

International Research Journal of Ayurveda & Yoga

An International Peer Reviewed Journal for Ayurveda & Yoga



A Clinical Study To Evaluate The Effect of *Amritadi Churna* On *Amavata* w.s.r. To Rheumatoid Arthritis.

Dr. Ankita¹ Dr. Roshi Mahajan²

ICV-70.44- ISRA-1.318

VOLUME 4 ISSUE 4

1. Assistant Professor, Department of Samhita & Siddhanta, Govt. Ayurvedic Medical College, Jammu
2. Assistant Professor, Department of Roga Nidana, Govt. Ayurvedic Medical College, Jammu.

Corresponding Author :- Dr. Roshi Mahajan, Assistant Professor, Department of Roga Nidana, GAMC, Jammu
Email- roshimahajanmd@gmail.com

Article received on 2nd April 2021

Article Accepted 27th April 2021

Article published 30 April 2021

ABSTRACT: -

Rheumatoid Arthritis is an enigmatic disease. Its historical background is not known. But in the recent years the disease has been extensively probed by development in immunology, biochemistry and radiology. Ayurvedic physicians have also benefited from these new medical advances. RA is often considered a benign disease, but it may cause considerable disability, crippling, and death. Patients sometimes recover spontaneously and achieve complete remission but, in most cases, the disease becomes chronic, resulting in functional deterioration of the joints and disability. There has been extensive scientific research in Ayurvedic therapies during recent years. The present study is intended to focus on the clinical evaluation of an herbal preparation *Amritadi churna* quoted by Acharya Chakrapani in Chakradatta in the management of *Amavata* (Rheumatoid Arthritis). The results were quiet promising for futuristic studies with other herbal preparations.

KEYWORDS: *Amavata*, Rheumatoid Arthritis, *Amritadi Churna*, Functional Assessment.



This work is licensed under a creative attribution -Non-commercial-No derivatives 4.0 International License commons

How to cite this article: Dr. Ankita , Dr. Roshi Mahajan “A Clinical Study To Evaluate The Effect Of *Amritadi Churna* On *Amavata* W.S.R. To Rheumatoid Arthritis” IRJAY, April: 2021, Vol-4, Issue-4;19-27 ; **Doi:** <https://doi.org/10.47223/IRJAY.2021.4415>

INTRODUCTION

Amavata is portrayed in Ayurveda as a joint disorder clinically manifesting as inflamed, painful and stiff ankle, knee, hip, wrist, elbow, and shoulder joints. The symptoms of *Amavata* (Rheumatoid Arthritis) are compared with Rheumatoid Arthritis (RA) in conventional medicine. The incidence of Rheumatoid Arthritis ranges from 0.3 to 2.1% in most populations of the world and the rate is much higher in females than in males. The prevalence increases with age and sex difference diminishes in the older age group. It is seen throughout the world and affects all races. The peak incidence of onset of RA is in persons 30 to 60 years old, but no age is immune actually. The severity of Rheumatoid Arthritis varies from mild oligo-articular disease of short duration and nominal or no joint damage to poly-arthritis with noticeable functional impairment. The causes of *Amavata* (Rheumatoid Arthritis) are incompatible diet, poor digestion, and sedentary habits¹. Impaired digestion due to feeble *Agni* (digestive power) contributes to the formation of *Ama* in the intestine which further reaches to all parts of the body. RA is generally treated with Non-steroidal Anti Inflammatory drugs (NSAIDs). These drugs do not modify disease progression². They have a tendency to cause adverse effects in gastrointestinal system ranging from mild dyspepsia and heartburn to ulceration of the stomach and duodenum, and many produce fatal consequences. In one survey, 27% of the patients suffering from arthritis in the U.S.A. had used complementary alternative medicine therapies (CAM)³. In a survey in India, 43% had used CAM therapies⁴. Disease modifying therapies, such as methotrexate, leflunomide, sulfasalazine, gold salts, penicillamine, azathropine, cyclophosphamide, and chlorambucil, are used to modify the course of the disease but have

serious toxic effects. These toxic effects include aplastic anemia (potentially life threatening), liver toxicity, gastrointestinal toxicity, leucopenia and skin rashes. Considering all the above, an attempt has been made to evaluate the efficacy of an Ayurvedic herbal formulation *Amritadi churna* in the patients of *Amavata*.

MATERIAL & METHODS

Selection of Patients

30 patients of *Amavata* fulfilling the criteria of diagnosis were registered from the OPD of GAMC& Hospital, Jammu irrespective of their sex and religion. Out of these patients, 2 patients left the treatment before the completion of the course. Remaining 28 patients completed the full course. Patients were treated for known symptoms of *Amavata* with the selected drugs for 45 days as per International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP).

Inclusion criteria

1. Subjects having classical signs and symptoms of *Amavata* between the age group of 15-60 years were considered for the present study.
2. Patients fulfilling the criteria laid down by the American Rheumatism Association (ARA) were selected and registered.

Exclusion Criteria

1. Chronicity less than 6 weeks and more than 10 years.
2. The patients who had deformities like ulnar deviation, swan neck deformities, ankylosis of wrist & elbow etc.
3. Patients with other systematic diseases like Diabetes Mellitus, Hypertension.
4. Pregnant and lactating women.

DIAGNOSTIC CRITERIA

A special Performa was prepared

incorporating all the signs and symptoms based on both Ayurvedic as well as Modern descriptions. All the points in the perspective of *Dosha, Dusya, Srotasa* and *Agni* on Ayurvedic line were also included in the Performa. A detailed clinical history was taken initially and complete physical examination of each patient was carried out on the basis of Performa. RA factor test, Haemogram, ESR, urine and biochemical investigation like serum uric acid, serum cholesterol, blood sugar level, total proteins and albumin globulin ratio were carried out in all the patients. In addition, the criteria laid down by American Rheumatism Association 1988 for the Diagnosis of the Disease was also followed for the confirmation of Rheumatoid arthritis, which is as follows :-

1. Morning stiffness lasting for more than one hour.
2. Arthritis of three or more joints
3. Arthritis of hand joints
4. Symmetrical arthritis

The details of scoring pattern adopted for assessment of clinical signs and symptoms is as follows:

[1] Pain in joint

Signs & symptoms	Score
No pain	0
Mild pain of bearable nature, comes occasionally	1
Moderate pain, but no difficulty in joint movement, appears frequently and requires some <i>Upasaya</i> measures for relief	2
Slight difficulty in joint movements due to pain or severe pain, requires medication and may remain throughout the day	3
More difficulty in moving the joints and pain is severe, disturbing sleep and requires strong analgesics	4

[2] Swelling of the joint

Signs & symptoms	Score
No swelling	0
Slight swelling	1
Moderate swelling	2
Severe swelling	3

5. Presence of rheumatoid nodules
6. Presence of Rheumatoid factor
7. Radiological changes such as particular osteoporosis, loss of articular cartilage or erosion.

CRITERIA FOR ASSESSMENT

The results of the therapy were assessed on the basis of classical signs and symptoms described in Ayurveda and mentioned by ARA 1988. Functional capacity of the patients was evaluated along with laboratory investigations. The details of assessment criteria are mentioned below:

CLINICAL ASSESSMENT

The indoor patients were examined daily and the outdoor patients were assessed weekly, and changes observed in the signs and symptoms were assessed by adopting suitable scoring method and the objective signs by using appropriate clinical tools.

[3] Stiffness of the joints

Signs & symptoms	Score
No stiffness or stiffness lasting for 5 min	0
Stiffness lasting for 5 min to 2 hrs.	1
Stiffness lasting for 2 to 8 hrs	2
Stiffness lasting for more than 8 hrs	3

[4] Tenderness of joints

Signs & symptoms	Score
No tenderness	0
Subjective experience of tenderness	1
Wincing of face on pressure	2
Wincing of face with withdrawal of affected parts on pressure	3
Resists to touch	4

[5] Redness of joints

Signs & symptoms	Score
Redness observed before treatment	2
Reduction in redness after treatment	1
No redness	0
No change after treatment	2

[6] Warmth of joint

The temperature of the joint surface was measured using the digital skin temperature measuring instrument. The temperature was compared with the normal body surface. The rise in the temperature of joint surface was scored as follows:

Signs & symptoms	Score
Raised temperature when compared to the normal body surface	2
Fall in local warmth	1
Normal temperature	0
No change after treatment	2

[7] Knuckle swelling: To measure the knuckle swelling, jeweler's rings were used. In this method the rings were tried starting from the highest number and the number of the ring which passes through the knuckle easily with least resistance was noted. Any change in the number of ring after the treatment was recorded.

[8] Muscle wasting:

To have an objective view of muscle wasting, the circumference of arm, forearm, thigh and

leg were measured using a measuring tape both before and after the treatment. The circumferences were taken at the midpoint of these parts.

9) General symptoms of *Amavata* like *Agnimandya* (low digestive power), *Aruchi* (Anorexia), *Apaka* (Indigestion), *Angamarda* (Body ache), *Trisna* (thirsty), *Gaurava* (heaviness), *Alasya* (laziness), *Jvara* (fever), *Praseka* (salivation), *Utsahahani*,

Asyavairasya, *Daha* (burning sensation), *Bahumutrata* (Polyurea), *Kuksikathinya*, *Kuksisula* (Abdominal pain), *Nidraviparyaya*, *Chardi* (vomiting), *Bhrama* (confusion),

Murcha (syncope *Hrtgaurava*, *Vidvibandha* (constipation), *Amatisara*, *Antrakuja*, *Anaha*, *Daurbalya* (debility), *Klama* and *Siroruja* (headache) were scored as mentioned below :

Signs & symptoms	Score
Symptom observed before treatment	2
Mild relief after treatment	1
Complete relief after treatment	0
No improvement after treatment	2

FUNCTIONAL ASSESSMENT:

Following periodical functional tests were performed to assess the improvement of *Amavata* (RA) patients.

[1] **Walking time:** The patients were requested to walk a distance of 25 feet and the time thus taken was noted before and after the intervention.

[2] **Grip Strength:** The patient's capacity to squeeze an inflated ordinary sphygmomanometer cuff was recorded before

and after the intervention.

[3] **Foot pressure:** To evaluate the functional capacity of the legs, foot pressure was recorded by the ability of the patients to press a weighing machine.

[4] **Joint movement:** The range of movement of each affected joint was measured by using the goniometry both before and after the treatment.

[5] **General functional capacity:**

Signs & symptoms	Score
Complete ability to carry on all routine duties without handicap	0
Adequate normal activity despite slight difficulty in joint movement	1
Few activities are persisting but patient can take care of himself	2
Few activities are persisting and patient requires an attendant to take care of himself..	3
Patients is totally bed ridden	4

(III) INVESTIGATIONS:

[1] **Rheumatoid factor:** The serum of the patients was tested for rheumatoid factor as an aid to diagnosis and to assess the severity of the disease activity. The method adopted for this purpose was that of latex agglutination test.

[2] **Hematological Investigation:** The routine hematological examination of blood was carried out which included total leukocyte count, differential count, hemoglobin percent, packed cell volume and erythrocyte sedimentation rate. The method employed for the ESR rate was Wintrobe's corrected method.

[3] **Urine Examination:** Routine U/E was carried out to detect to exclude the UTI conditions like gonorrhoea etc.

[4] **Stool analysis:** Routine stool examination was undertaken to detect any presence of mucus ova, cyst etc. Investigations

[5] **Biochemical investigations:** In the biochemical investigations serum cholesterol and serum uric acid were carried out.

CLINICAL STUDY

Trial type

Prospective Open Clinical trial

Sample size:

Total 30 patients were registered fulfilling all the inclusion criteria.

Source of data

Patients from OPD and IPD of, GAMC & Hospital, Jammu fulfilling the criteria were selected for this study.

Method of preparation of drug:

The drug was selected from the Ayurvedic texts namely *Amritadi Churna*⁵. The combination having five drugs namely *Amrita (Tinospora cordifolia)* stem, *Shunthi (Zingiber officinalis)* rhizome, *Gokshura (Tribulus terrestris)* whole plant, *Mundi (Sphaeranthus indicus)* whole plant and *Varuna (Crataeva nurvala)* bark and leaves. All five drugs were taken in equal quantity. The drugs were grounded and a fine powder was prepared.

Posology:

The patients were advised to take 5 g of *Amritadi churna* B.D. with lukewarm water.

Duration of treatment - 45 days.

Overall Assessment Of The Therapy:

To assess the overall effect of the therapies, the criteria laid down by ARA was adopted.

OBSERVATIONS AND RESULTS

Statistical analysis was done for subjective and objective parameters before treatment, after treatment, and Follow up. Analysis was done by calculating Mean, Standard Deviation (S.D.), Standard Error (S.E), t-value and p-Value at 0.001 levels.

Table 1: Effect of *Amritadi churna* on cardinal features of *Amvata*

Signs & Symptoms	Mean		Mean %	S.D.	S.E.	't	'p'	Significance
	B.T.	A.T.						
<i>Sandhishula</i> (Joint pain)	2.51	0.86	65.73	0.36	0.09	16.72	<0.001	Highly significant
<i>Sandhishotha</i> (Swelling)	1.73	0.60	65.31	0.32	0.08	12.82	<0.001	Highly significant
<i>Stabdhatta</i> (Morning stiffness)	1.67	0.37	77.84	0.48	0.13	10.00	<0.001	Highly significant
<i>Sparshashatva</i> (tenderness)	2.39	0.80	66.52	0.42	0.11	13.95	<0.001	Highly significant
Warmth	0.30	0.00	100.0	0.71	0.19	1.37	>0.10	Insignificant
Redness	0.40	0.00	100.0	0.89	0.29	1.64	>0.10	Insignificant

Effect on General symptoms of *Amavata*

In this group 100% relief was observed in the symptoms like *Anaha*, *Antrakunjana*, *Hrillasa*, *Jvara*, *Jadya* and *Kukshishula*. 90% improvement was seen in *Asyavairsaya*, *Bhrama* and *Hritgaurava*, 87.5% in *Aruchi* and *Apaka*, 85% in *Alasya* 83.5% in *Angashunyata* and *Khanja*, 81.5% in *Asthibheda*, 80% in *Agnimandya* and *Daha*, 77.5% in *Gaurava*,

72.5% in *Angamarda*, 62.5% in *Dourbalaya*, 50% in *Angavaikalya* 40% in *Mamsakshaya* and *Vibandha* and no relief was observed in *Angashosha* and *Bahumutrata*.

Table 2: Effect of Amritadi churna on the circumference of the limbs in patients of Amavata

Circumference (in cms)	Mean		Mean %	S.D.	S.E.	't	'p'	Significance
	B.T.	A.T.						
Arm	25.00	25.19	0.76	0.25	0.06	2.85	>0.10	Insignificant
Fore arm	25.12	25.20	0.32	0.14	0.03	2.28	<0.05	Significant
Thigh	33.91	34.13	0.64	0.22	0.06	3.66	<0.01	Significant
Calf	31.03	31.13	0.32	0.07	0.02	2.76	<0.05	Significant

Table 3: Effect of Amritadi Churna on functional parameters in patients of Amavata

Functional Parameter	Mean		Mean %	S.D.	S.E.	't	'p'	Significance
	B.T.	A.T.						
Range of movement (in degrees)	88.33	91.54	11.18	7.56	1.29	4.28	<0.001	Highly significant
Foot Pressure in (Kgm)	22.42	24.85	10.83	1.65	0.44	5.50	<0.001	Highly significant
Hand grip (in mm of Hg)	87.57	98.78	12.80	12.31	3.29	3.40	<0.01	Highly significant
Walking time (in seconds)	27.42	22.85	16.66	2.87	0.76	5.95	<0.001	Highly significant
General Functional Capacity	2.3	1.2	47.8	0.83	0.27	4.02	<0.01	Significant

Table 4: Over all effect of Amritadi churna on patients of Amavata

Result	Number of patients	Percentage Improvement
Complete Remission	-	-
Major Improvement	16	57.14
Minor Improvement	10	35.71
Unimproved	02	7.14

DISCUSSION

Ama is the prime causative factor in pathogenesis of *Amavata* (RA). *Ama* (undigested food) is produced due to diminution of *Jatharagni* as well as *Dhatavagni*. In this combination five drugs (except *Gokshuru*) possess *Ushana Virya* (Hot) property and 4 are *Katu* (Bitter) and *Tikta* (Pungent) in *Rasa*. By virtue of these properties, the *Agni* rekindles alleviating *Mandagni*. This checks further production of *Ama* at root level. Moreover, these properties promote digestion of *Ama*. So the trial drug by virtue of its properties might have improved *Agni*, checked *Ama* production and helped in digestion of

existing *Ama*. The second causative factor was *Vata*. Though vitiation of all the *Doshas* is there but vitiation of *Vata* plays the leading role in *Amavata*. All the drugs of the combination are *Vata* and *Kapha Shamaka* as well. *Guduchi* is *Tridoshahara*, and four of them possess *Snigdha guna* and three *Madhura Rasa* (sweet essence) while the five are of *Ushana Virya* (hot) in nature. These all properties might have pacified *Vata* and brought it to normal position. In this combination *Gokshuru* & *Varuna* are *Shothaghna* (anti-inflammatory) and *Guduchi* & *Varuna* have *Vedana shamaka* (analgesic) property. So, the combination was effective to relieve the pain and swelling, which were the

chief complaints of the patients.

CONCLUSION

The trial drug in this study was a very good combination of *Shoolaghana* (analgesic), *Shothaghna* (anti-inflammatory) and *Amapachaka* (Ama eliminator) *Dravyas*. *Guduchi* and *Shunthi* with their *Rasayana* property, not only cured the disease but also improved the immunity (*Vyadhikshamatava*) of the patients. *Shunthi* due to its *Deepana*(appetizer) and *Pachana Guna* (digestive) not only improved the *Mandagni* but also helped in *Ama Pachana*. No untoward effect was seen in the patients during the treatment. On the basis of observations of the studies, internal administration of *Amritadi Churna* may be recommended for the management of *Amavata* along with other potent drugs and *Panchkarma* interventions for better results.

Acknowledgment: Nil.

Financial Support: Nil.

Conflict of Interest: Nil

REFERENCES

1. Y. N. Upadhyaya, Madhava Nidana by Madhavakara, Madhukosha Sanskrit Commentary by Shri Vijayarakshita & Shrikantha Datta and Vidyotani Hindi Commentary, Chapter 25, verse 1, Chaukhamba Sanskrit Sansthan, Varanasi, 8th edition, 2009, pp-678
2. Boon et al. Davidson's Principles and Practice of Medicine, edited by Brian R. Walker, Nicki R. Colledge, Stuart H. Ralston, Ian D. Penman, Chapter 25, Pg. 1090, Churchill Livingstone Elsevier, 20th Edition. 2004, Pg. 1090
3. Socken KL, Miller SA, Ernst E. Herbal medicines for the treatment of rheumatoid arthritis: a systematic review, *Rheumatology* (Oxford) 2003; 42(5):652-659
4. Tarique Zaman, Shikhar Agarwal, Rohini Handa. Complementary and alternative medicine use in rheumatoid arthritis: An audit of patients visiting a tertiary care centre, *Nat Med J India* 2007; 20:236-9
5. Verma, G. K., Shakya, N., Joshi, R. K., & Bhakuni, H. (2019). Conceptual Study On Effects Of Amrita Guggulu in the management of Amavata. *International Research Journal of Ayurveda & Yoga*, 2(2), 28-38.
6. Y. N. Upadhyaya, Madhava Nidana by Madhavakara, Madhukosha Sanskrit Commentary by Shri Vijayarakshita & Shrikantha Datta and Vidyotani Hindi Commentary, Chapter 25, verse 1, Chaukhamba Sanskrit Sansthan, Varanasi, 8th edition, 2009, pp-678
7. Pandit Jagannath Sharma Bajpeyee Chakrapani Datta, (Amavatarogadhikara Verse 14) Chakradatta, Kalyan Bombay, 1998 Pg. 306
8. Y. N. Upadhyaya, Madhava Nidana by Madhavakara, Madhukosha Sanskrit Commentary by Shri Vijayarakshita & Shrikantha Datta and Vidyotani Hindi Commentary, Chapter 25, verse 1, Chaukhamba Sanskrit Sansthan, Varanasi, 8th edition, 2009, pp-678
9. Dept. of AYUSH, Ministry of Health and Family Welfare, Govt. of India, The Ayurvedic Pharmacopoeia of India, Part I, Vol I.
10. Sudheendran, *Ankitha, Shajahan, M., & S, P. Anti-inflammatory activity of root and fruit of Gokshura (*Tribulus Terrestris* Linn) in albino rats. *International Journal of Ayurveda and Pharma Research*, (2017). 5[7]
11. Sudhanshu Kumar Meher, P K Mukherjee, S K Banarjee Chaudhury, Bani Marjit, B P Shaw. Experimental studies on the Renal Protective effect of *Gokshura* (*Tribulus terrestris* Linn) and *Varuna* (*Crataeva nurvala*

Buch-Ham). Research J. Pharmacology & Pharmacodynamics. 2016; 8(2): 75-82.

12. Goel, B., Pathak, N., Nim, D. K., Singh, S. K., Dixit, R. K., & Chaurasia, R. Clinical evaluation of analgesic activity of guduchi (*tinospora cordifolia*) using animal model. *Journal of clinical and diagnostic research : JCDR*, (2014). 8(8), HC01–HC4.

13. Khatun, Farjana & Howlader, Md. Amran & Apu, A.S. & Bachar, Sitesh & Qais, Nazmul. Evaluation of analgesic and antidiarrhoeal properties of the ethanolic extract of *Crataeva nurvala* Buch. Ham (Capparidaceae) leaves. *International Journal of Pharmaceutical Sciences Review and Research*. (2012). 12.5-8.

