



**RESEARCH ARTICLE**

**Effect of Castor Oil along with *Ajmodadi Churna* & *Ruksha Sweda* in the  
Management of Rheumatoid Arthritis vis-a-vis *Amavata***

**Mishra PK<sup>1\*</sup>, Rai NP<sup>2</sup>**

<sup>1</sup>MD, Kayachikitsa (Ay. Medicine), Faculty of Ayurveda, IMS, BHU, Varanasi India.

<sup>2</sup>Professor, Department of Kayachikitsa, Faculty of Ayurveda, IMS, BHU, Varanasi, India.

Manuscript No: IJPRS/V3/I1/00105, Received On: 01/03/2014, Accepted On: 13/03/2014

**ABSTRACT**

Rheumatoid arthritis is an autoimmune inflammatory disorder. It is a crippling disorder which has systemic effect if not treated earlier. Amavata is a similar disorder described in Ayurveda. Despite vast range of NSAIDs, immunosuppressive agents, corticosteroids etc., the complete remission of this disease is still not possible. Ayurveda, based on holistic principles, is a good hope for the management of this ailment. Present clinical trial was carried out on 20 patients at Sir Sunder Lal Hospital, IMS BHU, Varanasi, India by using castor oil, *Ruksha sweda* (dry fomentation) and a polyherbal compound *Ajmodadi churna*. After three month of therapy quite improvement in symptoms of rheumatoid arthritis (Amavata) was observed. Also there was not any side effect of the drugs used.

**KEYWORDS**

Ama, Amavata, Holistic Principle, Rheumatoid Arthritis

**INTRODUCTION**

With the advent of human beings there has always been struggle for existence & the survival of the fittest has occurred. In this effort the man while climbing the step of success is moving away from health, and abnormal food habits, greed, anger have become a part of his life. The sedentary life style has given birth to number of diseases & human beings are suffering despite, access to technological advances that offer the promise of unequal improvement in our quality of life. In spite of amazing diagnostic techniques & medicines, our society is suffering from unpreventable epidemics of heart diseases, cancers, rheumatoid diseases & other autoimmune diseases. Rheumatoid arthritis, also referred to as rheumatoid disease, is a chronic, progressive

and disabling autoimmune disease that causes inflammation and pain in the joints, the tissue around the joints, and other organs in the human body which can lead to substantial loss of functioning and mobility if not treated adequately. Amavata is a disease mentioned in Ayurveda having same clinical presentation. Amavata was first described as an independent disease in *Madhava Nidanam*, a book written in 8<sup>th</sup> century.<sup>1,2</sup>

Ayurveda is a life science & indicates knowledge of appropriate & inappropriate, happy or sorrowful conditions of living, what is auspicious or inauspicious for longevity as well as measure of life itself. It has so many treasures of life that make man disease-free, healthy & long living. Main objective of this science is to maintain the health of healthy & curing the ailments of the ailing.

*Ama* is the predominant pathogenic factor in this disease. In context of medicine, ama refers to

**\*Address for Correspondence:**

**Pramod Kumar Mishra**

MD, Kayachikitsa (Ay. Medicine),

Faculty of Ayurveda,

IMS, BHU, Varanasi, India

E-Mail Id: [shandilyapk11@gmail.com](mailto:shandilyapk11@gmail.com)

the factors that arise as a consequence of impaired functioning of *agni* (digestive fire) whereas in literal terms it means unripe, immature and undigested. In other words, it is metabolic by product which cause ailment when get accumulated. There are physical, mental & behavioural factors which lead to malfunctioning of gastro-intestinal system & formation of ama.<sup>3</sup> Ama is the basic concept of Ayurveda in several diseases. Diseases occurring by ama are the types of constitutional diseases. Amavata (RA) is the one of the disease caused by ama. So this disease has psychic and life style relation. In other words, it has psych-neuro-immunological relation which is affected by one's erroneous life style.

Treatments of RA are pharmacological and non-pharmacological. Non pharmacological treatment includes physical therapy, orthoses, occupational therapy and nutritional therapy but these don't stop the progression of joint destruction. Analgesics and anti-inflammatory drugs, including steroids suppress symptoms, but don't stop the progression of joint destruction either. No doubt allopathic system of medicine has got an important role to play in overcoming agony of pain, restricted movement and disability caused by the articular disease. But 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. There is little or say no side effect of herbal & herbo-mineral preparations if used judiciously. An US study shows efficacy of Ayurvedic medicines in rheumatoid arthritis cure. Personalised Ayurvedic interventions have demonstrated clinically significant improvement in rheumatoid arthritis on a par with allopathic treatment with added advantage of lesser side-effects, according to a study.<sup>4</sup> Again a study sponsored by WHO depicted that classical Ayurvedic treatment was effective in the first

cohort of patients who completed the treatment, even patients with functional limitations showed significant improvement.<sup>5</sup> In Chakradutta, a book written by Chakrapanidutta in 11<sup>th</sup> century there has been excellent description of sequential employment of 6 modalities of treatment in amavata.<sup>6</sup> In present study *Ajmodadi churna*, *Eranda* (Castor) oil, along with *Ruksha Baluka Sweda* (dry fomentation by sand) are selected as *shamana* (palliative/suppressive) and *shodhana* (bio-purificatory measure) (*virechana*-purgation in this study). This study was an effort to find out a better remedy for rheumatoid arthritis vi-a-vis amavata.

## MATERIALS AND METHODS

The patients were selected for this trial after fulfilment of diagnostic criteria of amavata (RA). Patients were thoroughly examined and questioned on both subjective & objective parameters. Ethical clearance and informed consent was obtained before conducting the clinical trial (Dean/2011-12/169 on 14/18-5-2011).

### Selection of Drug

*Eranda taila* is a well-known prescribed medicine for amavata by Bhaishajyaratnavali.<sup>7</sup> It was purchased from the market (Dabur Company). *Ruksha sweda* (dry fomentation) of sand bag was prepared by heating the sand & making a cloth bag (pottali) for application. *Ajmodadi churna* is described for amavata in Chakradutta<sup>8</sup>. All ingredients were identified and triturated to make fine powder. All ingredients are mentioned in table 1.

Table 1: Selected Drugs with Botanical & Family Names

Sanskrit Name	Botanical Name	Family
Ajmoda	<i>Carum roxburghianum</i> (DC) Craib.	Umbellifereae
Maricha	<i>Piper nigrum</i> Linn.	Piperaceae

Pippali/Pip palimula	<i>Piper longum</i> Linn.	Piperaceae
Vidanga	<i>Embelia ribes</i> Burm.	Myrsinaceae
Devadaru	<i>Cedrus deodara</i> Roxb.	Pinaceae
Shatahwa	<i>Foeniculum</i> <i>vulgare</i> Mill.	Umbellifereae
Chitraka	<i>Plumbago</i> <i>zeylanica</i> Linn.	Plumbaginaceae
Haritaki	<i>Terminalia</i> <i>chebula</i> Retz.	Combretaceae
Shunthi	<i>Zingiber</i> <i>officinale</i> Rosc	Zingiberaceae
Vridhadaru	<i>Argyria</i> <i>speciosa</i> Sweet	Convolvulaceae
Eranda	<i>Ricinus</i> <i>communis</i> Linn	Euphorbiaceae
Saindhava lavana	Rock salt	

(Source: Dravayaguna-vijnana-2 by Sharma PV)

### Dose

Churna- 5 g twice daily with luke warm water for total period of 3 months.

Eranda oil - 10 ml twice daily (12 hourly).

Ruksha sweda-Intermittent application for 5-10 minutes twice daily.

### Selection of Cases

A total 20 patients of RA were randomly selected for this study from the Kayachikitsa OPD & IPD, Sir Sunder Lal Hospital, BHU, Varanasi, India of which 17 patients completed 3 months follow-up at 1 month interval. The case selection was regardless of sex, occupation, socio-economic, seropositive & seronegative condition. Both acute & chronic cases of RA were taken under consideration following the EULAR-2010<sup>9</sup> criteria & the clinical feature of amavata described in Madhava Nidana.<sup>10</sup>

### Inclusion Criteria

- Diagnosed cases of Amavata and RA.
- Age between 20 & 60 yr.
- Patients willing to participate in the above trial.

### Exclusion Criteria

- Patients with deformities and systemic complication.
- Patients suffering from diabetes, hypertension, tuberculosis, asthma or other disease.
- Pregnant and lactating women.
- Patients discontinuing the trial drug and non-willing patients.

### Calculation of Data

Statistical calculation was done by using Friedman Test.

### Investigation

All patients were advised to the following blood investigations- Haemoglobin, Total leucocyte count, Blood sugar, Liver function test, Renal function test, Anti-streptolysin O titre (to exclude rheumatic disease), HLA B-27 & ANA to exclude other auto-immune and collagen diseases.

Only patients having normal levels were included in the study. CRP, ESR, RF, anti-CCPab were also done before initiation of treatment & after completion of the therapy.

### Criteria for the Assessment of Amavata (Rheumatoid Arthritis)

1. Symptomatic improvement.
2. Side / toxic effect of the drugs if any.

### Parameters for the Assessment of Symptoms

Intensity of the symptoms was assessed on the following visual analogue scale:

0. No symptom
1. Mild
2. Moderate

3. Severe but not restricting daily activity

4. Severe and restricting daily activity

## RESULTS

Selected patients were allowed to take the drugs as advised. Assessment was done on the subjective & objective parameters. Significant changes were observed which are shown in the following tables. However not any change was observed in the routine blood examination. Following tables show changes in symptoms of RA (Amavata):

(BT- before treatment, F<sub>1</sub>- 1<sup>st</sup> follow up, F<sub>2</sub>- 2<sup>nd</sup> follow up, F<sub>3</sub>- 3<sup>rd</sup> follow up, F-test- Friedman test)

## DISCUSSION

As shown in observation tables 2 & 3 there was significant improvement in symptoms. It was evident clinically as well as statistically. So the combination of therapy used in this trial has been proved effective in the management of rheumatoid arthritis (~amavata).

**Castor Oil**<sup>1, 12, 13, 14, 15</sup>

Castor oil is a good source of vitamin E and effective natural anti-inflammatory. The tocopherol present in the oil has anti-inflammatory & anti-oxidant property and it also improves microcirculation and UV

Table 2: Changes in Symptoms of RA (Amavata) in 17 Patients

Symptom	Score	BT		F <sub>1</sub>		F <sub>2</sub>		F <sub>3</sub>		F-test
		No.	%	No.	%	No.	%	No.	%	
Bodyache	0	0	0	0	0	3	17.6	16	94.1	$\chi^2=42.61$ p<0.001
	1	4	20	10	50	12	70.5	1	5.9	
	2	9	45	9	45	2	11.8	0	0	
	3	7	35	1	5	0	0	0	0	
	4	0	0	0	0	0	0	0	0	
Heaviness	0	3	15	5	25	5	29.4	13	76.5	$\chi^2=33.80$ p<0.001
	1	6	30	7	35	11	64.7	3	17.6	
	2	8	4	7	35	1	5.9	1	5.9	
	3	3	15	1	5	0	0	0	0	
	4	0	0	0	0	0	0	0	0	
Indigestion	0	0	0	1	5	4	23.5	11	64.7	$\chi^2= 4.96$ p<0.001
	1	4	20	7	35	9	52.9	6	35.3	
	2	4	20	11	55	4	23.5	0	0	
	3	12	60	1	5	0	0	0	0	
	4	0	0	0	0	0	0	0	0	
Pain	0	0	0	0	0	0	0	10	58.8	$\chi^2=48.50$ p<0.001
	1	1	5	2	10	8	47.1	5	29.4	
	2	2	10	8	40	9	52.9	2	11.8	
	3	9	45	9	45	0	0	0	0	
	4	8	40	1	5	0	0	0	0	
Joint swelling	0	3	15	4	20	6	35.3	11	64.7	$\chi^2=41.16$ p<0.001
	1	3	15	5	25	11	64.7	6	35.3	
	2	6	30	11	55	0	0	0	0	
	3	8	40	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	

Table 3: Changes in Symptoms of RA (Amavata) in 17 Patients

Stiffness	0	0	0	0	0	2	11.8	11	64.7	$\chi^2=47.82$ $p<0.001$
	1	3	15	5	25	10	58.8	6	35.3	
	2	5	25	11	55	5	29.4	0	0	
	3	10	50	4	20	0	0	0	0	
	4	2	10	0	0	0	0	0	0	
Loss of taste	0	8	40	10	50	11	64.7	15	88.2	$\chi^2 = 27.33$ $p<0.001$
	1	6	30	6	30	5	29.4	2	11.8	
	2	2	10	3	15	1	5.9	0	0	
	3	4	20	1	5	0	0	0	0	
	4	0	0	0	0	0	0	0	0	
Thirst	0	14	70	16	80	15	88.2	17	100	$\chi^2=12.00$ $p<0.01$
	1	6	30	4	20	2	11.8	0	0	
	2	0	0	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	
Lack of Enthusiasm	0	4	20	5	25	8	47.1	14	82.4	$\chi^2 =34.43$ $p<0.001$
	1	6	30	10	50	9	52.9	3	17.6	
	2	7	35	5	25	0	0	0	0	
	3	3	15	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	
Tender-ness	0	8	40	11	55	11	64.7	14	82.4	$\chi^2 =16.36$ $p<0.01$
	1	9	45	9	45	6	35.3	3	17.9	
	2	3	15	0	0	0	0	0	0	
	3	0	0	0	0	0	0	0	0	
	4	0	0	0	0	0	0	0	0	

protection.  $\gamma$ -tocopherol &  $\gamma$ -CEHC {2,7,8-trimethyl-2- ( $\beta$ - carboxy ethyl) -6- hydroxyl chroman}, inhibit cyclooxygenase activity & thus possess anti-inflammatory properties. In a study conducted in 2009 it is found that castor oil effectively relieves arthritic symptoms. Pharmacological characterisation has shown similarities between the effects of ricinoleic acid & those of capsaicin (a potent analgesic), suggesting a potential interaction of this drug on sensory neuropeptide mediated neurogenic inflammation.

### Ajmodadi Churna

“Ajmodadi churna” is a polyherbal ayurvedic medicine used as a carminative and an antispasmodic, is a strong wormifuge, and helps in all painful conditions like sciatica and stiffness in back and also restores normal digestive functions. Based on organoleptic characters, physical characteristic, drug is effective in breaking pathology of the disease amavata. It improves GI functioning and thus checks further progression of the disease. It has good anti-inflammatory activity.<sup>16</sup>

## Ruksha Sweda<sup>17, 18, 19, 20</sup>

Swedana (fomentation) is the process by which the sweat or perspiration is produced in the body by using various methods. It is the procedure which relieves stiffness, heaviness & coldness of the body and produces sweating. Swedana improves joint function and its mobility. It also removes stiffness of joints and alleviates the pain. It also removes numbness and contraction.

## CONCLUSION

Ayurveda advocates a range of promotive, preventive and curative measures. It is in this context that ayurveda describes the different life style regimens and the unique therapeutics based on the doctrine of samshodhana (bio-purification) and samshamana therapies. In this clinical study Eranda oil, Ajmodadi powder & dry fomentation using sand bag are based on these principles which was found to be very effective in the treatment of RA. There was not any side effect as such. However some patients complained of burning sensation in upper GI in the beginning of therapy. So with the hope that Ayurveda can provide better management for the disease RA vis-a-vis Amavata further research is needed.

## REFERENCES

1. Sharma, P. V. (2009). Ayurveda Ka Vajnanika Itihasa (Scientific History of Ayurveda). *Chaukhamba Orientalia, Varanasi*, 262.
2. Madhavakara, Madhava. Nidana, Edited by Yadunadan Upadhyaya, (2010). *Choukhambha Sanskrit Sansthana, Varanasi*, Vol.1, 508-512.
3. Agnivesha, Charaka Samhita (Vimanasthana), (2009). Edited by Sharma P. V., *Choukhambha Orientalia, Varanasi*, 311.
4. Furst, D. E., Venkatraman, M. M., McGann, M., Manohar, P. R., Booth-LaForce, C., Sarin, R., & Kumar, P. K. (2011). Double-blind, randomized, controlled, pilot study comparing classic ayurvedic medicine, methotrexate, and their combination in rheumatoid arthritis. *JCR: Journal of Clinical Rheumatology*, 17(4), 185-192.
5. Krishna, K. P. (2011). The efficacy of Ayurvedic treatment for rheumatoid arthritis: Cross-sectional experiential profile of a longitudinal study. *International journal of Ayurveda research*, 2(1), 8. -13.
6. Chakrapani Dutta, Chakradutta, Edited by Tripathi ID, *Choukhambha Sanskrit Sansthana, Varanasi*, 2009, 165.
7. Shastri, A. D. (2001). Bhaishajyaratnavali. *Choukhambha Sanskrit Sansthan, Varanasi*, 217, 481.
8. Chakrapani Dutta, Chakradutta, Edited by Tripathi I. D. (2009), *Choukhambha Sanskrit Sansthana, Varanasi*, 170.
9. Ankoor Shah, E. William St. Clair, (2012). Rheumatoid Arthritis, In Harrison's Principles of Internal Medicine 2; 18th edition; Mc Graw Hill Medical, New Delhi; 2745.
10. Madhavakara, Madhava. Nidana. (2010). Edited by Yadunadan Upadhyaya, *Choukhambha Sanskrit Sansthana, Varanasi*, Vol.1, 509-511.
11. Herting, D. C., & Drury, E. J. E. (1963). Vitamin E content of vegetable oils and fats. *The Journal of nutrition*, 81(4), 335-342.
12. Jiang, Q., Christen, S., Shigenaga, M. K., & Ames, B. N. (2001).  $\gamma$ -Tocopherol, the major form of vitamin E in the US diet, deserves more attention. *The American journal of clinical nutrition*, 74(6), 714-722.
13. Murakami, Y., Kawata, A., Koh, T., Seki, Y., Tamura, S., Katayama, T., & Fujisawa, S. (2013). Inhibitory Effects of Tocopherols on Expression of the Cyclooxygenase-2 Gene in RAW264. 7 Cells Stimulated by Lipopolysaccharide, Tumor Necrosis Factor- $\alpha$  or Porphyromonas gingivalis Fimbriae. *In Vivo*, 27(4), 451-458.
14. Medhi, B., Kishore, K., Singh, U., & Seth, S. D. (2009). Comparative clinical trial of

- castor oil and diclofenac sodium in patients with osteoarthritis. *Phytotherapy research*, 23(10), 1469-1473.
15. Viera, C., Evangelista, S., Cirillo, R., Lippi, A., Alberto Maggi, C., Manzini, S. (2000). Effect of rinoleic acid in acute & subchronic experimental models of inflammation, *Mediators of Inflammation*, 9, 223-228.
16. Ram, H. A., Sriwastava, N. K., Makhija, I. K., & Shreedhara, C. S. (2012). Anti-inflammatory activity of Ajmodadi Churna extract against acute inflammation in rats. *Journal of Ayurveda and integrative medicine*, 3(1), 33.
17. Agnivesha, In Charaka Samhita (Sutrasthana); edited by Shastri, R. D., Upadhyaya, Y. N., Pandey, G. S., Gupta, B. D., Mishra, B.; Chaukhambha Bharati Academy, Varanasi; 2005, 424.
18. Sushruta, In Sushruta Samhita (Chikitsasthana); edited by Shastri, A. D.; Chaukhambha Sanskrit Sansthana Varanasi; 2007, 141.
19. Agnivesha, In Charaka Samhita (Sutrasthana); edited by Shastri, R. D., Upadhyaya, Y. N., Pandey, G. S., Gupta, B. D., Mishra, B.; Chaukhambha Bharati Academy, Varanasi; 2005, 283.
20. Agnivesha, In Charaka Samhita (Sutrasthana); edited by Shastri, R. D., Upadhyaya, Y. N., Pandey, G. S., Gupta, B. D., Mishra, B.; Chaukhambha Bharati Academy, Varanasi; 2005, 286.

