

Patoladi Gana Ghrita For Parikartika (fissure-in-ano): A narrative review of classical Indications, Phytochemistry and Pharmacological Rationale.

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Abstract

Background: Parikartika (fissure-in-ano) is a painful anorectal condition with cutting pain and burning (daha), with a prevalence of 17.81%. Surgical treatment risks recurrence and incontinence. Patoladi Gana Ghrita, described by Acharya Sushruta as Vranashodhak (wound-cleansing) and Dahashamak (burning-relieving) has not been evaluated for Parikartika. This narrative review synthesizes classical and modern evidence to propose its efficacy.

Methods: Classical Ayurvedic texts (Sushruta Samhita, Charaka Samhita, Bhavprakash) and published scientific literature up to November 2023 were searched using PubMed, Google Scholar, and DHARA with keywords "Patoladi Gana", "Patoladi Ghrita", "Parikartika", "fissure in ano", and the botanical names of each ingredient. Articles reporting phytochemical analysis and pharmacological actions were reviewed.

Results: Patoladi Gana plants contain terpenoids, alkaloids, flavanols, glucosides, tannins, saponins, resins, and glycosides. These phytoconstituents demonstrate antiseptic, anti-inflammatory, antimicrobial, antioxidant, analgesic, and wound-healing activities. Each ingredient individually supports Vata-Pitta shamak, Vrana Shodhana, and Vrana Ropana actions.

Conclusion: The analgesic and anti-inflammatory properties of Patoladi Gana provide a strong mechanistic rationale for its use in Parikartika. Unlike other remedies, it may offer lasting relief from daha while promoting ulcer healing. Clinical studies are urgently needed to validate this classical indication.

Keywords: Ayurveda; Fissure-in-Ano; Patoladi Gana Ghrita; Parikartika

Introduction

According to Ayurveda, health is the foremost priority. Changing lifestyles, irregular diet, and sleep disturbances disturb the digestive system, leading to many anorectal diseases, one of which is *Parikartika*. In *Shalya Tantra*, numerous surgeries are described, but the primary aim of Ayurveda is to avoid surgery as far as possible. The best surgeon treats the patient first with medical management. *Parikartika* is a condition characterized by cutting and tearing pain in the *guda* (the word means *parikartanvat vedana*)⁽⁹⁾. It has a prevalence rate of approximately 17.81% of total anorectal sufferings⁽¹⁾. It is commonly seen in young people, pregnant and lactating women, and constipated individuals who pass hard, dry stool⁽¹⁾.

Parikartika is also described as a complication of *Basti* (due to trauma or *Ruksha basti* containing *Tikshna* and *Lavana dravyas*) and as a *Vyapad* of *Panchakarma* like *Vamana* and *Virechana*. Acharya Charaka mentioned *Parikartika* as a complication of *Atisara*⁽²⁾. According to Acharya Sushruta, a person with *Mandagni* consuming *Ruksha*, *Ushna*, and *Lavana dravyas* vitiates *Pitta* and *Vata*, leading to *Parikartika*⁽⁹⁾. The cardinal symptoms are excruciating

cutting and burning pain along with bleeding before and after defecation. The etio-pathogenesis of *Parikartika* has been described in Figure 1.

Modern correlative diagnosis is fissure-in-ano, caused mainly by trauma to the anal canal from hard stool, and can be secondary to ulcerative colitis, Crohn's disease, tuberculosis, or post-surgical complications. Current treatment for acute variety includes oral painkillers, stool softeners, soothing ointments, and self-dilatation. For chronic ulcer, anal dilatation, posterior sphincterotomy, fissurectomy, and excision with skin graft have limited success rates. Surgical treatment carries fear of complications like recurrence and incontinence.

Acharya Sushruta described *Patoladi Gana* as *Vranashodhak* and *Kandunashak*, *Pittashamak*, *Dahashamak*, *Vatanulomak*, and *Yogawahi*⁽⁴⁾. A search of the literature revealed no published clinical study evaluating *Patoladi Gana Ghrita* for *Parikartika*. This review aims to propose the efficacy of *Patoladi Gana Ghrita* in the management of *Parikartika* based on classical and phytopharmacological evidence.

Materials and Methods

A narrative review was conducted using classical Ayurvedic texts (Sushruta Samhita, Charaka Samhita, Bhavprakash) and published scientific research. A systematic search of PubMed, Google Scholar, and DHARA (Digital Helpline for Ayurveda Research Articles) was performed up to November 2023. The following keywords were used: "Patoladi Gana", "Patoladi Ghrita", "Patoladi Gana Ghrita", "Parikartika", "fissure in ano", "Trichosanthes dioica", "Santalum album", "Pterocarpus santalinus", "Marsdenia tenacissima", "Tinospora cordifolia", "Cissampelos pareira", and

"Picrorrhiza kurroa". Articles reporting phytochemical analysis and pharmacological actions were included. Only articles with full text available in English were considered. Classical references were taken from standard published commentaries^(2-5,16-29).

Results

Ingredients and Classical Properties

Table 1 lists the eight ingredients of *Patoladi Gana Ghrita* along with their classical indications as described in Bhavprakash and Sushruta Samhita.

Table 1: Ingredients of Patoladi Gana Ghrita and Their Classical Indications

Sanskrit name	Botanical name	Classical indications / properties (Reference)
Go-Ghrita	Cow ghrita	Unmad, Apsmar, Shoola, Jwara; Medhya, Chakshushya; Dahashamak, Vranaropak ⁽⁵⁾
Patol	Trichosanthes dioica	Kamala, Jwara, Prameh; Kruminashak, Vedanasthapak, Vranashodhak, Vranaropak ⁽¹⁶⁾
Shweta-Chandan	Santalum album	Trishna, Jwara, Raktapitta, Amlapitta; Kandughna, Dahashamak ⁽¹⁸⁾
Rakta-Chandan	Pterocarpus santalinus	Trishna, Chardi, Atisar, Raktapitta; Shothahar, Kusthaghna, Dahashamak ⁽²⁰⁾
Murva	Marsdenia tenacissima	Amalpitta, Shool, Kamala, Prameh; Kusthghna, Krumighna ⁽²²⁾
Giloy (Guduchi)	Tinospora cordifolia	Kushtha, Grahani, Pravahika, Kamala, Atisar, Aamvata; Vedanashapak, Kusthhagna ⁽²⁴⁾
Patha	Cissampelos pareira	Kandu, Visarpa, Jwara, Shool, Arsha; Vranaropak, Kusthhagna ⁽²⁶⁾
Kutaki	Picrorrhiza kurroa Vrana,	Kusthha, Jwara, Kamala; Khedashoshk, Vranashodhak ⁽²⁸⁾

Phytochemical Constituents

The following specific bioactive compounds have been identified in the ingredients⁽⁶⁻¹³⁾:

- **Go-Ghrita:** Vitamins A, E, K; Omega-3 (DHA), Omega-6, Omega-9 fatty acids⁽⁶⁾.
- **Patol:** Cucurbitacin B, trichosanthin, flavonoids (luteolin, apigenin), sterols, triterpenoids (lupeol, betulin, taraxerol)⁽⁷⁾.
- **Shweta-Chandan:** α -santalol (41-55%), β -santalol (16-26%), epi- β -santalol, α -exo-bergamotol, teresantalol⁽⁸⁾.

- **Rakta-Chandan:** Santalin, pterocarpol, isopterocarpol, cryptomeridol, lignans, coumarins⁽⁹⁾.
- **Murva:** C21 steroidal glycosides (marsdenosides), polyoxypregnane glycosides⁽¹⁰⁾.
- **Giloy:** Tinosporaside, berberine, tinosporone, cordifoliosides A-E, syringen, giloin, gilenin⁽¹¹⁾.
- **Patha:** Isoquinoline alkaloids (cissampareine, hayatinine), flavonoids, flavonoid glycosides⁽¹²⁾.
- **Kutaki:** Picoside I, picoside II, kutkoside, apocynin, androsin, pikuroside⁽¹³⁾.

Table 2: Major Bioactive Phytoconstituents and Their Pharmacological Actions

Ingredient	Key Phytoconstituents	Primary Pharmacological Actions (References)
Go-Ghrita	DHA, EPA, Vitamins A, E, K	Wound healing, anti-inflammatory, tissue regeneration ^(6,41)
<i>Trichosanthes dioica</i>	Cucurbitacin B, trichosanthin	Anti-inflammatory, wound healing, antioxidant, antimicrobial ⁽⁷⁾
<i>Santalum album</i>	α -santalol, β -santalol	Analgesic, anti-inflammatory, antimicrobial, antioxidant ^(8,45)
<i>Pterocarpus</i>	<i>santalinus</i> Santalol, pterocarpol	Antioxidant, antimicrobial, anti-inflammatory ^(9,32)
<i>Marsdenia tenacissima</i>	C21 steroidal glycosides	Anti-inflammatory, immunomodulatory ⁽¹⁰⁾
<i>Tinospora cordifolia</i>	Tinosporaside, berberine	Immunomodulatory, anti-inflammatory, antimicrobial ^(11,33)
<i>Cissampelos pareira</i>	Isoquinoline alkaloids	Analgesic, anti-inflammatory, anticancer ^(12,36)
<i>Picrorrhiza kurroa</i>	Picoside I, kutkoside	Anti-inflammatory, antioxidant, hepatoprotective ^(13,14)

Pharmacological Actions

- **Patol:** Anti-oxidant, anti-inflammatory, antipyretic, wound healing⁽⁷⁾.
- **Shweta-Chandan:** Antibacterial against *Bacillus subtilis*, *Escherichia coli*, *Staphylococcus aureus*, *Pseudomonas aeruginosa*; antimicrobial against *S. aureus*, *E. coli*, *P. aeruginosa*, *B. subtilis*^(8,37).
- **Rakta-Chandan:** Anti-oxidant, anti-microbial against *E. coli*, *S. aureus*, *Pseudomonas*^(9,32).
- **Giloy:** Antibacterial against *E. coli*, *S. aureus*, *Klebsiella pneumoniae*, *Proteus vulgaris*, *Salmonella typhi*, *Shigella flexneri*, *Salmonella paratyphi*, *Salmonella typhimurium*, *Pseudomonas aeruginosa*, *Enterobacter aerogenes*, *Serratia marcescens*⁽¹¹⁾.
- **Patha:** Anti-cancerous, analgesic, anti-inflammatory^(12,36).
- **Kutaki:** Anti-inflammatory, antioxidant, hepatoprotective^(13,14).

Thus, all plants contain phytoconstituents showing antiseptic, anti-inflammatory, antimicrobial, and analgesic actions.

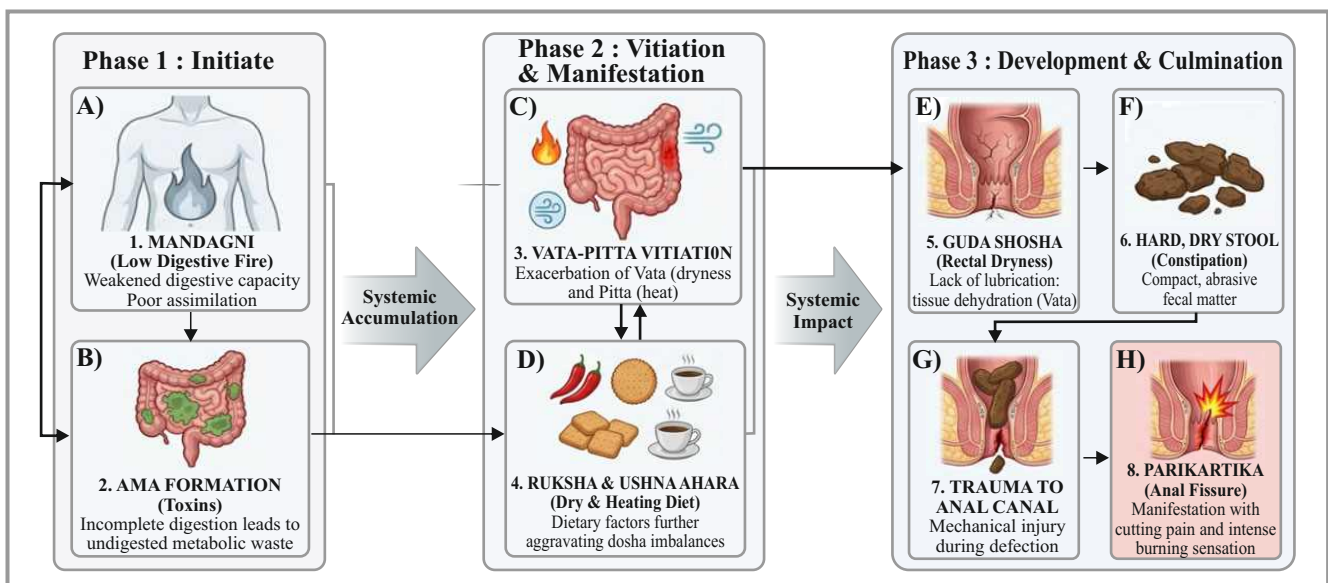
Figure 1 : Pathophysiological Flowchart of Parikartika (Anal Fissure) in Ayurvedic Medicine

Figure 1: Schematic representation of the Pathogenesis of Parikartika (Fissure-in-Ano) showing the sequential involvement of Mandagni, Ama, Vata-Pitta vitiation, and

Guda Shosha leading to the characteristic cutting pain and burning sensation.

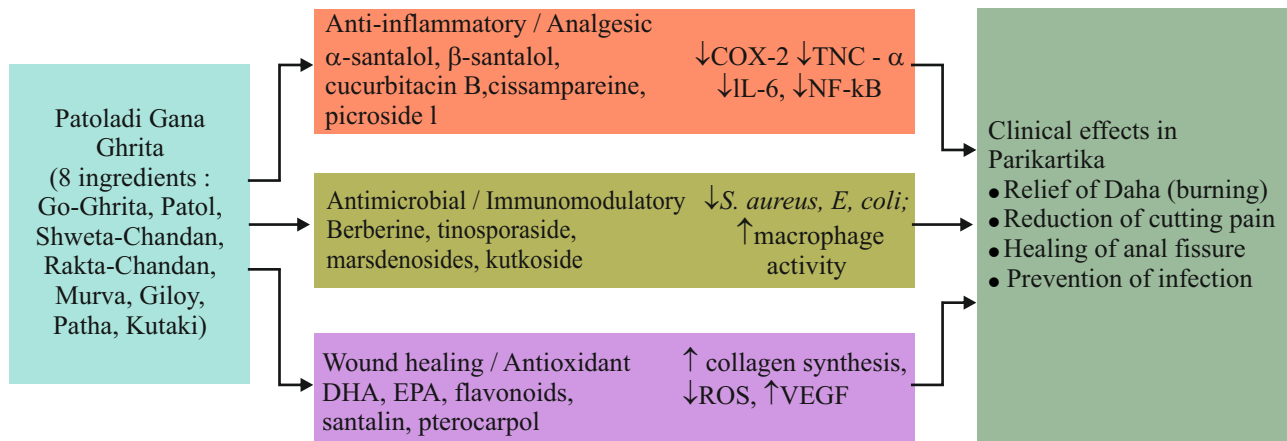


Figure 2: Mechanism of action of *Patoladi Gana Ghrita* in *Parikartika* (fissure-in-ano)

Ingredient (Botanical name)	Key Phytoconstituents	Primary Mechanism in Parikartika	Ayurvedic Action
Go-Ghrita (Cow ghee)	DHA, EPA, Vit A, E, K	Tissue regeneration, anti-inflammatory	Vranaropak, Dahashamak
Patol (<i>Trichosanthes dioica</i>)	Cucurbitacin B, trichosanthin, luteolin	Wound healing, antioxidant, antimicrobial	Vranashodhak, Vedanasthapak
Shweta-Chandan (<i>Santalum album</i>)	α-santalol, -β-santalol	Analgesic, anti-inflammatory, antimicrobial	Dahashamak, Kandughana
Rakta-Chandan (<i>Pterocarpus santalinus</i>)	Santalin, pterocarpol	Antioxidant, antimicrobial, anti-inflammatory	Shothahar, Dahashamak
Murva (<i>Marsdenia tenacissima</i>)	C21 steroidal glycosides	Anti-inflammatory, immunomodulatory	Kusthghna, Krumighna
Giloy (<i>Tinospora cordifolia</i>)	Tinosporaside, berberine	Immunomodulatory, anti-inflammatory, antimicrobial	Vedanashapak, Kusthhagna
Patha (<i>Cissampelos pareira</i>)	Isoquinoline alkaloids (ciss-ampareine)	Analgesic, anti-inflammatory, anticancer	Vranaropak, Kusthagna
Kutaki (<i>Picrorrhiza kurroa</i>)	Picroside I, kutkoside	Anti-inflammatory, antioxidant, hepatoprotective	Vranashodhak, Khedashoshk

Figure 3: Multimodal action of constituents of *Patoladi Gana Ghrita*

Discussion

In *Parikartika*, there is vitiation of *Pitta* and *Vata*⁽³⁾. The cardinal symptoms are excruciating cutting pain (*Vata*) and burning sensation (*Pitta*). *Patoladi Gana Ghrita* ingredients possess *Katu*, *Tikta*, *Madhura*, *Kashaya Rasa*; *Madhura* and *Tikta Vipaka*; and *Snigdha*, *Sheeta Gunas*. They have *Pitta* and *Vata shamak* properties as well as *Vrana Shodhana*, *Vrana Ropaka*, and *Kandughna* properties^(5,18,28). This combination not only heals the ulcer but also provides relief from burning and itching. It can be used in acute and chronic cases of fissure-in-ano, as well as a preventive medicine in early stages.

Previous work on *Patoladi Gana* has been reported for various conditions: simple myopia (*Patoladi Ghrita tarpana*), *Vatarakta* (*Patoladi kwath*), second-degree burns (*Patoladi Vikeshika*), *Parikartika* with *Patoladi Taila matra basti*, *Jwara* (conceptual), *Vicharchika* (eczema) with *Patoladi Kashaya*, and standardization of *Patoladi Kvatha*

Churna for skin diseases⁽³⁰⁾. Notably, no clinical study has evaluated *Patoladi Gana Ghrita* specifically for *Parikartika* (fissure-in-ano). However, an ongoing clinical trial on a related formulation indicates growing research interest in this area⁽⁴⁰⁾.

The analgesic and anti-inflammatory properties of *Patoladi Gana*, supported by the phytochemical and pharmacological evidence reviewed^(6,41-47), provide a strong rationale for its use in *Parikartika* [Figure 2 and Figure 3]. Unlike other remedies, it not only helps in healing but may give instant and long-lasting relief from *daha* (burning). Therefore, *Parikartika* can be effectively managed with *Patoladi Gana Ghrita*, and clinical evaluation is warranted.

Conclusion

Patoladi Gana Ghrita ingredients have significant anti-inflammatory, antiseptic, antimicrobial, and analgesic activity against many pathogens. The combination of multiple drugs with different modes of action provides a

multi-purpose solution in one *Ghrita*. Its *Dahashamana* (burning relief) property directly addresses the most troublesome symptom of *Parikartika*. Based on the classical rationale and phytopharmacological evidence, *Patoladi Gana Ghrita* should be evaluated clinically for efficacy in *Parikartika* (fissure-in-ano). This review provides the theoretical foundation for such studies.

Declarations

Conflict of interest: The authors declare no competing interests.

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Authors' contributions: Vd. M.K. Bachhav conceptualized and drafted the manuscript. Vd. A.R. Shedage performed literature review and critical revision. Both authors approved the final version.

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