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TRIKARSHIKA GHANAVATI IN THE MANAGEMENT OF VAATARAKTA WITH SPECIAL REFERENCE TO GOUT: A COMPREHENSIVE REVIEW

Vd. Divya Shriniwas Pogul*[1], Vd. Popat Vishvanath Jagtap[2]

[1]PG Scholar Department of Kayachikitsa, Shree Saptashrungi Ayurveda Mahavidyalay and Hospital, Nashik.

[2]Professor, Department of Kayachikitsa, Shree Saptashrungi Ayurveda Mahavidyalay and Hospital, Nashik.

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***Corresponding Author**

Vd. Divya Shriniwas Pogul

PG Scholar Department of Kayachikitsa, Shree Saptashrungi Ayurveda Mahavidyalay and Hospital, Nashik.

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ABSTRACT

Background: Vaatarakta is an Ayurvedic disorder caused by the vitiation of Vata Dosha and Rakta Dhatu and is clinically comparable to gout, a crystal-induced inflammatory arthritis associated with hyperuricemia. Trikarshika Ghanavati, a classical formulation containing Guduchi (Tinospora cordifolia), Shunthi (Zingiber officinale), and Dhanyaka (Coriandrum sativum), is indicated in Chakradatta for the management of Vaatarakta. Experimental studies suggest anti-inflammatory, antioxidant, immunomodulatory, and potential anti-hyperuricemic activities of its ingredients.[1-4] **Objective:** To review the classical Ayurvedic literature and available scientific evidence regarding the role of Trikarshika Ghanavati in the management of Vaatarakta with special reference to gout. **Materials and Methods**: A narrative review was conducted using classical Ayurvedic texts and published literature retrieved from PubMed, Scopus, Google Scholar, and the AYUSH Research Portal. **Results:** Classical Ayurvedic literature describes Trikarshika as a Pachana Yoga for Vaatarakta. Its ingredients—Guduchi, Shunthi, and Dhanyaka—exhibit anti-inflammatory, antioxidant, nephroprotective, and potential anti-hyperuricemic activities, supporting their role in improving Agni, reducing Ama, and managing gout. **Conclusion:** The available evidence

suggests that Trikarshika Ghanavati has considerable therapeutic potential in the management of Vaatarakta owing to its multidimensional pharmacological and Ayurvedic actions. Nevertheless, adequately powered randomized controlled trials are required to establish its efficacy and safety in patients with gout.

KEYWORDS: Ayurveda, Vaatarakta, Gout, Hyperuricemia, Trikarshika Ghanavati.

INTRODUCTION

Vaatarakta is a chronic inflammatory disorder described in Ayurveda, caused by the simultaneous vitiation of Vata Dosha and Rakta Dhatu, resulting in severe pain, swelling, burning sensation, tenderness, and restricted joint movement. It is considered an independent disease in the Ayurvedic classics and closely resembles gout in its clinical presentation.[1,2]

Gout is a metabolic inflammatory arthritis caused by persistent hyperuricemia and deposition of monosodium urate crystals within joints, leading to recurrent episodes of acute inflammation. Although conventional treatment with NSAIDs, colchicine, corticosteroids, and urate-lowering drugs is effective, prolonged therapy may produce adverse effects, creating a need for safer complementary interventions.[3,4]

Chakradatta recommends Trikarshika, a classical formulation comprising Guduchi (Tinospora cordifolia), Shunthi (Zingiber officinale), and Dhanyaka (Coriandrum sativum), as a Pachana Yoga for the management of Vaatarakta:

अमृतानागरधान्यककर्षत्रयेण पाचनं सिद्धम्। जयसत िरक्तं वातं ि◌ामं कुष्ठान्यशेर्◌ासण॥

Experimental studies have demonstrated anti-inflammatory, antioxidant, immunomodulatory, nephroprotective, and potential anti-hyperuricemic activities of these ingredients, providing a scientific rationale for evaluating Trikarshika Ghanavati in the management of Vaatarakta with special reference to gout.[2,5,6,7,8]

MATERIALS AND METHODS

A comprehensive narrative review was undertaken using classical Ayurvedic texts, including Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, Chakradatta, Bhavaprakasha Nighantu, and The Ayurvedic Pharmacopoeia of India. Contemporary scientific literature was identified from PubMed, Scopus, Google Scholar, AYUSH Research Portal, and peer-reviewed journals.

Disease Review

Ayurvedic Perspective of Vaatarakta

Nirukti: Vaatarakta is derived from Vata and Rakta, indicating a disorder caused by the simultaneous vitiation of Vata Dosha and Rakta Dhatu. Vitiated Rakta obstructs the normal movement of Vata (Margavarana), producing the characteristic features of the disease.[9,10]

Definition: According to Charaka Samhita, Vaatarakta is characterized by pain, swelling, redness, burning sensation, and stiffness of joints due to vitiated Vata and Rakta.[10]

Nidana: Major etiological factors include excessive intake of sour, salty, pungent, hot, and unctuous foods, alcohol, sedentary lifestyle, suppression of natural urges, and psychological stress.[10]

Samprapti: Nidana Sevana → Rakta Dushti → Vata Prakopa → Margavarana → Srotorodha → Localization in joints → Vaatarakta.[10]

Clinical Features: The disease presents with Shoola (pain), Shotha (swelling), Daha (burning), Raga (redness), Sparsha Asahyata (tenderness), and Stambha (stiffness). Chronic cases may result in joint deformity and functional disability.[10]

Types: Two major types are described—Uttana Vaatarakta (superficial involvement) and Gambhira Vaatarakta (deep tissue involvement with severe manifestations).[10]

Modern Review of Gout

Definition: Gout is a chronic inflammatory arthritis caused by deposition of monosodium urate (MSU) crystals secondary to persistent hyperuricemia, leading to recurrent acute arthritis and, if untreated, chronic joint damage and tophi.[11,12]

Epidemiology: Gout is the most common inflammatory arthritis, affecting 1–4% of adults worldwide. Its prevalence is increasing due to aging, obesity, metabolic syndrome, and chronic kidney disease.[13,14]

Etiology and Pathophysiology: Hyperuricemia results from increased uric acid production or decreased renal excretion. MSU crystal deposition activates the NLRP3 inflammasome, triggering IL-1β-mediated inflammation and acute gouty arthritis.[15,16]

Clinical Features: Patients typically present with sudden severe monoarthritis, most

commonly involving the first metatarsophalangeal joint (podagra), associated with pain, swelling, erythema, warmth, and tenderness. Recurrent attacks may progress to chronic tophaceous gout.[12,17]

Diagnosis: Diagnosis is based on clinical presentation, serum uric acid levels, imaging, and demonstration of needle-shaped, negatively birefringent MSU crystals in synovial fluid, the gold standard.[17,18]

Correlation between Vaatarakta and Gout

Vaatarakta is described in Ayurveda as a distinct disease caused by the simultaneous vitiation of Vata Dosha and Rakta Dhatu. According to Charaka Samhita, indulgence in Amla, Lavana, Katu, Kshara, Ushna Ahara, excessive alcohol intiactices lea/lifestyle, suppression of natural urge, ے. incompatible dietary and lifestyle practices lead to kta Rakta Dushti and Vata Prakopa he vitiated obstructs the normal movement of Vata (Margavarana), resulting in severe pain (Shoola), swelling (Shotha), burning sensation (Daha), redness (Raga), tenderness, and restricted joint movements.[19]

Gout, in modern medicine, is a crystal-induced inflammatory arthritis resulting from persistent hyperuricemia and deposition of monosodium urate (MSU) crystals in joints and periarticular tissues. These crystals activate macrophages and the NLRP3 inflammasome, leading tr release of inflammatory ↓ cytokines such as IL-1B, 1, and IL-6, which produce acute inflammation characterized by pain, erythema, warmth, swelling, and functional impairment.[20]

Although Ayurveda does not describe uric acid or monosodium urate crystals, the pathogenesis of Vaatarakta closely parallels the modern understanding of gout. The concepts of Mandagni, Ama, Rakta Dushti, and Margavarana of Vata can be interpreted as contributing to metabolic dysfunction, accumulation of inflammatory metabolites, impaired microcirculation, and crystal-induced inflammation. Therefore, Vaatarakta is widely accepted as the closest Ayurvedic correlate of gout.[21]

MANAGEMENT

Ayurvedic Management of Vaatarakta

Ayurvedic management aims to correct Vata-Rakta vitiation, improve Agni, digest Ama, and prevent recurrence through Nidana Parivarjana, Shodhana, Shamana, and Rasayana

therapies.[22]

Nidana Parivarjana: Avoid sour, salty, pungent, alkaline, and spicy foods, alcohol, meat, sedentary lifestyle, day sleep, night awakening, excessive exertion, and suppression of natural urges.[22]

Shodhana Chikitsa: Includes Snehana, Swedana, Virechana, Basti, and Raktamokshana. Charaka recommends Virechana followed by repeated Basti, while Sushruta emphasizes Raktamokshana in Rakta-predominant cases.[23-25]

Shamana Chikitsa: Common formulations include Guduchi preparations, Kaishora Guggulu, Amritadi Guggulu, Guduchyadi Kwatha, Mahamanjishtadi Kwatha, and Trikarshika Ghanavati (Guduchi, Shunthi, Dhanyaka), described in Chakradatta as a Pachana Yoga for Vaatarakta.[24]

Modern Management of Gout

Treatment aims to relieve acute inflammation, reduce serum uric acid, prevent recurrent attacks, and avoid joint damage. Acute gout is managed with NSAIDs, colchicine, or corticosteroids. Long-term urate-lowering therapy includes allopurinol (first-line), febuxostat, and probenecid, with a target serum urate level of <6 mg/dL.[26]

Review of Trikarshika Ghanavati

Trikarshika is a classical Ayurvedic formulation described by Chakrapanidatta in Chakradatta, Vatarakta Chikitsa, as a Pachana Yoga indicated for the management of Sarakta Vata (Vaatarakta), Sama Vata, and various types of Kushta.[1] The formulation consists of three drugs-Amrita (Guduchi), Nagara (Shunthi), and Dhanyaka-each taken in the quantity of one Karsha. Owing to the equal proportion of three ingredients, the formulation is known as Trikarshika.[27]

The reference from Chakradatta is as follows[27]

अमृतानागरधान्यककर्षत्रयेण पाचनं सिद्धम्। जयसत िरक्तं वातं िामं कुष्ठान्यशेर्ासण ॥

A formulation prepared amrita (Guduchi), Nagara (Shunthi), and Dhanyaka, each in one Karsha quantity, one Karsha quantity, acts as an effective Pachana Yoga. It alleviates Sarakta Vata (Vaatarakta), Sama Vata, and various forms of Kushta.[27]

Etymology

The word Trikarshika is derived from the Sanskrit words Tri, meaning three, and Karsha, a classical unit of weight. Since the formulation contains three ingredients in equal quantity (one Karsha each), it is designated as Trikarshika.[27]

Ayurvedic Rationale

The formulation is primarily intended for Deepana and Pachana, correcting Mandagni and digesting Ama, which are considered important pathogenic factors in Vaatarakta.[28]

Guduchi is described as Rasayana, Tridoshahara, Vataraktahara, and Rakta Prasadana, making it useful in chronic inflammatory disorders.[29]

Shunthi possesses Deepana, Amapachana, Vedanasthapana, and Shothahara properties, helping reduce pain, stiffness, and inflammation.[30]

Dhanyaka is described as Deepana, Pachana, Mutrala, and Tridoshahara, supporting digestion and facilitating elimination of metabolic waste products.[29]

Dravya	Rasa	Guna	Virya	Vipaka	Karma
Guduchi[3]	Tikta, Kashaya	Laghu, Snigdha	Ushna	Madhura	Tridoshahara, Rasayana, Deepana, Vataraktahara
Shunthi[4]	Katu	Laghu, Snigdha	Ushna	Madhura	Deepana, Pachana, Vata-Kapha Shamaka, Shothahara
Dhanyaka[3]	Kashaya, Tikta	Laghu, Snigdha	Sheeta	Madhura	Deepana, Pachana, Mutrala, Tridoshahara

Thus, Trikarshika simultaneously addresses Mandagni, Ama, Vata Prakopa, and Rakta Dushti, thereby interrupting the pathogenesis of Vaatarakta.[28-30]

Therapeutic Indications

According to Chakradatta, Trikarshika is indicated in:[27] Sarakta Vata (Vaatarakta)

Sama Vata Kushta

Clinical Significance

Although hyperuricemia and monosodium urate crystal deposition are not described in Ayurvedic classics, the therapeutic principles of Trikarshika correlate with the pathogenesis of gout. The formulation improves digestive and metabolic functions, digests Ama, pacifies Vata, purifies Rakta, and alleviates pain and inflammation. Experimental studies on Guduchi,

Shunthi, and Dhanyaka have demonstrated anti-inflammatory, antioxidant, immunomodulatory, nephroprotective, and potential ↓ anti-hyperuricemic activ. providing scientific support for its use in Vaatarakta.[31-33]

Mode of Action of Trikarshika Ghanavati in Vaatarakta (Gout)

Ayurvedic Perspective

According to Ayurveda, the pathogenesis (Samprapti) of Vaatarakta begins with Mandagni (impaired digestive fire), resulting in the formation of Ama, which is considered the primary pathogenic factor in many chronic inflammatory disorders. Ama vitiates Rakta Dhatu, causing Margavarana (obstruction) of the normal movement of Vata Dosha. Consequently, aggravated Vata produces severe Shoola (pain), Shotha (swelling), Daha (burning sensation), Raga (redness), and Stambha (stiffness) in the affected joints.[34-35]

Trikarshika Ghanavati, described in Chakradatta as a Pachana Yoga, is composed of Guduchi (Amrita), Shunthi (Nagara), and Dhanyaka, each possessing Deepana, Pachana, and Vata-Rakta Shamaka properties.[36] The formulation is therefore expected to act at multiple stages of disease pathogenesis:

Mandagni -Deepana (enhancement of Agni)

↓

Pachana (digestion of Ama)

↓

Rakta Prasadana (purification of Rakta)

↓

Vata Anulomana (restoration of normal Vata movement)

↓

Shothahara and Vedanasthapana (reduction of inflammation and pain)

↓

Clinical improvement in Vaatarakta

Thus, Trikarshika Ghanavati addresses the disease at its root by correcting impaired digestion, eliminating Ama, pacifying Vata, and restoring the normal physiological functions of Rakta.[34-36]

Modern Pharmacological Perspective

The pharmacological properties of Trikarshika Ghanavati constituent provide a plausible

scientific basis for its use in gout.

Drug	Major Phytoconstituents	Major Pharmacological Properties
Guduchi Latin name-Tinospora cordifolia Family-Menispermaceae	Tinosporaside, Anti-inflammatory, Cordifolioside A, Antioxidant, Magnoflorine, Berberine, Polysaccharides[34-37]	Immunomodulatory, Columbin, Alkaloids, Hepatoprotective, Diterpenoid lactones, Nephroprotective, Anti-arthritic[34-38]
Shunti Latin name-Zingiber officinale Family-Zingiberaceae	Gingerols, Shogaols, Zingerone, Gingerenone, Volatile oils, Flavonoids[39-40]	Anti-inflammatory, Analgesic, Antioxidant, Digestive stimulant, Anti-arthritic, Probable xanthine oxidase inhibition[39-41]
Dhanyak Latin name-Coriandrum sativum Family-Umbelliferae	Linalool, Geraniol, Quercetin, Rutin, Apigenin, Coumarins, Flavonoids[42-43]	Anti-inflammatory, Antioxidant, Mutrala, Hepatoprotective, Nephroprotectiv Digestive stimulant[42-43]

1. Inhibition of Xanthine Oxidase

Xanthine oxidase is the key enzyme responsible for the conversion of hypoxanthine and xanthine into uric acid. Inhibition of this enzyme decreases uric acid production and forms the basis of conventional therapy with xanthine oxidase inhibitors.

Experimental studies suggest that phytoconstituents present in Guduchi and Shunthi, including alkaloids, diterpenoid lactones, gingerols, and shogaols, exhibit xanthine oxidase inhibitory activity. These findings suggest that the formulation contribute to lowering serum uric acid by partially inhibiting xanthine oxidase.[44-46]

2. Improvement of Renal Uric Acid Excretion

Hyperuricemia commonly results from impaired renal urate excretion. Dhanyaka possesses Mutrala (diuretic) activity, while Guduchi has demonstrated nephroprotective effects in experimental studies. These actions help preserve renal tubular function and facilitate uric acid excretion, thereby contributing to improved urate homeostasis.[45-47]

3. Suppression of Inflammatory Cytokines

Deposition of monosodium urate (MSU) crystals activates the NLRP3 inflammasome, leading to increased production of pro-inflammatory cytokines such as interleukin-1ß (IL-1ß), tumour necrosis factor-a (TNF-a), interleukin-6 (IL-6), and interleukin-18 (IL-18), which mediate acute gouty inflammation.

Experimental studies have shown that Guduchi, Shunthi, and Dhanyaka possess anti-inflammatory properties by suppressing inflammatory mediators and reducing cyclooxygenase activity, nitric oxide synthesis, and cytokine production. Consequently, Trikarshika Ghanavati alleviate pain, swelling, erythema, and joint tenderness associated with acute gout.[44-46]

4. Antioxidant Activity

Oxidative stress plays an important role in gout-related tissue injury. During purine metabolism, xanthine oxidase generates reactive oxygen species (ROS), resulting in oxidative damage to synovial tissues and cartilage.

Guduchi contains tinosporaside, cordifolioside, and diterpenoid lactones, Shunthi contains gingerols and shogaols, while Dhanyaka is rich in polyphenols and flavonoids. These bioactive compounds possess potent antioxidant properties, neutralize free radicals, and reduce oxidative stress, thereby protecting joint tissues from inflammatory damage.[44-47]

5. Immunomodulatory Activity

Guduchi is recognized as an important Rasayana drug with well-documented immunomodulatory activity. Experimental studies have demonstrated that Guduchi regulates macrophage activation, cytokine production, and adaptive immune responses without causing excessive immunosuppression. Such immunomodulatory effects may help attenuate the exaggerated inflammatory response triggered by monosodium urate crystals.[44]

RESULTS

The reviewed classical Ayurvedic literature identifies Trikarshika as a Pachana Yoga indicated for the management of Vaatarakta. Modern pharmacological evidence suggests that its ingredients—Guduchi (Tinospora cordifolia), Shunthi (Zingiber officinale), and Dhanyaka (Coriandrum sativum)—possess anti-inflammatory, antioxidant, immunomodulatory, nephroprotective, and potential anti-hyperuricemic properties. These actions may help reduce joint inflammation, improve digestion (Agni), eliminate Ama, and support the management of hyperuricemia associated with gout.

DISCUSSION

Vaatarakta and gout share several clinical features, including severe joint pain, swelling, redness, tenderness, and recurrent inflammatory episodes.

Ayurveda attributes the disease to the vitiation of Vata Dosha and Rakta Dhatu with the involvement of Ama, whereas modern medicine explains gout as a consequence of monosodium urate crystal deposition due to hyperuricemia.

Trikarshika Ghanavati acts as a Deepana-Pachana formulation, correcting Agnimandya and reducing Ama. Guduchi provides anti-inflammatory and immunomodulatory effects, Shunthi offers analgesic and antioxidant activity, while Dhanyaka supports digestion and exhibits mild diuretic action. The combined pharmacological properties of these ingredients provide a scientific rationale for the use of Trikarshika Ghanavati as an adjunctive Ayurvedic intervention in the management of Vaatarakta. However, well-designed randomized controlled clinical trials are required to establish its efficacy and safety.

CONCLUSION

Vaatarakta, which closely resembles gout in its clinical presentation, is a chronic and debilitating disorder resulting from the vitiation of Vata Dosha and Rakta Dhatu. Trikarshika Ghanavati, a classical Ayurvedic formulation, has been traditionally indicated for the management of Vaatarakta due to its Deepana and Pachana properties, which help improve Agni, digest Ama, and restore Doshic balance.

The review of classical Ayurvedic literature along with available modern pharmacological evidence indicates that the ingredients of Trikarshika Ghanavati—Guduchi (Tinospora cordifolia), Shunthi (Zingiber officinale), and Dhanyaka (Coriandrum sativum)—possess anti-inflammatory, antioxidant, immunomodulatory, nephroprotective, and potential anti-hyperuricemic activities. These pharmacological actions may help reduce inflammation, relieve pain and swelling, improve joint function, and support the regulation of serum uric acid levels, thereby addressing both the symptoms and underlying pathophysiology of gout.

Although the available evidence highlights the therapeutic potential of Trikarshika Ghanavati, most findings are derived from classical references and preclinical or pharmacological studies, with limited direct clinical evidence in gout patients. Therefore, well-designed randomized controlled trials with adequate sample size and long-term follow-up are necessary to validate its efficacy, safety, and mechanism of action. Such evidence will strengthen its role as an effective and evidence-based Ayurvedic intervention in the management of Vaatarakta with special reference to gout.

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