



(REVIEW ARTICLE)



A Review of a selected *Ayurvedic* herbal formula in the management of Thrombosed External Hemorrhoids (*Bāhya Arshas*): A critical analysis

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Abstract

Thrombosed external hemorrhoids (*Bāhya Arshas*) present a painful and debilitating condition affecting individuals across various socio-economic strata. The affliction's distressing symptoms, including severe bleeding, inflammation, and thrombosis, can disrupt daily activities. *Mimosa pudica* and *Curcuma longa* have been traditionally combined into a paste, offering potential relief. This review critically examines the effectiveness of this *Ayurvedic* herbal paste formula in treating thrombosed piles. Informed by *Ayurvedic* scriptures, contemporary texts and prior research, comprehensive insights into thrombosed piles were gathered. The two herbs featured in the paste were thoroughly investigated through a survey of literature, assessing their *Pancha Padārtha* (five elements of the herb) and pharmacological attributes relevant to management of *Bāhya Arshas*. Analysis of *Ayurvedic Pancha Padārtha* showed positive impact on derangement of *Dōsha* involved in *Bāhya Arshas* and the herbal formula's anti-pile properties, stemming from their alignment with anti-inflammatory, anti-coagulant, and analgesic effects. Numerous studies underscore the anti-pile potential of this herbal formulation, while supplementary attributes that alleviate thrombosed piles' symptoms were also highlighted. Considering both the literature review and *Pancha Padārtha* analysis, it is evident that the selected herbal formula holds promise for managing thrombosed piles. This investigation sheds light on the therapeutic potential of an *Ayurvedic* approach in addressing the challenges posed by thrombosed external hemorrhoids.

Keywords: *Arshas*; *Curcuma longa*; *Mimosa pudica*; Thrombosed piles

1. Introduction

Hemorrhoids are highly vascular submucosal cushions that underlie the distal rectal mucosa and contribute approximately 15-20% of the resting anal pressure, ensuring complete closure of the anal canal. If blood pools in the external hemorrhoid and forms a clot (thrombus), it can result in thrombosed piles. Acute pain can arise in addition to the well-known chronic abnormalities (inflammation, prolapse, swelling and pruritus), and this condition can be debilitating due to its extended length, high cost of treatments, and decreased quality of life. This issue, known as thrombosed external hemorrhoids, is widespread in young adults without gender differences. It can affect both the external and internal hemorrhoidal plexuses, with the external one being the one we will focus on in this article ^[1].

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One of the most common anorectal crises is thrombosed external hemorrhoids. They are linked to swelling and excruciating discomfort. The aetiology of the discomfort involves internal sphincter hypertonicity. All Thrombosed External Hemorrhoids patients typically have some degree of internal anal sphincter hypertonicity, which can trap the hemorrhoidal mass outside the anus and cause strangulation, necrosis, and gangrene. When a patient exhibits both an obvious perianal/anal lump and acutely significant discomfort, the diagnosis is clinical and straightforward and in any case, the size of the thrombus affects how severe the symptoms are [2].

Hemorrhoids or *Arshas* are among the *Mahāgadās* because they interfere with a person's day-to-day activities like an enemy [3]. Due to its emergence at the *Guda Bhaga*, the *Moola* of the *Shareera*, the disease known as *Arsha* has plagued humans since the beginning of time [4]. The primary affliction known as *Arshas* hurts human society. Adults frequently experience *Arshas*. Ancient doctors and surgeons who practiced Ayurveda characterized *Arshas* as an unnatural development of flesh in the *Guda* (rectal region) [5].

Arshas is discussed in *Vruddhatraya* (major classical texts) and *Laghutraya* (minor classical texts), according to Ayurveda. *Charaka Samhitā*, *Susruta Samhitā* and *Ashtānga Hrdaya Samhitā* are examples of *Vruddhatraya*. According to *Charaka Samhitā* *Arshas* arising in the external fold caused by a single *Dōsha* and manifested recently are curable easily [6]. According to the *Susruta Samhitā*, the next below *Visarjani* (second fold) or third fold, *Bahya*-external is called *Samvarani* since it constricts or closes the rectal orifice [7]. *Arshas* which are situated in the outer fold and are caused by the increase of any one *Dōsha* are easily curable, as also those which are not chronic [8].

Sārangadhara Samhitā, *Bhāvaprakāsha*, and *Mādhava Nidāna* are all part of the *Laghutraya*. According to *Mādhava Nidāna*, pile mass located in the external layer or fold of the rectum arising out of an increase of any one *Dōsha* and which is of recent onset is easily curable [9]. *Bhāvamishra* placed more emphasis on risk factors, morbidity and other behavioral treatments of *Arshas* [10].

The current study is based on an *Ayurvedic* medicinal formula used in thrombosed piles and the study critically analyzed the *Pancha Padārtha* and pharmacological activities of the ingredients in the selected formula in the management of thrombosed piles

Aims and objectives

The study was created to determine the anti-pile activity of the ingredients in selected herbal formulas in the management of thrombosed piles.

2. Research Methodology

The literary review was referred through authentic Ayurveda classics such as *Charaka Samhitā*, *Susruta Samhitā*, *Ashtānga Samgraha*, *Mādhava Nidāna*, *Bhāvaprakāshaya* and Ayurveda Pharmacopoeia. The review on thrombosed piles was conducted through recent scientific explanations and findings published in official websites and indexed journals, articles, books, reports of WHO and encyclopedias. The gathered information was compared with traditional and modern scientific explanations using based on pharmacological characteristics, *Rasa* (taste), *Guna* (quality), *Veerya* (potency), *Vipāka* (last taste) and *Prabhāva* (specific action).

2.1. Review

Herbal paste chosen from a traditional formula has two ingredients: (Table 1).

Table 1 Review of selected herbs

Ingredients	<i>Mimosa pudica</i>	<i>Curcuma longa</i>
Family	Leguminosae	Scitamineae (<u>Zingiberaceae</u>)
Sanskrit name	<i>Lajjālu</i>	<i>Haridrā</i>
Part used	Root and whole plant	Rhizome

2.1.1. *Mimosa pudica* (*Lajjālu*)

Mimosa pudica is a thorny, perennial shrub with a modest growth rate and many branches. It can be erect and can reach a height of 15 to 100 cm, although it typically grows in a trailing, sprawling manner. The root is thick and lengthy. The

leaves are bipinnate, dark green, and hairy. When touched, leaflets and leaves quickly fold up, and they likewise shut at night. Flowers grow in globular or ovoid heads that are about 9 mm in diameter and are bright purplish-pink with four conspicuous stamens. Each fruit is an oblong, flattened, recurved pod with 1–5 seeds that are 8–20 mm long and 2–6 mm wide. The seed has a finely granular surface, is flattened, light brown, and measures 2.5 to 3 mm in diameter. Up to 700 seeds per plant can be produced each year. The chemical study has revealed that *Mimosa pudica* includes a variety of substances, including "alkaloids, flavonoid C-glycosides, sterols, terenoids, tannins, saponin, and fatty acids." *Mimosa pudica* also contains the poisonous alkaloid mimosine. *Lajjālu* has *Kashāya Tikta Rasa*, *Laghu Rūksha Guna*, *Katu Vipāka*, *Sheeta Virya* and *Kapha Pitta Hara* action.

While petroleum ether extract has a minimally inhibitive effect on carrageenan-induced hind paw oedema and cotton pellet granuloma in rats, ethanol and aqueous extracts of the leaves of *Mimosa pudica* exhibit significant anti-inflammatory activities in a dose-dependent manner comparable to that of the standard drug indomethacin. When compared to the control group, all doses were used. The findings validate the plant's traditional use as a remedy for a variety of inflammatory disorders by showing that *Mimosa pudica* crude leaf extracts have strong anti-inflammatory properties [11] [12] [13] [14].

Mimosa pudica ethanol extract dosages of 250 mg/kg and 500 mg/kg increased in a dose-dependent way during the hot plate test and the tail-flick test, respectively, demonstrating analgesic activity. Utilizing the tail flick, hot plate, and acetic acid-induced writhing methods, analgesic efficacy was investigated. All of these techniques have had extremely important analgesic effects [15] [16] [17].

The complete *Mimosa pudica* plant, an ethnomedicinal plant from Tripura, India, demonstrated spermicidal and anticoagulant action in the methanolic extract, and isolated components were also assessed. The human body has a crucial mechanism called blood coagulation. Many plants include elements that aid in the development of blood clots. The phytochemicals in *Mimosa pudica* extracts are examined, and the effect of these extracts on blood coagulation in vitro is assessed. The Prothrombin Test (PT) was used to evaluate the blood clotting time. In the PT test, all extracts had longer blood clotting times than the control [18] [19]. For centuries, people have used the herb *Mimosa pudica* to cure urogenital problems, piles, diarrhea, and sinuses and to apply to wounds [20] [21].

2.1.2. *Curcuma longa* (Haridrā)

The height of a turmeric plant is approximately 1 meter (3.3 feet), and the leaves are long, simple, and have long petioles (leaf stems). The branching rhizomes that are close to the soil's surface are where the leaves appear. Young rhizomes range in colour from pale yellow to brown-orange, while older rhizomes are slightly scaly and brown. The waxy bracts, which are often pale green or tinted with purple, have little yellow-orange flowers that are borne in their axils. Diarylheptanoids, a class of compounds that includes several curcuminoids like curcumin, demethoxycurcumin, and bisdemethoxycurcumin, are among the phytochemical components of turmeric. *Haridrā* has *Katu*, *Tikta Rasa*, *Laghu*, *Rūksha Guna*, *Katu Vipāka*, *Ushna Virya* and *Balance Thridōsha*.

In vitro, animal, and human investigations on the toxicity and anti-inflammatory abilities of curcumin have all been conducted. There was no harm from curcumin in the phase 1 human trial with 25 individuals using up to 8000 mg per day for 3 months. Five further human studies utilizing daily doses of 1125–2500 mg of curcumin also found it to be safe. These human investigations have discovered some evidence of curcumin's anti-inflammatory properties. Curcumin inhibits a variety of distinct compounds linked to inflammation, according to laboratory studies [22]. According to research, curcumin is a very pleiotropic chemical that can interact with a wide range of molecules implicated in inflammation. By reducing the activity of cyclooxygenase-2 (COX-2), lipoxygenase, and inducible nitric oxide synthase (iNOS) enzymes, curcumin modulates the inflammatory response. It also inhibits the production of the inflammatory cytokines tumour necrosis factor-alpha (TNF- α), interleukin (IL) -1, -2, -6, -8, and -12, monocyte chem [23] [24] [25] [26] [27] [28] [29].

The current study found that *Curcuma longa* (rhizome) extracts showed analgesic effects when administered orally at doses of 100 and 200 mg/kg [30]. Using various animal models of analgesia, distinct extracts of *Curcuma longa*, code designated as PC/CL/SWP05, CL/111107506, and PT/0606188, were examined for their analgesic activity at three doses of 100, 200, and 400 mg/kg each. In the tail-flick test, PT/0606188 showed considerable analgesic efficacy at 400 mg/kg one hour after treatment [31] [32] [33] [34].

The anti-coagulant properties of the dried rhizome of *Haridrā*'s ethyl acetate extract were examined by Kosuge et al. in 1984. They gave the mice 0.1 g/kg intraperitoneally, which demonstrated substantial anticoagulant action. It was

discovered that ethyl acetate extract has extremely potent anticoagulant action. Results were determined to be significant at level, and a dose of 0.1 g/kg of water extract produced ambiguous results [35] [36] [37].

The herbal remedy contains a special blend of plant-based ingredients like *Curcuma longa*, and *Foeniculum vulgare* that help manage piles by easing symptoms and assisting in the recovery of hemorrhoidal oedema. By inhibiting prostaglandin synthesis, a peripheral mode of pain inhibition, *Curcuma longa* demonstrates analgesic action. It works by influencing mediators like prostaglandins, which are responsible for fever and pain. As a result, it aids in the treatment of hemorrhoids by lessening the pain brought on by piles [38].

3. Results and Discussion

The *Arshas* are described in various ways by various *Āchāryās*. *Charaka Samhitā*, *Susruta Samhitā* and *Ashtāngā Hrdāya Samhitā* explain the features of *Bāhya Arshas* while various definitions are given in *Mādhava Nidāna* and *Bhāvaprakāsha*.

Both plants share *Tikta Rasa*, *Laghu Rūksha Guna* and *Katu Vipāka*. *Bāhya Arshas* may have features of vitiation of all *Tridōshas*. Therefore *Laghu*, *Rūksha Guna*, and *Katu Vipāka* pacify *Kapha Dōsha* while *Katu*, *Tikta*, and *Kashāya Rasa* pacify both *Pitta* and *Kapha Dōshas*. *Sheeta Virya* pacifies *Pitta Dōsha* and *Ushna Virya* pacifies both *Vāta* and *Kapha Dōsha*. *Tikta Rasa* has anti-inflammatory activity and *Katu Rasa* reduces itching in piles. As well as *Mimosa pudica* pacifies *Kapha* and *Pitta Dōsha* while *Curcuma longa* balances *Thridōsha*. So selected paste is effective in the management of *Bāhya Arshas*.

If blood pools in external hemorrhoids and forms a clot (thrombus), it can result in thrombosed piles which have severe pain, swelling and inflammation. So drugs which having anti-inflammatory, anti-coagulant and analgesic effects can be used to manage thrombosed piles. According to the literature review, both ingredients in the selected paste have anti-pile activities like anti-inflammatory, anti-coagulant and analgesic effects which lower the inflammation, formation of clots and pain in the thrombosed piles. So selected paste can be used to manage thrombosed piles.

4. Conclusion

Thrombosed piles as an important public health problem have been discussed in recent few decades worldwide. *Mimosa pudica* and *Curcuma longa* are useful in the control of thrombosed piles according to the review of the literature and the *Pancha Padārtha* examination. Previous studies of pharmacological effects have revealed that the herbs in the selected herbal paste have strong anti-inflammatory capabilities. There is an urgent need to reduce the prevalence of thrombosed piles among people worldwide.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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