



Exploring the Role of *Amavatahara* Drugs in the Management of Rheumatoid Arthritis

C.K. Jayanthi¹, K. Geethukumari²

¹Associate Professor, Department of Dravyaguna vigyan, Mannam Ayurveda Co-operative edical College, Pandalam.

²PG scholar, Department of Dravyaguna vigyan, Mannam Ayurveda Co-operative Medical, College, Pandalam.

Corresponding Author: C.K. Jayanthi

ABSTRACT: Ayurveda offers hope for the suffering humanity in today's world, where a complete treatment solution for the most common chronic inflammatory joint disease, *Amavata* (Rheumatoid Arthritis), remains elusive. This condition causes joint swelling, pain, and stiffness, and, if left untreated, can lead to debility, joint deformities, and crippling. Although modern medical treatments have significantly improved disease management, a complete cure is yet to be achieved. As per, ayurvedic literatures *Amavata*, a prevalent clinical condition manifested due to the pathological effect of *Ama*. As per the present status, *Amavata* has become increasingly prevalent, affecting individuals across all age groups, with its severity tending to rise with advancing age. The term "*Amavata*" is derived from two Sanskrit words: "*Ama*," which refers to a toxic accumulation within the body due to various imbalances, and "*Vata*," the *dosha* that governs movement and function. When *Ama* combines with *Vata* and localizes in the *Shleshmasthanas* (the joint spaces), it results in a painful condition. *Amavata* closely resembles its characters with Rheumatoid Arthritis, sharing similar clinical features such as pain, swelling, stiffness, fever, general debility, and fatigue.

Many rheumatological disorders remain chronic conditions, and despite significant therapeutic advances, a definitive cure is still not available for several of them. *Amavata* presents a clinical challenge due to its chronic course and potential for complications, which can contribute to substantial morbidity if not effectively managed. Conventional treatments, including DMARDs and biologics, play an important role in controlling inflammation and slowing disease progression; however, they may be associated with adverse effects in some patients, prompting interest in complementary therapeutic approaches. In Ayurveda, the therapeutic approaches such as *Langhana*, *Swedana*, *Tikta-Katu* formulations, *Deepana*, *Virechana*, and *Basti* are recommended for managing the disease. There is an increasing focus on exploring complementary and alternative treatment options, such as traditional medicine, medicinal plants, and their bioactive compounds, which demonstrate strong anti-inflammatory properties with fewer harmful effects on human health. This review highlights promising medicinal plants and natural compounds with potent anti-inflammatory activities in the context of arthritis treatment.

KEYWORDS: Amavata, Deepana, Langhana, Swedana, Tikta-Katu, Virechana, Shleshmasthanas.

INTRODUCTION

Alfred Garrod, an English physician in the 19th century, played a pivotal role in advancing the study of rheumatoid arthritis (RA). He was the first to differentiate gout from other arthritic conditions, discovering an excess of uric acid in the blood of gout patients but not in those with other forms of arthritis. In 1859, Garrod published his Treatise on the Nature of Gout and Rheumatic Gout, in which he described these findings. This work not only distinguished arthritis from gout but also identified RA as a separate condition, which he termed "Rheumatic Gout." Garrod's discoveries laid the foundation for further research into the aetiology of RA, suggesting that, since this condition could be differentiated from both gout and other types of arthritis, it must have a distinct underlying cause.¹

The onset of Rheumatoid Arthritis (RA) most commonly occurs in adulthood, with peak incidence generally reported between the third and sixth decades of life, although it can develop at any age. Women are affected approximately two to three times more often than men. Current evidence indicates that both genetic predisposition and environmental factors contribute significantly to the risk of developing RA.

Rheumatoid arthritis (RA) involves complex immune and inflammatory pathways mediated by cytokines and eicosanoids. Key pro-inflammatory mediators such as TNF- α , IL-1 β , IL-6, and IL-17 activate immune cells and synovial fibroblasts, leading to chronic inflammation and joint destruction. The COX and LOX pathways metabolize arachidonic acid to produce prostaglandins and leukotrienes, which further amplify pain, swelling, and tissue damage. Matrix metalloproteinases (MMPs) degrade cartilage, while RANKL activation promotes osteoclast differentiation and bone erosion. Collectively, these mediators sustain the inflammatory cycle characteristic of Rheumatoid Arthritis². In the context of RA, the gene HAS:26191 is associated with the hsa05323 pathway, which reflects the broader molecular mechanisms underlying rheumatoid arthritis pathogenesis.

Amavata is the most common endogenous disease which is produced due to frequently formation of *Ama* in the human body. It is the commonest among chronic inflammatory joint disease in which joints becomes swollen, painful & stiff. Apart from this patient would experience severe pain resembling the pain of a scorpion sting. Due to its chronicity & complications it has taken the foremost place among the joint disease. It continues to pose challenge to the physician due to severe morbidity & crippling nature. *Amavata* described in Ayurvedic classics shows many clinical similarity to that of Rheumatoid Arthritis.

Amavata was first described as a distinct disease entity by *Madhavakara* in 900 AD. He dedicated an entire chapter (the 25th) of his renowned work, *Madhava Nidanam*, to a detailed exploration of *Amavata*, systematically addressing its etiopathogenesis, as well as its signs, symptoms, complications, and prognosis.

In *Haritha samhitha Tritheeya sthana*, chapter 22, *acharya* explained about different types of *Amavata* in other way compared to other authors.

ETYMOLOGY

'*Amena sahita vata Amavata*'. *Ama* circulates in the whole body propelled by the vitiated *vata doshas* producing block in the body channels that stations itself in the sandhi giving rise to *Amavata*³.

The combinations of 'Ama' and 'vata' form *Amavata*. It shows the predominance of *Ama* & *vata* in the *samprapti* of *Amavata*.

NIDANA

According to *Madhava nidana*,

- *Viruddhahara*
- *Viruddhacheshhta*
- *Mandagni*

- *Nishchalata*
- *Snigdham Bhojanothara vyayamam*

LAKSHANAS

Madhavakara,⁴ *Bhava Mishra*, & other have described the *rupas* of *Amavata* clearly. They can be classified under following headings.

Samanya Lakshana: (General /Associated Features)

1. *Angamarda*
2. *Aruchi*
3. *Trishna*
4. *Alasya*
5. *Gaurava*
6. *Jwara*
7. *Apaka*
8. *Shoonata anganam.*

Pratyatma Lakshana: (Cardinal sign & symptoms)

1. *Sandhishoola*
2. *Sandhishotha*
3. *Stabdhata*
4. *Sparsha asahyata*

CLASSIFICATION

i) According to *Dosha*: In *Madhava Nidana*, *Acharya Madhavakara* has mentioned

Eka Doshaja

- 1) *Vataja*
- 2) *Pittaja*
- 3) *Kaphaja*

Dwi Doshaja

- 1) *Vataja-pittaja*
- 2) *Pitta-kaphaja*
- 3) *Kapha-vataja*

Tridoshaja

In the *Tridoshaja* types of *Amavata*, symptoms of all three *Doshas* are found.

ii) *Acharya Harita*⁵ has classified *Amavata* in **four** type on the basis of clinical manifestation.

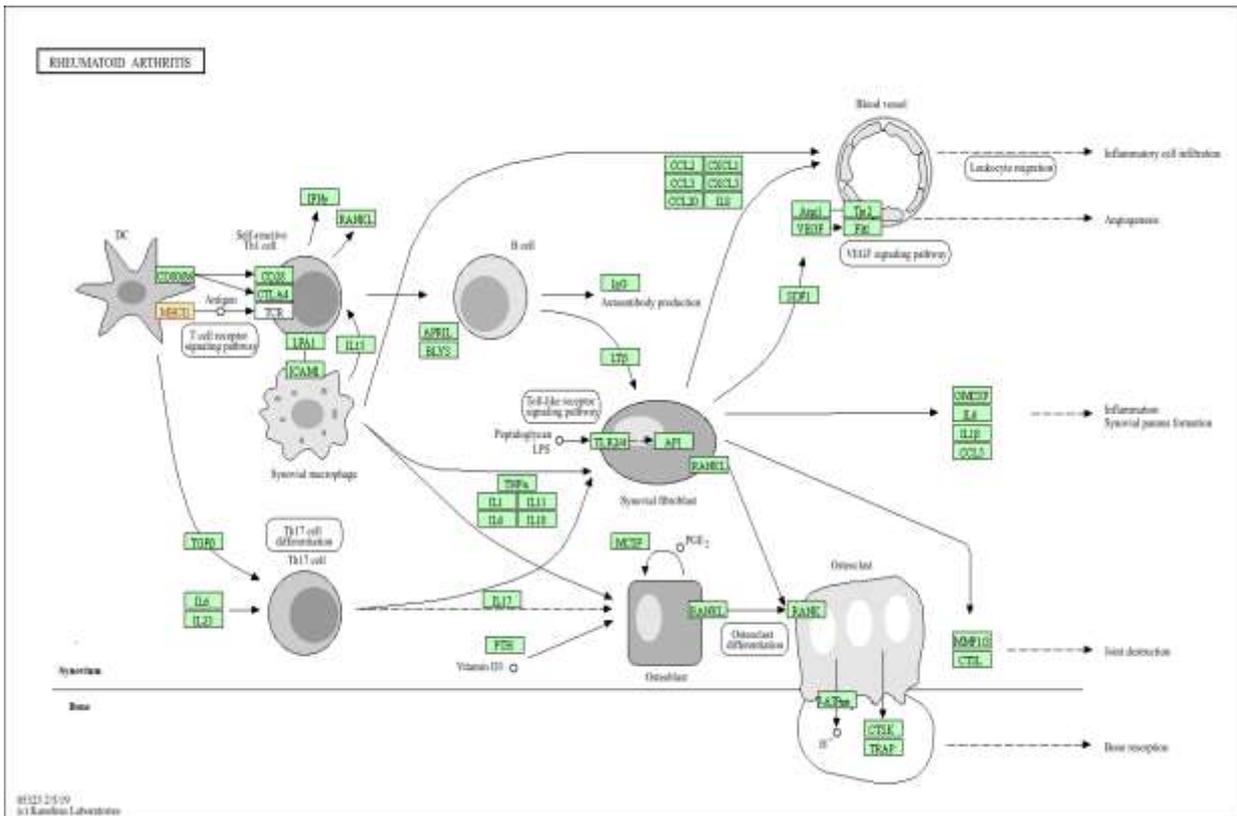
- *Vishtambhi*
- *Gulmi*
- *Snehi*
- *Sarvangi*

Irregular dietary habits and activities such as lack of physical activities or exercising immediately after *snigdha bhojana* —can lead to indigestion and the formation of *Amarasa*. This *Amarasa* is propelled by vitiated *Vata*, allowing it to quickly spread to various *Sleshma-sthana* and enter the *Dhamanis*. During this process, the *Amarasa* undergoes *Vidagdha-avastha*, affecting the *Rasadi Dhātu* and causing further vitiation. Ultimately, this results in *Srotorodha* (obstruction of channels), producing classical symptoms such as weakness (*Daurbalya*) and a feeling of heaviness in the heart (*Hṛdayasya Gauravam*). Over time, these pathological

changes contribute to the manifestation of *Amavata* (Rheumatoid Arthritis), characterized by stiffness and rigidity throughout the body⁶.

Although the exact aetiology of rheumatoid arthritis (RA) is not fully understood, contemporary research highlights the involvement of genetic, immunological, and environmental factors. Ayurvedic perspectives describe aetiopathogenic mechanisms based on concepts such as Ama and Vata imbalance, which provide an alternative framework for understanding disease manifestation. Epidemiological evidence indicates that RA most commonly begins between the ages of 30 and 50.

Key Signaling Pathways Driving RA Pathogenesis



Picture1: shows Key Molecular Pathways in Rheumatoid Arthritis

This pathway map illustrates the major immunological and cellular mechanisms involved in the pathogenesis of Rheumatoid Arthritis (RA). It highlights interactions between dendritic cells, T cells, B cells, synovial macrophages, and fibroblasts that drive chronic inflammation. Key cytokines: includes TNF- α , IL-1 β , IL-6, IL-17, and GM-CSF, stimulate synovial proliferation, pannus formation, and infiltration of inflammatory cells. B-cell-derived autoantibodies, along with TLR signalling, further amplify immune activation. RANKL-mediated osteoclast differentiation leads to bone erosion, while MMPs and cathepsins contribute to cartilage degradation. Together, these interconnected pathways summarize the hsa05323 (Rheumatoid Arthritis) molecular network responsible for joint inflammation and destruction⁷.

MATERIALS AND METHODS

A number of research articles and reports on the anti-inflammatory activity of various medicinal plants and phytochemicals against musculoskeletal disorders including arthritis attracted us to compile an integrative review. In the present review, a detailed examination of medicinal plants, and bioactive compounds including

their pharmacological activities with the idea of investigating the potent medicinal plants for arthritis has been performed. For this review, literary materials were collected from reputed Ayurvedic texts, primarily *Madhava Nidana* and *Haritha Samhita* along with related articles from PubMed, Google scholar and also from available commentaries.

Ayurvedic Medicinal Plants with Anti- Arthritic Property.

Table :1 Shows Name of The Herbs with *Rasa-Virya-Vipaka* And Pharmacological Action

Name of the Drugs	Botanical name	RASA	VIRYA	VIPAKA	Chemical constitutes	Pharmacological Action
<i>Guggulu</i>	<i>Commiphora wightii</i> (Arn.) Bhandari	<i>Tikta, Kashaya, Katu</i>	<i>Ushna</i>	<i>Katu</i>	Diterpenoids, triterpenoids, quercetin, guggultetrols, lignans, sugars, amino acids	Anti-Inflammatory, Antioxidant and Analgesic
<i>Eranda</i>	<i>Ricinus communis</i> Linn.	<i>Tikta, Katu</i>	<i>Ushna</i>	<i>Madhura</i>	alkaloids, cyanogenic glycosides, flavonoids, terpenoids, tannin, carbohydrates, saponin, gallic acid, quercetin	Anti-inflammatory activity, Analgesic activity
<i>Pippali</i>	<i>Piper longum</i> Linn.	<i>Katu, Tikta, Madhura</i>	<i>Anushana</i>	<i>Madhura</i>	Piperlongumine, piperlongumine, Alkaloids, Flavonoids	Antibacterial, anti-inflammatory, immunostimulatory, antispasmodic, Antipyretic
<i>Shunti</i>	<i>Zingiber officinale</i> Roscoe	<i>Katu</i>	<i>Ushna</i>	<i>Madhura</i>	Essential oils, terpenes, polysaccharides, lipids, organic acids, Phenolic compounds	Antioxidant, Anti-inflammatory, Analgesic
<i>Rasona</i>	<i>Allium sativum</i> Linn.	<i>Katu, Madhura</i>	<i>Ushna</i>	<i>Katu</i>	Alkaloids, Flavonoids, saponins,	Antioxidant, Anti-

					glycosides	inflammatory, Antimicrobial
<i>Guduchi</i>	<i>Tinospora cordifolia</i> (Willd.) Miers	<i>Kashaya, Katu, Tiktha</i>	<i>Ushna</i>	<i>Madhura</i>	Alkaloids: Tinosporin, Phenols, Flavonoids, Saponins, Cardiac glycosides, Carbohydrates, Proteins.	Immunomodulatory, Antioxidant, antipyretic
<i>Haridra</i>	<i>Curcuma longa</i> Linn.	<i>Katu, Tikta</i>	<i>Ushna</i>	<i>Katu</i>	Alkaloids, glycosides, carbohydrates, steroids, phenolic compounds, tannins, and saponins	anti-oxidant, anti-inflammatory
<i>Bhallathaka</i>	<i>Semecarpus anacardium</i> Linn. f.	<i>Kashaya</i>	<i>Ushna</i>	<i>Madhura</i>	biflavonoids, phenolic compounds, bhilawanols	Anti-oxidant, Anti-inflammatory

RESULT AND DISCUSSION

The main cause of Amavata is *Mandagni* (weak digestive fire). Therefore, the primary line of treatment focuses on correcting *Agni Dushti* (digestive impairment). Herbs possessing *Tikta* (bitter) and *Katu* (pungent) rasa aid in *Amapachana* (elimination of toxins) and *Agnideepana* (enhancing digestive fire). *Ushna Virya* (hot potency) drugs help to pacify *Kapha* and *Vata doshas*, stimulate digestion, promote metabolism, and clears body channels (*srotas*). Additionally, herbs with *Katu Vipaka* (pungent post-digestive effect) support detoxification and help control inflammation. Each of these herbs works synergistically to correct *dosha* imbalances, address the root causes of inflammation and pain, and promote joint health in a holistic and individualized manner⁸.

Each of these herbs demonstrates significant anti-inflammatory, immunomodulatory, antioxidant, and analgesic properties^{9,10,11,12,13,14} with potential disease-modifying effects in the management of arthritis, as evidenced by various experimental and clinical studies. They act through multiple molecular pathways involved in inflammation, joint degradation, and immune dysregulation. The presence of diverse bioactive principles such as alkaloids, flavonoids, saponins, glycosides, terpenoids, polysaccharides, lipids, organic acids, and phenolic compounds contributes collectively to their therapeutic efficacy in *Amavata* (rheumatoid arthritis). These constituents help relieve stiffness and pain, protect joint tissues from oxidative stress, and reduce inflammation and subsequent tissue damage.

Bioactive compounds including tinosporoside, piperlongumine, 6-shogaol, ricinoleic acid, allicin, sulphur compounds, and anacardic^{15,16} acid demonstrate potent anti-inflammatory, antioxidant, and immunomodulatory effects. They inhibit key pro-inflammatory mediators such as TNF- α , IL-1 β , and IL-6,

thereby alleviating joint inflammation and minimizing pain, swelling, and cartilage degeneration. Their strong antioxidant activity neutralizes reactive oxygen species (ROS), safeguarding joint structures from oxidative injury and supporting immune homeostasis. Furthermore, guggulsterone and guggulipid effectively suppress inflammatory cascades and oxidative stress, providing additional protection against arthritis-induced cartilage damage. 6-shogaol from *Shunti* (*Zingiber officinale*) induces apoptosis in activated inflammatory cells and decreases matrix metalloproteinase (MMP) synthesis, thereby preserving cartilage integrity and preventing joint degeneration in rheumatoid arthritis.

CONCLUSION

Amavata, a condition analogous to Rheumatoid Arthritis, remains one of the most challenging chronic inflammatory joint disorders to manage in both Ayurveda and modern medicine. Ayurveda provides a holistic framework that explains the condition in terms of Ama formation and Vata vitiation, addressed through modalities such as Langhana, Swedana, Deepana–Pachana, Virechana, and Basti, along with the use of Amavatahara dravyas.

Herbal drugs like Guggulu, Guduchi, Pippali, Shunti, Rasona, Haridra, Eranda, and Bhallataka exhibit anti-inflammatory, antioxidant, immunomodulatory, and analgesic properties. Their bioactive compounds including guggulsterone, tinosporoside, curcumin, piperlongumine, 6-shogaol, and allicin interact with multiple molecular pathways to modulate inflammatory responses, reduce oxidative stress, and support joint health.

Collectively, available evidence suggests that Amavatahara drugs may offer symptomatic relief and possess potential therapeutic benefits, however, further well-designed clinical and pharmacological studies are required to establish their disease-modifying properties and clarify their role in managing inflammatory and autoimmune components of rheumatoid arthritis. Future research integrating classical Ayurvedic concepts with modern scientific evaluation may help develop safer, more effective, and holistic strategies for managing Amavata and related chronic inflammatory disorders.

REFERENCES

1. Karponis D. Rheumatoid arthritis: the journey in pursuit of a cure. *Rheumatol Adv Pract.* 2017 Oct 17;1(1): rlx008. doi: 10.1093/rap/rlx008. PMID: 31431946; PMCID: PMC6649941.
2. Tripathi KD. *Essentials of Medical Pharmacology*. 8th ed. New Delhi: Jaypee Brothers Medical Publishers; 2018. p. 450-455.
3. Madhvakara S, Madhavanidanam. In: Yadunandana Upadhyaya, editor, chapter 25,2 – 4th sloka. India: Chaukhamba Sanskrit Sansthan; 1985. p.460.
4. Madhvakara S, Madhavanidanam. In: Yadunandana Upadhyaya, chapter 25, 2 – 5th sloka. India: Chaukhamba Sanskrit Sansthan; 1985. p.461.
5. Pandey VJ. *Haritha samhitha*. 1st ed. Varanasi: Chaukhambha Bharati academy; 2010. p. 375.
6. Madhavakara. *Madhava Nidanam (Roga Viniscaya)*. Translated by Murthy KRS. Varanasi: Chaukhambha Orientalia; 2011. Reprint edition. ISBN: 978-81-7637-141-4. p.95
7. Kanehisa M, Goto S. KEGG: Kyoto Encyclopedia of Genes and Genomes. Rheumatoid arthritis (hsa05323) pathway. Kyoto: Kanehisa Laboratories; [cited 2025 Nov 25]. Available from: <https://www.kegg.jp/pathway/hsa05323>.
8. Sharma P, Dash B. *Charaka Samhita: Text with English Translation and Critical Exposition*. 1st ed. Varanasi: Chaukhambha Sanskrit Series; 2018. p. 85-90.

9. Sarup P, Bala S, Kamboj S. Pharmacology and Phytochemistry of Oleo-Gum Resin of *Commiphora wightii* (Guggulu). *Scientifica* (Cairo). 2015; 2015:138039. doi: 10.1155/2015/138039. Epub 2015 Oct 26. PMID: 26587309; PMCID: PMC4637499.
10. Bingi A, Suma V. A review on Eranda (*Ricinus communis* Linn.) a popular herbal drug with multiple benefits. *JETIR*. 2024 Jun;11(6). (ISSN 2349-5162)
11. Gandhi Y, Kumar R, Grewal J, Rawat H, Mishra SK, Kumar V, Shakya SK, Jain V, Babu G, Sharma P, Singh A, Singh R, Acharya R. Advances in anti-inflammatory medicinal plants and phytochemicals in the management of arthritis: A comprehensive review. *Volume 1*, 2022 Oct;100085.
12. Vieira C, Evangelista S, Cirillo R, Lippi A, Maggi CA, Manzini S. Effect of ricinoleic acid in acute and subchronic experimental models of inflammation. *Mediators Inflamm*. 2000;9(5):223-8. doi: 10.1080/09629350020025737. PMID: 11200362; PMCID: PMC1781768.
13. Kaur B, Kumar N, Patel MK, Chopra K, Saxena S. Validation of traditional claims of anti-arthritis efficacy of trans-Himalayan snow mountain garlic (*Allium ampeloprasum* L.) extract using adjuvant-induced arthritis rat model: A comparative evaluation with normal garlic (*Allium sativum* L.) and dexamethasone. *J Ethnopharmacol*. 2023 Mar 1; 303:11593. doi: 10.1016/j.jep.2022.11593
14. Szymczak J, Grygiel-Górniak B, Cielecka-Piontek J. Zingiber officinale Roscoe: The antiarthritic potential of a popular spice—preclinical and clinical evidence. *Nutrients*. 2024;16(5):741. doi: 10.3390/nu16050741
15. Mhaske N, Rasane V, Kedar P, Kakade M, Dahiphale P, Ahire S, Mhaske N. A systematic review: Anti-inflammatory and anti-carcinogenic activities of *Semecarpus anacardium* Linn. *Afr J Bio Sci*. 2024;6(14): 2265-10. ISSN: 2663-2187
16. Sannegowda KM, Venkatesha SH, Moudgil KD. *Tinospora cordifolia* inhibits autoimmune arthritis by regulating key immune mediators of inflammation and bone damage. *Int J Immunopathol Pharmacol*. 2015 Dec;28(4):521-31. doi:10.1177/0394632015608248. Epub 2015 Oct 14. PMID: 26467057; PMCID: PMC8082752.