



## STUDY OF AN AYURVEDIC FORMULATION IN THE MANAGEMENT OF AMAVATA (RHEUMATOID ARTHRITIS)

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### ABSTRACT

*Amavata* (Rheumatoid arthritis) is one of the commonest diseases in the present era which is mainly induced due to improper diet and life style. In the present clinical study 30 *Amavata* (Rheumatoid arthritis) patients were registered from both OPD and IPD, Dept of Kayachikitsa, Ch. Devlal College Of Ayurveda, Yamunanagar, Haryana and were given the medication *Rasonadi Kwatha* (decoction prepared out of 3 herbal drugs) 30 ml twice daily for duration of 30 days. Aim of the study was to evaluate the efficacy of *Rasonadi Kwatha* in *Amavata*. Assessment criteria followed were major clinical symptoms of *Amavata* and Functional capacity of the joints. Major improvement was seen in 36.67%, Minor improvement in 53.33%, No improvement in 10% and none has recorded complete remission. No untoward incidents or complications were occurred during the treatment period. The trial medication was found to be effective in reducing the symptoms of *Amavata* (Rheumatoid arthritis).

**KEYWORDS:** *Amavata*, *Rasonadi Kwatha*, Rheumatoid arthritis.

### INTRODUCTION

“*Ayurveda*” literally means the knowledge of life. *Ayurveda*, the ancient system of Indian healing and wellness, has been progressively gaining ground as a means of alternative treatment and healing in recent times. The reason behind this may be it has so many treasures of life that make a man disease - free, healthy and long living. Main objective of this science is to maintain the health of healthy and curing the ailments of the ailing.<sup>[1]</sup>

When we scrutinize the *Ayurvedic* literatures we will not find any references of disease *Amavata* in Vedic *Madhava Nidana* period and *Sanhita Kala*. But *Madhavakara* (900 AD), the author of the treatise for the first time gave the complete description of *Amavata* which contains etiology, pathogenesis, signs and symptoms and complications of the disease.<sup>[2]</sup> In *Ayurveda*, *Ama* (bio- toxin) is considered as the prime concept in most of the illnesses. The descriptions related to *Ama* closely resemble with the descriptions of free radicals. Diseases occurring by *Ama* are the types of constitutional diseases. *Amavata* is one such condition wherein *ama* combines with the doshas (bodily humors) and spreads all over the body and produces the symptoms. *Amavata* is one of the commonest diseases in the present era which is mainly induced due to improper

diet and life style. Occurrence of *Amavata* on large scale is one of the outcomes of life style modification. It is equated with Rheumatoid Arthritis owing to its similarity of clinical presentation. Rheumatoid arthritis is a chronic progressive autoimmune arthropathy and characterized by bilateral symmetrical involvement of joints with some systemic clinical manifestations. This disease continues to pose challenge to physicians due to severe morbidity and crippling nature and claiming the maximum loss of human power making it a biggest worldwide burning problem irrespective of races. No doubt, allopathic system of medicine has got an important role to play in overcoming the agony of pain, restricted movement and disability caused by the articular diseases. Simultaneously prolonged use of allopathic medicines are not only giving rise to many side effects, toxic symptoms and adverse reactions but also more serious complications like organic lesions etc are caused by them. Hence, the management of this disease is insufficient in other systems of medicine and patients are continuously looking with a hope towards *Ayurveda* to overcome this challenge. Plenty of the medicinal preparations have been described for the management of *Amavata* in our classical texts. But for the present clinical study, *Rasonadi Kwatha*<sup>[3]</sup> described in the text book *Bhaishajya Ratnavali* has been taken. This medication is a decoction which comprises of 3 herbal

drugs viz., *Rasona* or *Lashuna* (*Allium sativum* Linn.), *Vishwa* or *Shunthi* (*Zingiber officinale* Rosc) and *Nirgundi* (*Vitex negundo* Linn). All these drugs are having the property of *Amapachana* (digesting the biotoxin) and pacify the *Vata dosha* effectively and it is said in the classics that this decoction is the most effective one in the management of *Amavata*.<sup>[3]</sup> Hence the trial drug *Rasonadi Kwatha* is selected for the present study to evaluate its efficacy.

### AIM AND OBJECTIVE OF THE STUDY

To evaluate the efficacy of *Rasonadi Kwatha* in the management of *Amavata*.

### MATERIALS AND METHODS

Total numbers of the patients of *Amavata* (Rheumatoid arthritis) were registered for the present clinical trial as per the criteria for the diagnosis of the disease. The patients were selected from the OPD and IPD of Kayachikitsa Department of CDL College of Ayurveda, Yamunanagar, Haryana, India those who are fulfilling the inclusion and exclusion criteria.

**Type of study:** Open clinical study.

**Trial drug:** *Rasonadi Kwatha*.

**Ingredients:** *Rasona* (Garlic) paste - 10 gms, *Shunthi* (dry powder) - 10 gms and *Nirgundi patra* (Leaves of Nirgundi) - 10 gms.

**Method of preparation:** The decoction was prepared according to *Kwatha vidhi* (method of preparation of decoction) described in the text *Sharangadhara Samhita*, i.e., one part of all three drugs (total 30 gms) taken in 16 parts of water (480 ml) boiled in low flame till it reduced to 1/8th (60 ml).

**Dose of the trial drug:** 30 ml twice daily orally before the food (7 am and 7 pm preferably).

**Duration:** 30 days.

#### Inclusion criteria

- 1) Patients between 18 to 60 years of age of both sexes irrespective of caste, religion and socioeconomic status.
- 2) Patients having the clinical features of *Amavata* according to Ayurvedic classics.
- 3) The patients fulfilling the diagnostic criteria for Rheumatoid arthritis as mentioned by revised criteria of American College of Rheumatology (1987).
- 4) Both the cases of RA factor positive as well as negative.

#### Exclusion criteria

- 1) Patients who are steroid dependent or other analgesics for relief of symptoms.

- 2) Patients suffering from other systemic illnesses like Diabetes mellitus, Hypertension, Tuberculosis, Thyroid disorders, cardiac problems, renal conditions, hepato-biliary conditions, HIV infected, pregnancy and any malignancy conditions.
- 3) Patients with severe contractures of joints, other complications like SLE, Septic arthritis etc.

#### Diagnostic criteria

The diagnosis was done on the basis of signs and symptoms as described in Ayurvedic classics as well as revised criteria of American College of Rheumatology (1987) for RA. Ayurvedic diagnosis was done based on the presence of the cardinal symptoms like *Sandhi shoola* (pain in joints), *Sandhi shotha* (swelling in the joints), *Stabdhata* (stiffness and hence difficulty in performing the movements in the involved joints), *Sparsha ahasatva* (tenderness) and *Sashabda sandhi* (crepitus in the joints) and other associated features like *Angamarda* (bodyache), *Aruchi* (tastelessness), *Trishna* (feeling thirsty), *Alasya* (laziness in performing activities due to pain), *Gaurava* (heaviness), *Jvara* (fever), *Apaka* (indigestion) and *Anga shoonata* (oedematous).<sup>[4]</sup>

American College of Rheumatology (1987) revised criteria.<sup>[5]</sup> are mentioned as follows: Criteria a–d must be present for at least 6 weeks. Criteria b–e must be observed by a physician.

#### 1. Guidelines for classification

- a. Four of seven criteria are required to classify a patient as having rheumatoid arthritis (RA).
- b. Patients with two or more clinical diagnoses are not excluded.

#### 2. Criteria

- a. **Morning stiffness:** Stiffness in and around the joints lasting 1 h before maximal improvement.
- b. **Arthritis of three or more joint areas:** At least three joint areas, observed by a physician simultaneously, have soft tissue swelling or joint effusions, not just bony overgrowth. The 14 possible joint areas involved are right or left proximal interphalangeal, metacarpophalangeal, wrist, elbow, knee, ankle, and metatarsophalangeal joints.
- c. **Arthritis of hand joints:** Arthritis of wrist, metacarpophalangeal joint, or proximal interphalangeal joint.
- d. **Symmetric arthritis:** Simultaneous involvement of the same joint areas on both sides of the body.
- e. **Rheumatoid nodules:** Subcutaneous nodules over bony prominences, extensor surfaces, or juxtaarticular regions observed by a physician.
- f. **Serum rheumatoid factor:** Demonstration of abnormal amounts of serum rheumatoid factor by any method for which the result has been positive in less than 5% of normal control subjects.
- g. **Radiographic changes:** Typical changes of RA on posteroanterior hand and wrist radiographs that must include erosions or unequivocal bony decalcification

localized in or most marked adjacent to the involved joints.

Although these criteria were developed as a means of disease classification for investigational purposes, they can be useful as guidelines for establishing the diagnosis.<sup>[5]</sup>

#### Assessment parameters

Three assessment parameters were adopted for this clinical study, which were as follows:

**1. Assessment of Clinical features:** The progress of clinical features of *Amavata* patients of the present study was assessed on the basis of common important clinical features of *Amavata* which are mentioned in Ayurvedic classics as well as features are closely resembled with Rheumatoid arthritis and also with the help of revised criteria of American College of Rheumatology (1987) for RA and implemented it after some modification. *Sandhi shoola* (Joint pain), *Sandhi shotha* (Joint swelling), *Sandhi stabdhata* (Joint stiffness), *Sandhi sparsha asahatvam* (Joint tenderness), *Angamarda* (Bodyache), *Gaurava* (Heaviness of the body), *Agni daurbalya* (Impaired digestive capacity) were selected as common important clinical features of *Amavata* for this study and the scoring pattern was adopted based on the intensity of these 7 symptoms and each symptoms were assessed on the following grading system.

- 0 No symptoms
- 1 Mild symptoms
- 2 Moderate symptoms
- 3 Severe but not restricting daily activities
- 4 Severe and restricting daily activities

**2. Assessment of Functional Capacity:** Functional capacity was assessed with the following parameters:

**a. Walking time** – The patients were asked to walk a distance of 50 feet and the time taken was recorded before and after treatment with the help of stop watch.

**b. Grip strength** – The patients were asked to compress an inflated ordinary sphygmomanometer cuff with the help of affected hands under standard condition of pressure (i.e. 20 mmHg) to measure the functional capacity of the affected upper limb especially for both hands and wrist joints and it was recorded before and after the treatment.

**c. Foot pressure** – The patients were asked to press the weighing machine with the help of affected leg to measure the functional capacity of affected lower limb (especially affected ankle joint and foot) and it was recorded before and after the treatment.

**3. Assessment of Overall effect of Therapy:** The overall effect of the therapy or the treatment of the present clinical study was assessed with the help of the criteria adopted from American College of Rheumatology (1987) criteria revised and it was

implemented in the study after some modification. Results of the present clinical study were classified into four groups viz., Complete Remission, Major Improvement, Minor Improvement and No Improvement.

#### OBSERVATIONS AND RESULTS

Most of the patients were females (73.33%), 60.67% were belonging to 30 to 45 years age group, 73.33% patients were Hindu, 93.33% were married, 66.67% were Housewives, 83.33% were educated from primary to graduate level, 53.33% were Non vegetarians, 63.33% were belonging to middle socio economic status. Maximum patients (60%) had negative family history of RA, 86.67% of the patients had Gradual onset, 46.67% of the patients were having Chronicity of less than 2 years, 86.67% had poor appetite, 43.33% had *Krura koshta* (constipated). All the patients had worsening of the condition during winter season (*Sheeta ritu*), rainy season (*Varsha ritu*) and moist environment and exposure to heat was found in most of the patients (83.33%) as relieving factor, 50.33% patients were of *Vata Kapha prakriti* (*Vata-Kapha* physical constitution).

In majority of the patients (90%) wrist joint was involved along with Metacarpophalangeal (83.33%), Metatarsophalangeal (76.67%), Knee (73.33%), Ankle (66.67%), Elbow (43.33%), Proximal Interphalangeal (26.67%), Distal Interphalangeal (6.67%), Shoulder (6.67%) and Lumbosacral (3.33%) joints were involved. C-Reactive Protein was found positive in 56.67% cases and RA factor was positive in 33.33% which says that RA factor positive is not a compulsory factor for diagnosing Rheumatoid arthritis and supports the ACR revised criteria (1987) of the diagnosis of Rheumatoid arthritis. Rheumatoid nodule was seen in 13.33% patients.

All the patients were suffering from *Pratyatma lakshanas* (cardinal symptoms) of *Amavata* i.e., *Sandhi shoola* (Joint pain), *Sandhi shotha* (Joint swelling), *Sandhi stabdhata* (Stiffness in the joints) and *Sandhi sparsha asahatvam* (Joint tenderness). Other *samanya lakshanas* (general clinical features) like *Angamarda* (Bodyache), *Gaurava* (Heaviness of the body) and *Agni daurbalya* (Impaired digestive capacity) were observed in 66.67%, 73.33% and 66.67% respectively.

**Table 1: Effect of therapy on the following Clinical features.**

Clinical Features	Mean Score		% of Relief	S.D.	S.E.	t	P
	BT	AT					
<i>Sandhi shoola</i> (Joint Pain)	2.63	1.13	57.03	0.57	0.104	13.04	<0.0001
<i>Sandhi shotha</i> (Joint swelling)	1.87	0.97	48.12	0.40	0.073	12.24	<0.0001
<i>Sandhi stabdhata</i> (Joint stiffness)	2.77	1.13	59.20	0.76	0.138	12.04	<0.0001
<i>Sandhi sparsha asahatvam</i> (Joint tenderness)	2.07	1.07	48.31	0.64	0.117	8.515	<0.0001
<i>Angamarda</i> (Bodyache)	2.40	1.17	51.25	0.62	0.114	12.54	<0.0001
<i>Gaurava</i> (Heaviness of the body)	2.10	1.27	39.52	0.36	0.067	16.00	<0.0001
<i>Agni daurbalya</i> (Impaired digestive capacity)	2.57	1.10	57.19	0.63	0.115	12.77	<0.0001

**Table 2: Effect of Therapy on Functional Assessment Criteria.**

Functional Assessment Criteria	Mean Score		% of Relief	S.D.	S.E.	t	P
	BT	AT					
Walking Time	12.67	11.30	12.09	0.321	0.058	17.694	<0.0001
Grip Strength	89.27	98.10	9.89	1.416	0.258	35.452	<0.0001
Foot Strength	19.37	22.77	17.55	0.674	0.123	27.605	<0.0001

**Table 3: Overall Effect of Therapy.**

Effects	No. of Patients	Percentage
Complete Remission	0	0
Major Improvement	11	36.67
Minor Improvement	16	53.33
No Improvement	3	10

In the present clinical study it was observed that all the results were statistically found highly significant ( $P < 0.0001$ ) on the parameters of Clinical symptoms, Functional capacity as tabulated in Table no. 1 and Table no. 2 respectively. Overall effect of the therapy which is shown in Table no. 3 expresses that maximum patients (53.33%) showed minor improvement, 36.67% subjects had major improvement and 10% of the cases didn't have any improvement at all. Any untoward incidents were not noticed in the patients during the therapy period.

Probable mode of the action of the trial drug The trial medication comprises of 3 drugs viz., *Lashuna* (*Allium sativum* Linn.), *Shunthi* (*Zingiber officinale* Rosc) and *Nirgundi* (*Vitex negundo* Linn). As these drugs are used in combination, the combined effect of these drugs might have been seen in reducing the symptoms of Rheumatoid arthritis patients. All these drugs are having the properties of *Deepana* (carminative), *Amapachana* (digests the *ama* or bio-toxin that is caused due to impaired digestive power), *Vedanasthapana* (property of lessen the pain), *Shothahara* (reduces the swelling) and are considered as best in pacifying the *Vata Kapha doshas* (bodily humors) effectively.<sup>[6]</sup> Individually, *Lashuna* (*Allium sativum* Linn.) has the properties like anti-oxidant, anti-inflammatory, anti-arthritis, anti-rheumatic, antibacterial, analgesic, immunomodulator.<sup>[7]</sup> *Shunthi* (*Zingiber officinale* Rosc) is having the properties like anti-inflammatory, anti-arthritis, analgesic, anti-prostaglandin, immunomodulator.<sup>[8]</sup> *Nirgundi* (*Vitex negundo* Linn) has mainly anti-inflammatory and analgesic properties.<sup>[9]</sup> To sum up,

*Rasona* and *Nirgundi* with their added *rasayana* (rejuvenation) property not only reduced the symptoms but also improved the immunity (*Vyadhikshamatva*) of the patients. *Nirgundi* is also a strong *vata shamaka* (pacifies *vata dosha*) drug. *Lashuna* and *Shunthi* due to their *deepana* (carminative) and *pachana* (digest the bio-toxin or free radicals) properties not only improved the *mandagni* (impaired digestive capacity) but also caused *ama pachana*.

## CONCLUSION

The trial drug *Rasonadi kwatha* (the decoction prepared out of three herbal drugs) is found to be effective in reducing the symptoms of *Amavata*. In this study the trial drug was prescribed only for shorter duration i.e., 30 days and no complications had been observed in this clinical study. Such kind of research works may be designed in future for more conformation and for longer duration to provide better Ayurvedic treatment on the management of *Amavata* (Rheumatoid arthritis).

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