, 32(6), 1118-1121.
- [19] Clinical Practice Committee, & American Gastroenterological Association. (2004). American Gastroenterological Association medical position statement: Diagnosis and treatment of hemorrhoids. *Gastroenterology*, 126(5), 1461-1462.
- [20] Cotran, R. S., Kumar, V., & Collins, T. (1999). Robbins pathologic basis of disease. In *Robbins pathologic basis of disease* (pp. xv-1425).
- [21] De Combarieu, E., Falzoni, M., Fuzzati, N., Gattesco, F., Giori, A., Lovati, M., & Pace, R. (2002). Identification of *Ruscus* steroidal saponins by HPLC-MS analysis. *Fitoterapia*, 73(7-8), 583-596.
- [22] El-Sayed, A. (1998). Diterpene constituents of *Juniperus polycarpus* and their antimicrobial and anti-inflammatory activities. *Zagazig Journal of Pharmaceutical Sciences*, 7(1), 80-86.
- [23] Ernst, E. (1999). Herbal medications for common ailments in the elderly. *Drugs & aging*, 15, 423-428.
- [24] Faucheron, J. L., & Gangner, Y. (2008). Doppler-guided hemorrhoidal artery ligation for the treatment of symptomatic hemorrhoids: early and three-year follow-up results in 100 consecutive patients. *Diseases of the colon & rectum*, 51(6), 945-949.
- [25] Fleming, T. (1998). PDR for herbal medicines. *Montvale, NJ: medical Economics Company*, 822 pp.
- [26] Francis, J.A., S.N. Raja and M.G. Nair, 2004. Bioactive terpenoids and guggulosteroids from *Commiphora mukul* gum resin of potential anti-inflammatory interest. *Biodivers.*, 1: 1842-1853.
- [27] Gami, B. (2011). Hemorrhoids-a common ailment among adults, causes & treatment: a review. *Int J Pharm Pharm Sci*, 3(Suppl 5), 5-13.
- [28] Gangwar, K. K., & Joshi, B. D. (2008). Diversity of medicinal flora of district

- Pithoragarh & their uses by the local communities. *Biodiversity and Environmental Management*, 136-146.
- [29] Gheewala, M. N., Miss Puneekar, S. V., & Mahendrakar, M. N. (1971). Therapy of piles with Pilex tablets and ointment. *The Antiseptic*, 68, 342-347.
- [30] Gupta, P. J. (2011). The efficacy of *Euphorbia prostrata* in early grades of symptomatic hemorrhoids—a pilot study. *Eur Rev Med Pharmacol Sci*, 15(2), 199-203.
- [31] Heaton, N. D., Davenport, M., & Howard, E. R. (1992). Symptomatic hemorrhoids and anorectal varices in children with portal hypertension. *Journal of pediatric surgery*, 27(7), 833-835.
- [32] Hep, A., Robek, O., & Skricka, T. (2000). Treatment of hemorrhoids from the viewpoint of the gastroenterologist. Personal experience with the Ginkor Fort preparation. *Vnitřní Lekarství*, 46(5), 282-285.
- [33] Hosking, S. W., & Johnson, A. G. (1988). Bleeding anorectal varices—a misunderstood condition. *Surgery*, 104(1), 70-73.
- [34] Hosking, S. W., Johnson, A. G., Smart, H. L., & Triger, D. R. (1989). Anorectal varices, haemorrhoids, and portal hypertension. *The Lancet*, 333(8634), 349-352.
- [35] Hosseinzadeh, H., Khoshdel, M., & Ghorbani, M. (2011). Antinociceptive, anti-inflammatory effects and acute toxicity of aqueous and ethanolic extracts of *Myrtus communis* L. aerial parts in mice. *Journal of acupuncture and meridian studies*, 4(4), 242-247.
- [36] Hulme-Moir, M., & Bartolo, D. C. (2001). Hemorrhoids. *Gastroenterology Clinics of North America*, 30(1), 183-197.
- [37] Idu, M., & Osemwegie, O. O. (2007). Some medicinal flora of Okomu Forest Reserve in Southern Nigeria.
- [38] Ignacimuthu, S., Ayyanar, M., & Sankarasivaraman, K. (2008). Ethnobotanical study of medicinal plants used by Paliyartribals in Theni district of Tamil Nadu, India. *Fitoterapia*, 79(7-8), 562-568.
- [39] Ismailoglu, U. B., Saracoglu, I., Harput, U. S., & Sahin-Erdemli, I. (2002). Effects of phenylpropanoid and iridoid glycosides on free radical-induced impairment of endothelium-dependent relaxation in rat aortic rings. *Journal of ethnopharmacology*, 79(2), 193-197.
- [40] Joffry, S. M., Yob, N. J., Rofiee, M. S., Affandi, M. M. R., Suhaili, Z., Othman, F., ... & Zakaria, Z. A. (2012). *Melastomamalabathricum* (L.) Smith ethnomedicinal uses, chemical constituents, and pharmacological properties: a review. *Evidence-Based Complementary and Alternative Medicine*, 2012.
- [41] Johansen, K., Bardin, J., & Orloff, M. J. (1980). Massive bleeding from hemorrhoidal varices in portal hypertension. *Jama*, 244(18), 2084-2085.
- [42] Johanson, J. F., & Rimm, A. (1992). Optimal nonsurgical treatment of hemorrhoids: a comparative analysis of infrared coagulation, rubber band ligation, and injection sclerotherapy. *American Journal of Gastroenterology (Springer Nature)*, 87(11).
- [43] Katz, J. A., Rubin, R. A., Cope, C., Holland, G., & Brass, C. A. (1993). Recurrent bleeding from anorectal varices: successful treatment with a transjugular intrahepatic portosystemic shunt. *American Journal of Gastroenterology (Springer Nature)*, 88(7).
- [44] Kecmanovic, D. M., Pavlov, M. J., Ceranic, M. S., Kerkez, M. D., Rankovic, V. I., & Masirevic, V. P. (2006). Bulk agent *Plantago ovata* after Milligan-Morgan hemorrhoidectomy with Ligasure™. *Phytotherapy Research: An International Journal Devoted to Pharmacological and Toxicological Evaluation of Natural Product Derivatives*, 20(8), 655-658.
- [45] Kimura, I., Yoshikawa, M., Kobayashi, S., Sugihara, Y., Suzuki, M., Oominami, H., ... & Doiphode, V. V. (2001). New triterpenes, myrrhanol A and myrrhanone A, from guggul-gum resins, and their potent anti-inflammatory effect on adjuvant-induced air-pouch granuloma of mice. *Bioorganic & Medicinal Chemistry Letters*, 11(8), 985-989.
- [46] Kirtikara, K. R., Basu, B. D., An, I. C. S., Blatter, E., Caius, J. F., & Mhaskar, K. S. (2001). *Indian medicinal plants, with illustrations* (Vol. 3), 852 pp.
- [47] Kupeli, E., Tatli, I. I., Akdemir, Z. S., & Yesilada, E. (2007). Bioassay-guided isolation of anti-inflammatory and antinociceptive glycoterpenoids from the flowers of *Verbascum lasianthum* Boiss. *Ex*

- Bentham. *Journal of ethnopharmacology*, 110(3), 444-450.
- [48] Lahlou, M. (2003). Composition and molluscicidal properties of essential oils of five Moroccan Pinaceae. *Pharmaceutical biology*, 41(3), 207-210.
- [49] Liebach, J. R., & Cerda, J. J. (1991). Hemorrhoids: modern treatment methods. *Hosp Med*, 53, 68.
- [50] Limem-Ben Amor, I., Boubaker, J., Ben Sgaier, M., Skandrani, I., Bhouri, W., Neffati, A., Kilani, S., Bouhleb, I., Ghedira, K., & Chekir-Ghedira, L. (2009). Phytochemistry and biological activities of *Phlomis* species. *Journal of ethnopharmacology*, 125(2), 183-202.
- [51] Lin, J. K. (1989). Anal manometric studies in hemorrhoids and anal fissures. *Diseases of the colon & rectum*, 32, 839-842.
- [52] Loder, P. B., Kamm, M. A., Nicholls, R. J., & Phillips, R. K. S. (1994). Haemorrhoids: pathology, pathophysiology and aetiology. *British journal of surgery*, 81(7), 946-954.
- [53] Longo, A. (1998). Treatment of hemorrhoids disease by reduction of mucosa and hemorrhoidal prolapse with a circular suturing device: a new procedure. In *6th World Congress of Endoscopic Surgery*.
- [54] MacKay, D. (2001). Hemorrhoids and varicose veins: a review of treatment options. *Alternative medicine review*, 6(2), 126-126.
- [55] MacLeod, J. H. (1982). In defense of cryotherapy for hemorrhoids: A modified method. *Diseases of the Colon & Rectum*, 25, 332-335.
- [56] Madoff, R. D., & Fleshman, J. W. (2004). American gastroenterological association technical review on the diagnosis and treatment of hemorrhoids. *Gastroenterology*, 126(5), 1463-1473.
- [57] Moesgaard, F., Nielsen, L., Hansen, J. B., & Knudsen, J. T. (1982). High-fiber diet reduces bleeding and pain in patients with hemorrhoids: a double-blind trial of Vi-Siblin®. *Diseases of the Colon & Rectum*, 25, 454-456.
- [58] Mohajer, M., Sarkhail, P., Hajarolasvadi, N., Zamani, M. J., Khorasani, R., Shafiee, A., ... & Abdollahi, M. (2006). Antiinflammatory and analgesic effects of *Phlomis lanceolata* Boiss. and Hohen. extracts and examination of their components.
- [59] Montoro, P., Tuberoso, C. I., Piacente, S., Perrone, A., De Feo, V., Cabras, P., & Pizzi, C. (2006). Stability and antioxidant activity of polyphenols in extracts of *Myrtus communis* L. berries used for the preparation of myrtle liqueur. *Journal of pharmaceutical and biomedical analysis*, 41(5), 1614-1619.
- [60] Mukherjee, D. R., & Poddar, H. (1976). Pilex therapy in Piles-a Preliminary Report. *The antiseptic*, 10, 541.
- [61] Navarra, L., Pietroletti, R., Maggi, G., Leardi, S., & Simi, M. (1999). Diagnosis and treatment of haemorrhoids in the elderly: results from 291 patients. *Techniques in Coloproctology*, 3, 127-130.
- [62] Nisar, P. J., Acheson, A. G., Neal, K. R., & Scholefield, J. H. (2004). Stapled hemorrhoidopexy compared with conventional hemorrhoidectomy: systematic review of randomized, controlled trials. *Diseases of the colon & rectum*, 47(11), 1837-1845.
- [63] Parks, A. G. (1956). The surgical treatment of haemorrhoids. *British Journal of surgery*, 43(180), 337-351.
- [64] Parvaiz, M., Hussain, K., Tufail, M., William, G., Shoaib, M., & Jamil, M. D. (2013). Ethnobotanical survey of wild plants used to cure piles in District Gujrat, Punjab, Pakistan. *Global Journal of Pharmacology*, 7(3), 337-341.
- [65] Peng, B. C., Jayne, D. G., & Ho, Y. H. (2003). Randomized Trial of Rubber Band Ligation vs. Stapled Hemorrhoidectomy for Prolapsed Piles. *Diseases of the colon & rectum*, 46(3), 291-297.
- [66] Perez-Miranda, M., Gomez-Cedenilla, A., Leon-Colombo, T., Pajares, J., & Mate-Jimenez, J. (1996). Effect of fiber supplements on internal bleeding hemorrhoids. *Hepato-gastroenterology*, 43(12), 1504-1507.
- [67] Pfenninger, J. L., & Surrell, J. (1995). Nonsurgical treatment options for internal hemorrhoids. *American Family Physician*, 52(3), 821-34.
- [68] Pirard, J., Gillet, P., Guffens, J. M., & Defrance, P. (1976). Double blind study of reparil in proctology. *Revue medicale de Liege*, 31(10), 343-345.

- [69] Quevedo-Bonilla, G., Farkas, A. M., Abcarian, H., Hambrick, E., & Orsay, C. P. (1988). Septic complications of hemorrhoidal banding. *Archives of Surgery*, 123(5), 650-651.
- [70] Qureshi, A. A., Mo, H., Packer, L., & Peterson, D. M. (2000). Isolation and identification of novel tocotrienols from rice bran with hypocholesterolemic, antioxidant, and antitumor properties. *Journal of Agricultural and Food Chemistry*, 48(8), 3130-3140.
- [71] Qureshi, A. A., Sami, S. A., Salser, W. A., & Khan, F. A. (2002). Dose-dependent suppression of serum cholesterol by tocotrienol-rich fraction (TRF25) of rice bran in hypercholesterolemic humans. *Atherosclerosis*, 161(1), 199-207.
- [72] Rangnekar, G. V., & Arora, O. P. (1974). Treatment of piles with indigenous drugs—pilex tablets and ointment along with styplon. *Indian Medical Journal*, 68(10), 240.
- [73] Saleeby Jr, R. G., Rosen, L., Stasik, J. J., Riether, R. D., Sheets, J., & Khubchandani, I. T. (1991). Hemorrhoidectomy during pregnancy: risk or relief? *Diseases of the colon & rectum*, 34(3), 260-261.
- [74] Santos, F. A., & Rao, V. S. N. (2001). 1, 8-cineol, a food flavoring agent, prevents ethanol-induced gastric injury in rats. *Digestive diseases and sciences*, 46, 331-337.
- [75] Sarkhail, P., Abdollahi, M., & Shafiee, A. (2003). Antinociceptive effect of *Phlomisolivieri* Benth., *Phlomis anisodonta* Boiss. and *Phlomis persica* Boiss. total extracts. *Pharmacological research*, 48(3), 263-266.
- [76] Scarpa, F. J., Hillis, W., & Sabetta, J. R. (1988). Pelvic cellulitis: a life-threatening complication of hemorrhoidal banding. *Surgery*, 103(3), 383-385.
- [77] Shettar, V. B., Ranjith, Y., & Arunakumar, N. C. (2021). Plants used for piles treatment in Shivamogga District, Karnataka. *Int J Mod Trends Sci Technol*, 7, 99-101.
- [78] Shoab, S. S., Porter, J., Scurr, J. H., & Coleridge-Smith, P. D. (1999). Endothelial activation response to oral micronised flavonoid therapy in patients with chronic venous disease—a prospective study. *European journal of vascular and endovascular surgery*, 17(4), 313-318.
- [79] Shukla, A., & Kaur, A. (2018). A systematic review of traditional uses bioactive phytoconstituents of genus *Ehretia*. *Asian journal of pharmaceutical and Clinical research*, 11(6), 88-100.
- [80] Shukla, A., Rasik, A. M., & Dhawan, B. N. (1999). Asiaticoside-induced elevation of antioxidant levels in healing wounds. *Phytotherapy Research: An International Journal Devoted to Pharmacological and Toxicological Evaluation of Natural Product Derivatives*, 13(1), 50-54.
- [81] Siddiqui, M. Z. (2011). Boswelliaserrata, a potential antiinflammatory agent: an overview. *Indian journal of pharmaceutical sciences*, 73(3), 255
- [82] Singla, A. K., & Pathak, K. (1990). Topical antiinflammatory effects of *Euphorbia prostrata* on carrageenan-induced footpad oedema in mice. *Journal of ethnopharmacology*, 29(3), 291-294.
- [83] Sirtori C. R. (2001). Aescin: pharmacology, pharmacokinetics and therapeutic profile. *Pharmacological research*, 44(3), 183–193.
- [84] Sofidiya, M. O., Adedapo, A. A., Mbagwu, H. O. C., Odukoya, O. A., Afolayan, A. J., & Familoni, O. B. (2009). Investigation of anti-inflammatory and antinociceptive activities of *Hymenocardia acida*. *Planta Medica*, 75(09), PD63.
- [85] Soladoye, M. O., Adetayo, M. O., Chukwuma, E. C., & Adetunji, A. N. (2010). Ethnobotanical survey of plants used in the treatment of haemorrhoids in South-Western Nigeria. *Ann Biol Res*, 1(4), 1-15.
- [86] Sonavaria, D., Chotalia, C., Salkar, K., & Salvi, R (2019). A Review On Probable Mode of Action of Herbal Formulation for Piles-Pylee. *Br J Med Health Res*, 6(03), 2394-2967.
- [87] Soullard, J., & Contou, J. F. (1978). A study on the use of ginkor in proctology (author's transl). *La Semaine des Hopitaux: Organe Fonde par L'association D'enseignement Medical des Hopitaux de Paris*, 54(37-40), 1177-1179.
- [88] Su, S., Hua, Y., Wang, Y., Gu, W., Zhou, W., Duan, J. A., ... & Tang, Y. (2012). Evaluation of the anti-inflammatory and analgesic properties of individual and combined extracts from *Commiphora myrrha*, and

- Boswelliacarterii. *Journal of ethnopharmacology*, 139(2), 649-656.
- [89] Su, S., Wang, T., Duan, J. A., Zhou, W., Hua, Y. Q., Tang, Y. P., ... & Qian, D. W. (2011). Anti-inflammatory and analgesic activity of different extracts of Commiphora myrrha. *Journal of ethnopharmacology*, 134(2), 251-258.
- [90] Sulaiman, M. R., Somchit, M. N., Israf, D. A., Ahmad, Z., & Moin, S. (2004). Antinociceptive effect of Melastomamalabathricum ethanolic extract in mice. *Fitoterapia*, 75(7-8), 667-672.
- [91] Sumboonnanonda, K., & Lertsithichai, P. (2004). Clinical study of the Ginkobiloba--Troloxerutin-HeptaminolHce in the treatment of acute hemorrhoidal attacks. *Journal of the Medical Association of Thailand= Chotmaihetthangphaet*, 87(2), 137-142.
- [92] Sunilson, A.J., James, J., Thomas, J., Paulraj, J., Rajavel, V., & Paliniappan, M.M. (2010). Antibacterial And Wound Healing Activities of MelastomaMalabathricum Linn. *African Journal of Infectious Diseases*, 2, 68-73.
- [93] Susanti, D., Sirat, H. M., Ahmad, F., & Ali, R. M. (2008). Bioactive constituents from the leaves of Melastomamalabathricum L. *Jurnal Ilmiah Farmasi Vol*, 5(1).
- [94] Tanaka, S., Tajima, M., Tsukada, M., & Tabata, M. (1986). A comparative study on anti-inflammatory activities of the enantiomers, shikonin and alkannin. *Journal of Natural Products*, 49(3), 466-469.
- [95] Tatli, I. I., Akkol, E. K., Yesilada, E., & Akdemir, Z. S. (2008). Antinociceptive and anti-inflammatory activities of seven endemic Verbascum species growing in Turkey. *Pharmaceutical biology*, 46(10-11), 781-788.
- [96] Teixeira, R. D. O., Camparoto, M. L., Mantovani, M. S., & Vicentini, V. E. P. (2003). Assessment of two medicinal plants, Psidium guajava L. and Achillea millefolium L., in vitro and in vivo assays. *Genetics and Molecular Biology*, 26, 551-555.
- [97] Tosun, A., Akkol, E. K., Bahadır, Ö., & Yeşilada, E. (2008). Evaluation of anti-inflammatory and antinociceptive activities of some Onosma L. species growing in Turkey. *Journal of ethnopharmacology*, 120(3), 378-381.
- [98] Vertuani, S., Bosco, E., Testoni, M., Ascanelli, S., Azzena, G., & Manfredini, S. (2004). Antioxidant herbal supplements for hemorrhoids. Developing a new formula. *Nutrafoods*, 3, 19-26.
- [99] Webster, D.J., D.C. Gough and J.L. Craveu 1978. The use of bulk evacuant in patients with haemorrhoids. *Br. J. surg.*, 65: 291-292.
- [100] Wink, M. (Ed.). (1999). *Biochemistry of plant secondary metabolism* (Vol. 2). CRC Press, 374 pp.
- [101] Yarnell, E. (2000). Naturopathic Gastroenterology, Wenatchee WA.
- [102] Yuksel, B. C., Armagan, H., Berkem, H., Yildiz, Y., Ozel, H., & Hengirmen, S. (2008). Conservative management of hemorrhoids: a comparison of venotonic flavonoid micronized purified flavonoid fraction (MPFF) and sclerotherapy. *Surgery today*, 38, 123-129.
- [103] Zakaria, Z. A., Raden Mohd. Nor, R. N. S., Hanan Kumar, G., Abdul Ghani, Z. D. F., Sulaiman, M. R., Rathna Devi, G., ... & Fatimah, C. A. (2006). Antinociceptive, anti-inflammatory and antipyretic properties of Melastomamalabathricum leaves aqueous extract in experimental animals. *Canadian journal of physiology and pharmacology*, 84(12), 1291-1299.
- [104] Zareian M- ali, Nejatbakhsh F, Yargholi A. Re (2017). Nutritional Treatment of Abnormal Uterine Bleeding in Persian Medicine. *Tradational and Integrative Medicine*, 2(4):157-159.