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The scientific evaluation of *Rasnadashamula Kwatha* in the management of *Amavata* w.s.r. to Rheumatoid arthritis: A Review Article

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ABSTRACT

Background: Rheumatoid arthritis (RA) is the most common inflammatory arthritis in women and hence an important cause of potentially preventable disability. Many of the clinical features and management strategies in RA are relevant across the spectrum of inflammatory joint disease. The typical clinical phenotype of RA is a Symmetrical, deforming, small and large joint polyarthritis, often associated with systemic disturbance and extra-articular disease. The clinical course is usually life-long, with intermittent exacerbations and remissions and highly variable severity. In *Ayurveda*, '*Amavata*' was mentioned for the first time by *Acharya Madhavakara* has a special disease entity in which both '*Ama*' as well as '*Vata*' play a predominant role in the pathogenesis of this disease.

Aim: The Article is written with the aim to analyze the mode of action of the ingredients of *Rasnadashamula Kwatha* and explore its importance in relieving the symptoms of *Amavata* w.s.r. to Rheumatoid arthritis.

Methodology: *Rasnadashamula Kwatha* is described in *Amavata Rogadhikara* in *Chakradatta*. Various peer reviewed articles, *Ayurvedic* classical textbooks, Modern Rheumatological textbooks as well as the online databases were analyzed under the relevant key words in understanding the importance of the above-mentioned formulation in treating the symptoms of *Amavata* w.s.r. to Rheumatoid arthritis. **Conclusion:** It can be concluded through literary review that *Rasnadashamula Kwatha* is efficient in relieving the symptoms of *Amavata* but to establish the final conclusion clinical trial of this drug should be conducted so that this drug can be used for therapeutic purposes in general patients of *Amavata*.

Key words: *Amavata*, *Rasnadashamula Kwatha*.

INTRODUCTION

Rheumatoid arthritis (RA) is a chronic inflammatory disease of unknown etiology marked by symmetric, peripheral polyarthritis. It is the most common form of chronic inflammatory arthritis and often leads to joint injury and disability.^[1] Because it is a systemic disease, RA may lead to the distinct manifestation of

other systems with the symptoms including fatigue, underlying skin lesions, lung involvement, pericarditis, peripheral neuropathy, vasculitis, and hematologic abnormalities.^[2] The science of RA has made great strides in identifying disease-related genes and in advancing the molecular mechanisms of infectious diseases. The limited significance of these different procedures is highlighted by the perceived benefits of a new class of highly targeted therapies. Apart from these benefits, incomplete understanding of the early stages of RA is always a major obstacle to its treatment and prevention.^[3]

The condition of RA increases between 25 and 55 years of age, after which it becomes flat until it is 75 years old and then decreases. Symptoms of RA are usually caused by inflammation of the joints, muscles, and bursae. Patients often complain of joint stiffness in the morning lasting for more than 1 hour and gradually decrease of stiffness after some physical

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activity. The first affected joints are usually small joints. The first pattern of joint involvement may be monoarticular, oligoarticular (4 joints), or polyarticular (> 5 joints), usually in parallel distribution.^[4]

Acharya Gananatha Sena (1943) has coined the term *Rasavata* for *Amavata*. The clinician of modern era Prof. Yadunandan Upadhyaya (1953) and other eminent scholars has equated the *Amavata* with rheumatoid arthritis. Thus in short, it can be concluded that critical analysis of the medical importance of *Ama* begins from *Samhita* period, thereafter *Madhava Kara* has established it as an independent disease after having understood the specialty of the disease.^[5] Acharya Chakra Datta later on described the line of treatment^[6] and *Bhava Prakasha* elaborated it further, which can be seen fully developed in *Bhaisajya Ratnavali*.

Comparison between *Amavata* and Rheumatoid arthritis

Most of the symptoms of *Amavata* are directly correlated with Rheumatoid Arthritis which are as follows: ^[7, 8]

- *Sandhishoola* - Joint pain.
- *Sandhishotha* - Swelling of joints.
- *Sparshasahyata* - Tenderness at the joints.
- *Gatra Stabdhatta* - Stiffness of joints and whole body.
- *Raga* - Erythema of the joints.
- *Jwara* - Low grade fever.

Contents of *Rasnodashamula Kwatha*^[9]

Table 1: Showing the contents of *Rasnodashamula Kwatha*^[10]

SN	Drugs	Botanical Name	Part Used	Quantity in Ratio
1.	<i>Bilwa</i>	<i>Aegle marmelos</i> Corr.	<i>Moola</i> (Root) / <i>Moola Twaka</i> (Root Bark)	1 Part (1kg)
2.	<i>Agnimantha</i>	<i>Premna mucronata</i> Roxb.	<i>Moola</i> (Root)	1 Part (1kg)
3.	<i>Shyonaka</i>	<i>Oroxylum indicum</i> Vent.	<i>Moola</i> (Root) / <i>Moola Twaka</i> (Root Bark)	1 Part (1kg)

- *Daha* - Burning of fingers & toes.
- *Aruchi* - Anorexia.
- *Daurbalya* - Weakness due to anemia.
- *Gaurava* - Heaviness in body parts.
- *Shoonataanganama*- Numbness at joints.
- *Utsahahani* - Loss of enthusiasm
- *Bhrama* - Vertigo
- *Murchha* - Loss of motor function.
- *Hritgraha* - Pericarditis, myocarditis, conduction defect.
- *Angavaikalyata* - Deformities.
- *Jadya* - Inability to perform action due to stiffness.
- *Mamsa-shosha* - Muscle wasting.
- *Granthi* - Rheumatoid nodule.
- *Anyaniupdravani* - Carpel tunnel syndrome, Felty's syndrome,

OBJECTIVES

To understand the mode of action of Ayurvedic formulation *Rasnodashamula Kwatha* in *Amavata* w.s.r. to Rheumatoid arthritis

METHODOLOGY

Ayurvedic classical text books and various peer reviewed articles were searched to understand the mode of action of *Rasnodashamula Kwatha* in *Amavata* w.s.r. to Rheumatoid arthritis

4.	<i>Patala</i>	<i>Stereospermum suaveolens</i> DC.	<i>Moola</i> (Root)/ <i>Moola Twaka</i> (Root Bark)	1 Part (1kg)
5.	<i>Gambhari</i>	<i>Gmelina arborea</i> Linn.	<i>Moola</i> (Root) / <i>Moola Twaka</i> (Root Bark)	1 Part (1kg)
6.	<i>Prishnaparni</i>	<i>Uria picta</i> Desv.	<i>Moola</i> (Root) / <i>Panchaanga</i> (Five Parts)	1 Part (1kg)
7.	<i>Shalaparni</i>	<i>Desmodium gangeticum</i> DC.	<i>Moola</i> (Root) / <i>Panchaanga</i> (Five Parts)	1 Part (1kg)
8.	<i>Brihati</i>	<i>Solanum indicum</i> Linn.	<i>Moola</i> (Root)	1 Part (1kg)
9.	<i>Kantakari</i>	<i>Solanum xanthocarpum</i> Linn.	<i>Moola</i> (Root) / <i>Panchaanga</i> (Five Parts)	1 Part (1kg)
10.	<i>Gokshura</i>	<i>Tribulus terrestris</i> Linn.	<i>Phala</i> (Fruit)	1 Part (1kg)
11.	<i>Amrita</i>	<i>Tinospora cordifolia</i> Willd Miers ex Hook and Thomas.	<i>Kaanda</i> (Stem)	1 Part (1kg)
12.	<i>Eranda</i>	<i>Ricinus communis</i> Linn.	<i>Moola</i> (Root)	1 Part (1kg)
13.	<i>Rasna</i>	<i>Pluchea lanceolata</i> C.B Clarke.	<i>Patra</i> (Leaves)	1 Part (1kg)
14.	<i>Nagar (Shunthi)</i>	<i>Zingiber officinale</i> Roxb.	<i>Kanda</i> (Rhizome)	1 Part (1kg)
15.	<i>Devadaaru</i>	<i>Cedrus deodara</i> (Roxb) Loud.	<i>Kaandasaara</i> (Heart wood)	1 Part (1kg)

Method of Preparation^[11]

All the contents of 'Rasnashamoolakam Kwatha' will be taken equal in quantity and *Yavakuta Churna* will be prepared and stored. *Kwatha* (decoction) will be prepared by taking 20 grams of *Kwatha Dravya* and adding 16 times of water (320g=320ml) and it will be boiled and reduced upto *Ashtamansa* (40gm=40ml)

Fresh *Kwatha* will be prepared for every time of its use.

Dose of Kwatha

40ml *Kwatha* added with 10ml *Eranda Taila*, (depending on the *Koshta* i.e, *Krura*, *Mridu* and *Madhyama*) twice in a day

Table 2: Ayurvedic pharmacology of the drugs of Rasnashamula Kwatha^[12]

SN	Drugs	Rasa	Guna	Veerya	Vipaka	Karma	Doshaghnata
1.	<i>Bilwa</i>	<i>Kashaya, Katu</i>	<i>Ruksha, Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Hridya, Shula Prashamana, Raktastambhaka, Garbhashaya Shothahara</i>	<i>Kapha Vata Shamaka</i>
2.	<i>Agnimantha</i>	<i>Tiktha, Katu, Kashaya, Madhura</i>	<i>Ruksha, Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Shothahara, Raktashodhaka, Pramehaghna, Twachya</i>	<i>Kapha Vata Shamaka</i>
3.	<i>Shyonaka</i>	<i>Madhur, Tikta, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Amahara, Deepana-Pachana, Krimighna, Shothahara, Swedajanana, Vrana Ropana, Vedana Sthapana</i>	<i>Kapha Vatahara</i>

4.	<i>Patala</i>	<i>Tikta, Kashaya</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Shothahara, Hridya, Vedana Sthapaka, Trishna Shamaka, Yakruddetjaka</i>	<i>Tridosahara</i>
5.	<i>Gambhari</i>	<i>Tikta, Kashaya, Madhura</i>	<i>Guru</i>	<i>Ushna. Sheeta (fruit)</i>	<i>Katu</i>	<i>Raktapitta Shamaka, Hridya, Sandhaniya, Balya, Mutrajanan, Vrishya</i>	<i>Tridosahara</i>
6.	<i>Prishnaparni</i>	<i>Madhura, Tikta</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Angamarda Prashamana, Vrishya, Dahaprashamana, Jwaraghna, Mutrala</i>	<i>Tridosha Shamaka</i>
7.	<i>Shalaparni</i>	<i>Madhura, Tiktha</i>	<i>Guru. Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vrishya, Balya, Mutrala, Krimighna, Shonitasthapana</i>	<i>Tridosahara</i>
8.	<i>Brihati</i>	<i>Katu, Tiktha</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Mutrala, Shothahara, Raktha Shuddikara, Deepana, Pachana, Rochaka, Keshya, Twachya</i>	<i>Kaphavatashamaka</i>
9.	<i>Kantakari</i>	<i>Tikta, Katu</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kantya, Mutrala, Krimighna</i>	<i>Kapha Vatahara</i>
10.	<i>Gokshura</i>	<i>Madhura</i>	<i>Guru, Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Mutrala, Vrishya, Hridya, Vedanasthapana</i>	<i>Vatapitta Shamaka</i>
11.	<i>Amrita</i>	<i>Tikta, Kashaya</i>	<i>Guru, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Medhya, Chakshushya, Brhamahara, Bhutaghna, Pathya, Vishaghna, Krimighna</i>	<i>Tridoshamaka</i>
12.	<i>Eranda</i>	<i>Madhura, Katu, Kashaya</i>	<i>Guru, Snigdha, Tikshna, Sukshma</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vedanasthapana, Shulahara, Medhya, Angamardaprashamana, Deepana, Bhedana</i>	<i>Kaphavata Shamaka,</i>
13.	<i>Rasna</i>	<i>Tikta</i>	<i>Guru</i>	<i>Ushna</i>	<i>Katu</i>	<i>Sheetahara, Shothahara, Rechana, Shulaprashamana</i>	<i>Kaphavata Shamaka</i>
14.	<i>Nagar (Shunthi)</i>	<i>Katu</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Amavataghni, Pachani,</i>	<i>Kaphavatanut, Sangrahi, Vibandhabhedini</i>
15.	<i>Devadaaru</i>	<i>Kashaya, Katu, Tikta</i>	<i>Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Rasayana, Vrishya, Amavata Hara, Medhya, Agni-Varnya-Kanti Kara</i>	<i>Vatahara</i>

Scientific evaluation of each content of Rasnadashamula Kwatha

Dashamula^[13]

The study demonstrated that *Dashamoola* had anti-inflammatory, analgesic and anti-platelet effects comparable to that of aspirin.

Agnimantha^[14]

Many studies reveal *P.integrifolia* to possess analgesic/antinociceptive, anti-arthritic, antibacterial, anticancer / antitumor / cytotoxic/tumor suppression, anti - inflammatory, anti - microbial, anti - obesity /

hypolipidemic, antioxidant, antiparasitic, antiulcer / gastro-protective, cardiac stimulant / cardioprotective, CNS depressant, hepatoprotective, hypoglycemic, immunomodulatory, longevity-promoting and neuroprotective activities. According to the literature, most of the pharmacological activities of *P. integrifolia* is investigated by using methanol and ethanol as extractive solvents. This solvent generally contains high quantity of phenols, flavonoids, amino acids, vitamins, carbohydrates, etc., phytoconstituents. The activities may be due to the presence of these phytochemicals in the extracts. Most of the times, leaves and roots were selected for

evaluating pharmacological activities. This article is providing a ready accessible source for pharmacological activities of various parts of *P. integrifolia* plant.

Guduchj^[15]

The reviews describe medicinal applications of *T. cordifolia* in countering various disorders and usages as anti-oxidant, anti-hyperglycemic, antihyperlipidemic, hepatoprotective, cardiovascular protective, neuroprotective, osteoprotective, radioprotective, anti-anxiety, adaptogenic agent, analgesic, anti-inflammatory, antipyretic, a thrombolytic agent, anti-diarrheal, anti-ulcer, anti-microbial and anti-cancer agent. The plant is also a source of micronutrients viz. copper, calcium, phosphorus, iron, zinc and manganese. A special focus has been made on its health benefits in treating endocrine and metabolic disorders and its potential as an immune booster. Several patents have been filed and granted to inventions encompassing *T. cordifolia* as a major component of therapeutics for ameliorating metabolic, endocrinal and several other ailments, aiding in the betterment of human life expectancy.

Eranda^[16]

Ricinus communis L. (Castor oil plant) is an important medicinal plant belonging to family Euphorbiaceae. Its phytochemistry, biological and pharmacological activities, and ethnomedicinal uses have been reviewed in the present study. The reported chemical constituents showed the presence of flavonoids, phenolic compounds, fatty acids, amino acids, terpenoids, phytosterol etc. The compounds have been reported to exhibit anticonceptive, antidiabetic, antifertility, anti-inflammatory, antimicrobial, antioxidant, hepatoprotective, insecticidal and wound-healing activities. They also showed free radical scavenging and Hg scavenging activities, and repellent properties. Various parts of *R. communis* have been widely used in traditional medicine such as abdominal disorders, arthritis, backache, muscle aches, bilharziasis, chronic backache and sciatica, chronic headache, constipation, expulsion of placenta,

gallbladder pain, period pain, menstrual cramps, rheumatism, sleeplessness, and insomnia. Castor oil plant has also revealed toxic effects due to the presence of ricin (protein) and ricinine (alkaloid). Comparatively, ricin is more toxic. But still there is need of more research to be conducted with reference to its medicinal importance (particularly exploring of medicinal recipes) and active compounds responsible for various activities.

Rasna^[17]

Pluchea is a genus of flowering plants in the Asteraceae family and comprises 80 species distributed mainly in Northern and Southern America, Africa, Asia, and Australia. Sesquiterpenoids and flavonoids are the main constituents of this genus. Compounds isolated from plants of the *Pluchea* genus display a variety of biological properties, viz., anticancer, antileishmanial, immunosuppressive, antioxidant, anti-acetylcholinesterase, antimicrobial, trypanocidal, hepatoprotective, cytotoxic, larvicidal, anti-ulcer, anti-inflammatory, and antinociceptive activities

Shunti^[18]

The main pharmacological actions of ginger and compounds isolated there from include immunomodulatory, anti-tumorigenic, anti-inflammatory, anti-apoptotic, anti-hyperglycemic, anti-lipidemic and anti-emetic actions. Ginger is a strong anti-oxidant substance and may either mitigate or prevent generation of free radicals. It is considered a safe herbal medicine with only few and insignificant adverse/side effects

Vridhdharu^[19]

Argyreia speciosa (Linn. f.) Sweet is a popular Indian medicinal plant, which has long been used in traditional Ayurvedic Indian medicine for various diseases. This plant is pharmacologically studied for nootropic, aphrodisiac, immunomodulatory, hepatoprotective, antioxidant, anti-inflammatory, antihyperglycemic, antidiarrheal, antimicrobial, antiviral, nematocidal, antiulcer, anticonvulsant, analgesic and central nervous depressant activities. A

wide range of phytochemical constituents have been isolated from this plant. A comprehensive account of the morphology, phytochemical constituents and pharmacological activities reported are included in view of the many recent findings of importance on this plant.

Discussion and Conclusion

RA results in more than 9 million physician visits and more than 250,000 hospitalizations per year.^[20] Disability from RA causes major economic loss and can have a profound impact on families. Since DMARDs control rather than treat RA, RA management is a repetitive process, and patients should be screened periodically for evidence of disease progression or progression and toxic effects of the drug. Repetitive flares, unacceptable disease activity (e.g., ongoing disease activity after 3 months of intensive treatment), or ongoing joint injury requires consideration of significant changes in DMARD type.^[21]

Active joint disease can interfere with physical activity and can also be aggravated by physical activity. While the main purpose of treating RA is to include complete remission, this often happens. Complete remission is defined as the absence of the following: 1) symptoms of active joint pain (unlike mechanical joint pain), 2) morning stiffness, 3) fatigue, 4) synovitis in joint examination, 5) continuous radiographic damage on radiographs consecutive, and 6) elevated levels of erythrocyte sedimentation (ESR) or C-reactive proteins (CRP).^[22]

Ama and *Vata* are the two chief pathognomic factor in production of *Amavata*. *Ama* is *Guru*, *Snigdha*, *Sthira*, *Sthula* and *Pichhila* while the *Vata* have the properties like *Laghua*, *Ruksha*, *Chala*, *Sukshama* and *Vishada*.^[23] The properties of both are on opposite pole of each other. Only the *Sheeta Guna* is common to both. These are the things, which comes in across while treating the *Amavata*, because any measure adopted will principally appose one another. So, a very careful approach can only benefit the patient. The line of treatment laid down by *Chakrapani* denotes firstly the *Pachana* of *Ama*, then restoration

of *Agni* and finally control of *Vata Dosh*. Here an attempt is being made to substantiate these principles.^[24]

- *Tikta Dravyas* are *Ama* and *Pitta pachaka* and *Srotomukhvisodhaka* and having *Vishaghna* and *Lekhana* properties.^[25]
- *Katu rasa* is *Chedaka*, *Margavivaraka* and *Kapha Shamaka*.^[26]
- *Tikta & Katu Rasa* is *Laghua*, *Ushna* and *Tikshna* and having *Kleda* and *Meda Nashaka* properties, which are very useful for *Ama Pachana*. These are also *Deepana* and *Pachana*, so by means of these properties digestion of *Ama*, restoration of *Agni* (*Deepana*) removal of excessive *Kledaka Kapha* and bringing of the *Pakva Dosh* to the *Kostha* from the *Shakha* takes place.
- Totally they bring about *Deepana*, *Pachana*, *Rochana* and *Laghuta* in the body.
- But care should be taken in monitoring the extent of vitiation of *Vata Dosh* because the *Tikta-Katu rasa Dravya* increases the *Vata Dosh*. The drugs selected with *Tikta* and *Katu Rasa* should also possess the *Vataghna* properties

Dashamula is *Tridosahara* in action and the *Dravyas* mainly *Rasna*, *Eranda*, *Vridharu* etc. are *Vatahara* by nature. By assessing the *Rasa Panchaka*, *Rasnashamula Kwatha* is *Vata Pradhana Tridosahara* with other actions of *Shothahara*, *Vedanasthapana* and *Ama pachana*. The *Anupana Eranda Taila* not only improves the potency but also helps in *Vatanulomana* and *Vedanahara* actions. The scientific evaluation also provides anti arthritic, analgesic, hepatoprotective and immunomodulatory action of *Rasnashamula Kwatha*.

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