# **Clinical Research**

# Clinical efficacy of *Rasona Pinda* in the management of *Amavata* (rheumatoid arthritis)

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### Abstract

In the present clinical study, 63 patients of *Amavata* were registered from the *Kayachikitsa* out patient department/indoor patient department (OPD/IPD) of Sir Sunder Lal Hospital (Indian Medicine Wing), IMS, BHU, Varanasi-5. In group I (*Rasona Pinda*), 27 patients completed the study of a total of 33 patients registered in the group (six patients dropped out mid–therapy). In group II (control group), 23 patients completed all three follow-ups out of 30 patients (there were seven dropouts in mid–therapy). In group I, complete remission in 29.6%, major improvement in 59.3% and minor improvement in change font so as to appear 11.1% were observed. In group II, complete remission in 13%, major improvement in 21.7%, minor improvement in 39.1% and unchanged in 26.9% of the patients were observed.

Key words: Amavata, Rheumatoid Arthritis, Agni, Ama, Rasona Pinda, Visual Analog Scale

# Introduction

Amavata (rheumatoid arthritis) is a common disorder, with varied clinical signs and symptoms related to multiple anatomical sites, both articular and extra-articular.<sup>[1]</sup> Presently, the non-steroidal anti-inflammatory drugs (NSAIDs) are the main stay in this condition; however, they have serious adverse effects and have limitations for long-term therapy.<sup>[2,3]</sup> The immunosuppressive drugs are reserved for selected cases, while the disease-modifying drugs like gold salts are costly and have a low benefit-risk ratio.[4] Hence, there is a need for drugs having good efficacy with low toxic profile in this debilitating disorder. A number of indigenous drugs have been claimed to be effective in the treatment of rheumatoid arthritis, but their claims have not been largely substantiated in well-controlled clinical trials. The formulation under investigation, Rasona Pinda,<sup>[5]</sup> is one such preparation that has been described in the ayurvedic text, Bhav Prakash, in Amavataadhikar.

*Amavata* (rheumatoid arthritis) is the prime disease that cripples a person and makes one unfit for an independent life, and about 60% of the patients become unfit to work 10 years after the onset of this disease. This disease is still a challenge to medical science. *Amavata*, as a disease, was first described in detail by Madhavakara in Madava Nidana.<sup>[5]</sup> The word *Amavata* is made up of a combination of two words, Ama and

Address for correspondence: Jai Prakash Singh Department of Kayachikitsa, Faculty of Ayurveda, Institute of Medical Sciences, B.H.U. Varanasi - 221 005, India. E-mail: drjp98@yahoo.co.in Vata.<sup>[6]</sup> The disease is mainly due to derangement of Agni, like Jatharagni, Dhatvagni and Bhutagni, etc., resulting in the production of Ama, and this Ama circulates in the whole body by the vitiated Vata and gets located in the Sandhis (joints), causing pain, stiffness and swelling over the joints.<sup>[7]</sup> According to modern medicine, it is strikingly similar to rheumatoid arthritis, which is a chronic autoimmune disease that causes inflammation and deformity of the joints. Rheumatoid arthritis can also cause inflammation of the tissues around the joints as well as other organs in the body. Autoimmune diseases are illnesses that occur when the body tissues are mistakenly attacked by ones own immune system. Other problems throughout the body (systemic problems) may also develop, including inflammation of blood vessels (vasculitis), development of bumps (called rheumatoid nodules) in various parts of the body, lung disease, blood disorders and weakening of the bones (osteoporosis).<sup>[8,17]</sup>

# **Materials and Methods**

The study was carried out at the Kayachikitsa OPD and IPD of Sir Sunder Lal Hospital, Institute of Medical Sciences, Banaras Hindu University, Varanasi. A total of 63 patients of *Amavata* were selected for the present study. Of the 63 patients, 13 patients were dropped out during the mid-trial period. The cases were randomly selected irrespective of their age, sex, occupation, socioeconomic status, *Prakriti* and *Agni*. Both acute and chronic phases of *Amavata* patients were taken for the study following the criteria of the diagnosis of rheumatoid arthritis according to the modern medical parameter and the clinical features of *Amavata* described in Madhava Nidana. These patients were randomly divided into two groups. Group I was treated with *Rasona Pinda* and group II received Cox-2 inhibitor Etoricoxib (Nucoxia).<sup>[22]</sup>

The study protocol was approved by the ethical committee of the university.

#### **Inclusion criteria**

- 1. Clinical feature of the disease according to modern practices and ayurveda.
- 2. ATI filling the criteria for diagnosis of rheumatoid arthritis approved by the ARA 2000 revision.
- 3. Patient between the ages of 16 and 65 years.

#### **Exclusion criteria**

- 1. Severe deformities.
- 2. Severe ankylosed joints.
- 3. Major complications.
- 4. Ankylosing spondylitis.
- 5. Rheumatic arthritis, septic arthritis, osteoarthritis and gouty arthritis.
- 6. Rheumatoid arthritis associated with other systemic disorders.

### **Follow-up Studies**

Every patient registered after fulfilling the inclusion criteria underwent assessment of symptoms and also assessment of the different components of the inflammatory index, walking time, grip power and pressing power. Twenty-seven patients of rheumatoid arthritis who also completed the three follow-ups in group I had received *Samshaman* (*Rasona Pinda*) therapy. Forty patients were selected based on the above clinical criteria and subjected to comprehensive, therapeutic, regimens as per the classical description.

#### Study groups

#### Treatment schedule for Group I

Rasona Pinda

50-60 mg/kg/bodyweight, three divided doses for 3 months and 1 month of follow-up

#### Treatment schedule for Group II

Tab. Etoriocoxib-90 (Nucoxia 90) one tab. OD.

#### Contents of drug and preparation<sup>[5]</sup>

Rasona (Allium sativum, 400 g), Tila (Sesamum indicum, one Kudava [160 g]), Hingu (Ferula asafoetida), Trikatu (Zingiber officinale, Piper nigrum, Piper longum), the two kshars, Pancha Lavanas (five salts), Satapushpa (Anthem sowa), Nisha (Curcuma longa), Kustha (Saussurea lappa), Pippalimula (Piper longum), Chitraka (Plumbago zeylanica), Ajamoda (Trachyspermum roxburghianum) and Dhanyaka (Coriandrum sativum) – each one pala (40 g) are all made into a fine powder, filled into a pot smeared inside with ghee adding Taila (oil) and Kanjika (rice gruel) half Prastha (320 g) each to this powder and the pot is kept undisturbed for 16 days.

## **Statistical Analysis**

The data obtained were processed on a computer with the help

of "SPSS" software package for the statistical analysis.

# **Clinical Assessment of the Disease**

#### Subjective criteria

1) Pain: Visual Analog Scale [Figure 1]<sup>23</sup>

	Symptom	Grading
2)	Tenderness	
	No Tenderness	0
	Says tender	1
	Patient winces	2
	Winces and withdraws	3
	Not allowed to be touched	4
3)	Stiffness	
	0–5 min	0
	5 min–2 h	1
	2–8 h	2
	8 h or more	3
4)	Redness	
	Absent	0
	Mild	1
	Moderate	2
	Severe	3
5)	Swelling	
	No swelling	0
	Felling of swelling + heaviness	1
	Apparent swelling	2
	Huge (synovial effusion) swelling	3

#### Criteria for assessment of overall effects

For the gross assessment of the result obtained with the clinical trial, the response of the treatment was determined in terms of:

#### Subjective improvement

Patients were specifically asked about their increased felling of well being and improvement of general function capacity after the treatment.

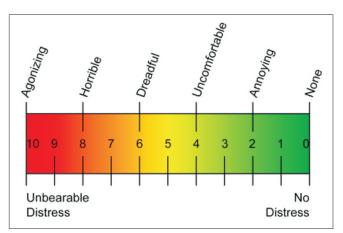


Figure 1: Visual analogue scale take this figure on previous page 281 after pain in subjective criteria

#### Clinical improvement

Reduction in pain, swelling, stiffness, tenderness, deformity and general function capacity.

#### **Functional assessment**

Decrease of walking time and increase of pressing power and grip power.

#### Hematological and biochemical assessment

Hemoglobin %, Total leucocyte count, Differential leucocyte count and Erythrocyte sedimentation rate and certain immunological examinations like serum rheumatoid factor and C-reactive protein value were recorded before and after the treatment in registered cases to evaluate the nature and extent of change in relation to course of disease *Amavata* (RA). Liver function test, serum creatinine and blood urea value were recorded before and after the treatment in registered cases to evaluate the safety profile of the drug.

# **Observation and Results**

The maximum number of patients, i.e. 38.4%, belong to the age group of 41-50 years. The majority of the patients were female (80%), 72% of the patients were Hindu, 52% were housewives and 40% belonged to the poor class. The maximum number of patients were of *Vata-Kapha prakriti* 40%, and 76% of the patients had a negative family history. The results on symptoms of *Amavata* are shown in Tables 1-11.

# **Discussion**

A significant reduction in the time duration of morning stiffness, joint pain score, swelling, tenderness, rheumatoid arthritis titer, CRP and the erythrocyte sedimentation rate was observed; however, the grip strength and foot pressure were significantly increased. A significant reduction status of *Ama* in

Groups	Grade	1	lumber of patie	ents in each follo	w-up	Within-group comparison
		вт	AT1	AT2	AT3	Friedman $\chi^2$ test
l (n = 27)	0	0	0	1 (3.7)	10 (37)	$\chi^{2} = 70$
	1	0	3 (11.1)	13 (48.1)	15 (55.6)	<i>P</i> < 0.0001
	2	5 (18.5)	12 (44.4)	9 (33.3)	2 (7.4)	
	3	6 (22.2)	7 (25.9)	4 (14.8)	0	
	4		5 (18.5)	0	0	
	5	6 (22.2)	0	0	0	
	6	4 (14.8)	0	0	0	
	7	3 (11.1)	0	0	0	
II ( <i>n</i> = 23)	0	0	0	0	2 (8.7)	$\chi^2 = 27$
	1	0	0	2	8 (34.8)	<i>P</i> < 0.0001
	2	4 (17.4)	7 (30.4)	8	8 (34.8)	
	3	4 (17.4)	9 (39.1)	9	5 (21.7)	
	4	6 (26.1)	6 (26.0)	4	0	
	5	5 (21.7)	1 (4.30)	0	0	
	6	3 (13.0)	0	0	0	
	7	1 (4.3)	0	0	0	
Between-group co	omparison	$\chi^{2} = 5$	$\chi^2 = 22.7$	χ², <i>P</i> < 0.0001	χ², <i>P</i> < 0.0001	
Pearson χ <sup>2</sup> test		<i>P</i> > 0.05	<i>P</i> < 0.0001			

Figures in parenthesis are in percentage

Table 2: Statistical change in tenderness in 50 patients of Amavata (rheumatoid arthritis)							
Group	Grade	Nur	nber of patient	Within-group comparison			
		BT	AT1	AT2	AT3	Friedman $\chi^2$ test	
l ( <i>n</i> = 27)	0	0 (0)	1 (3.7)	1 (3.7)	9 (33.3)	$\chi^2 = 45.6$	
	1	3 (11.1)	5 (18.5)	18 (66.7)	15 (55.6)	<i>P</i> < 0.001	
	2	5 (18.5)	13 (48.1)	7 (25.9)	3 (11.1)		
	3	11 (40.7)	8 (29.6)	1 (3.7)	0 (0.0)		
	4	8 (29.6)	0 (0.0)				
II ( <i>n</i> = 23)	0	0 (0.0)	0 (0.0)	0 (0.0)	2 (8.7)	$\chi^2 = 15.6$	
· · ·	1	6 (26.1)	7 (30.4)	6 (26.1)	13 (56.5)	$\tilde{P} < 0.005$	
	2	9 (39.1)	7 (30.4)	12 (52.2)	8 (34.8)		
	3	6 (26.1)	8 (34.8)	5 (21.7)	. ,		
	4	2 (8.7)	1 (4.3)	· · · ·			
Between-group c	omparison	$\chi^{2} = 13$	$\chi^2 = 36$	$\chi^{2} = 35$	$\chi^2 = 20.06$		
Pearson $\chi^2$ test		<i>P</i> > 0.005	<i>P</i> < 0.005	<i>P</i> < 0.001	<i>P</i> < 0.005		

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Group	Grade	Nu	umber of patient	Within-group comparison		
		BT	AT1	AT2	AT3	Friedman $\chi^2$ test
l ( <i>n</i> = 27)	0	1 (3.7)	4 (14.8)	16 (59.3)	18 (66.7)	$\chi^2 = 34.8$
, , , , , , , , , , , , , , , , , , ,	1	12 (44.4)	18 (66.7)	11 (40.7)	9 (33.3)	<i>P</i> < 0.001
	2	10 (37.0)	5 (18.5)	0 (0.0)	0 (0.0)	
	3	4 (14.8)	0 (0.0)	0 (0.0)	0 (0.0)	
II ( <i>n</i> = 23)	0	0 (0.0)	0 (0.0)	1 (4.3)	5 (21.7)	$\chi^2 = 19.8$
,	1	9 (39.1)	9 (39.1)	8 (34.8)	16 (69.6)	$\tilde{P} < 0.005$
	2	9 (39.1)	12 (52.2)	12 (52.2)	2 (8.7)	
	3	5 (21.7)	2 (8.7)	2 (8.7)	0 (0.0)	
Between-group	comparison	$\chi^2 = 3.7$	$\chi^2 = 17.7$	$\chi^2 = 44.2$	$\chi^2 = 18.4$	
Pearson $\chi^2$ test		$\ddot{P} > 0.05$	<i>P</i> < 0.05	<i>P</i> < 0.001	<i>P</i> < 0.005	

# Table 3: Statistical change in stiffness in 50 patients of Amavata (rheumatoid arthritis)

Figures in parenthesis are in percentage

Group	Grade	Nur	mber of patients	Within-group comparison		
		BT	AT1	AT2	AT3	Friedman $\chi^2$ test
l (n = 27)	0	5 (18.5)	16 (59.3)	18 (66.7)	24 (88.9)	$\chi^2 = 20.8$
	1	16 (59.3)	11 (40.7)	9 (33.3)	3 (11.1)	<i>P</i> < 0.001
	2	6 (22.2)	0 (0.0)	0 (0.0)	0 (0.0)	
	3	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	
II ( <i>n</i> = 23)	0	5 (21.7)	2 (8.7)	6 (26.1)	10 (41.7)	$\chi^2 = 10.8$
. ,	1	11 (47.8)	8 (78.3)	15 (65.2)	12 (50)	<i>P</i> < 0.05
	2	7 (30.4)	13 (54.2)	2 (8.7)	1 (4.2)	
	3	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	

Figures in parenthesis are in percentage

Group	Grade	Nur	nber of patient	Within-group comparison		
		вт	AT1	AT2	AT3	Friedman χ <sup>2</sup> test
l ( <i>n</i> = 27)	0	0 (0.0)	1 (3.7)	1 (3.7)	11 (40.7)	$\chi^2 = 43.9$
( )	1	4 (14.8)	5 (18.5)	18 (66.7)	14 (51.9)	<i>P</i> < 0.001
	2	5 (15.5)	13 (48.1)	8 (29.6)	2 (7.4)	
	3	18 (66.7)	8 (29.6)	Ò (0)	( )	
II ( <i>n</i> = 23)	0	0 (0.0)	7 (30.4)	0 (Ò.Ó)	2 (8.7)	$\chi^2 = 11.2$
( )	1	6 (26.1)	7 (30.4)	5 (21.7)	13 (56.5)	<i>P</i> < 0.05
	2	9 (39.1)	9 (39.1)	13 (56.5)	8 (34.8)	
	3	8 (34.8)	0 (0.0)	5 (21.7)	0 (0.0)	
Between-group	comparison	$\chi^2 = 15.9$	$\chi^2 = 34$	$\chi^2 = 41$	$\chi^2 = 22$	
Pearson $\chi^2$ test		<i>P</i> > 0.05	<i>P</i> < 0.05	<i>P</i> < 0.001	<i>P</i> < 0.001	

Figures in parenthesis are in percentage

Group	Grade	Nur	mber of Patient	v-up	Within-group comparison	
		вт	AT1	AT2	AT3	Friedman $\chi^2$ test
l (n = 27)	0	0 (0.0)	7 (25.9)	13 (48.1)	17 (63)	$\chi^{2} = 45$
	1	7 (25.9)	13 (48.1)	11 (11.0)	10 (37)	<i>P</i> < 0.001
	2	10 (37)	6 (22.2)	3 (11.1)	0 (Ò.O)	
	3	7 (25.9)	1 (3.7)	0 (0.0)	0 (0.0)	
	4	3 (11.1)	0 (0.0)	0 (0.0)	0 (0.0)	
II ( <i>n</i> = 23)	0	0`(0.0)	0 (0.0)	0`(0)´	1 (4.3)	$\chi^2 = 7.2$
	1	0 (0.0)	1 (4.3)	2 (8.7)	1 (4.3)	$\tilde{P} > 0.05$
	2	8 (34.8)	8 (34.8)	8 (34.8)	13(54.2)	
	3	9 (39.1)	12 (52.2)	13 (56.5)	8 (33.3)	
	4	6 (26.1)	2 (8.7)	0 (0.0)	0 (0.0)	
Between-group	comparison	$\chi^2 = 12.4$	$\chi^2 = 55$	$\chi^{2} = 90$	$\chi^2 = 74$	
Pearson $\chi^2$ test		<i>P</i> > 0.05	<i>P</i> < 0.001	<i>P</i> < 0.001	<i>P</i> < 0.001	

Figures in parenthesis are in percentage

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Table 7: Me						
Group	Site	ВТ	AT1	AT2	AT3	Within-group comparison; paired " <i>ť</i> "-test
l ( <i>n</i> = 27)	R	54.8 ± 21.8	81.0 ± 19.0	83.5 ± 19.8	95.5 ± 15.3	t = 8.5, <i>P</i> < 0.001
. ,	L	51.89 ± 17.7	69.89 ± 16.8	80.6 ± 14.97	94.59 ± 11.0	t = 12.2, <i>P</i> < 0.001
II ( <i>n</i> = 23)	R	52.2 ± 18.6	80.1 ± 16.1	80.74 ± 16.5	84.9 ± 13.1	t = 7.3, <i>P</i> < 0.001
	L	45.35 ± 15.0	68.0 ± 17.9	78.8 ± 16.1	85.0 ± 14.7	t = 9.8, <i>P</i> < 0.001

Table 8: Mean change in foot pressure in 50 patients of Amavata (rheumatoid arthritis)

Groups	Site	Foot pressure						
		BT	AT1	AT2	AT3	Within-group comparison, paired " <i>t</i> "-test		
l ( <i>n</i> = 27)	R	16.48 ± 6.65	19.37 ± 6.92	19.70 ± 6.79	$20.3 \pm 6.94$	t = 6.7, <i>P</i> < 0.001		
	L	15.78 ± 5.54	18.6 ± 6.10	19.52 ± 6.55	$20.30 \pm 6.6$	t = 6.7, <i>P</i> < 0.001		
II ( <i>n</i> = 23)	R	18.78 ± 8.30	19.87 ± 6.86	20.26 ± 6.80	21.17 ± 7.04	t = 3.15, <i>P</i> < 0.001		
	L	17.61 ± 6.75	$20.09 \pm 6.95$	$20.52 \pm 6.56$	$20.48 \pm 6.86$	t = 3.6, <i>P</i> < 0.001		

Table 9: Mean change in biochemical parameters in 50 patients of *Amavata* (rheumatoid arthritis)

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Group	Components	ВТ	AT	AT–BT	Within-group comparison, paired " <i>ť</i> "-test
l ( <i>n</i> = 27)	R.A. titer	48.89 ± 13.6	29.25 ± 10.45	19.5 ± 4.58	t = 12.5, <i>P</i> < 0.001
	C.R.P. titer	$5.56 \pm 2.86$	3.42 ± 1.2	2.13 ± 1.6	t = 9.9, <i>P</i> < 0.001
	Hb	12.2 ± 1.98	12.6 ± 3.2	0.4 ± 1.3	t = 1.2, <i>P</i> > 0.05
	E.S.R.	$56.4 \pm 9.5$	26.5 ± 12.2	$29.8 \pm 8.56$	t = 12.2, <i>P</i> < 0.001
II ( <i>n</i> = 23)	R.A. titer	$54.5 \pm 8.6$	40.4 ± 10.56	14.1 ± 4.82	t = 9.2, <i>P</i> < 0.001
	C.R.P. titer	5.12 ± 2.64	$4.06 \pm 2.34$	1.06 ± 1.03	t = 6.8, <i>P</i> < 0.05
	Hb%	11.8 ± 3.12	11.2 ± 2.66	0.56 ± 1.13	t = 0.96, <i>P</i> > 0.05
	E.S.R.	48.8 ± 10.8	36.8 ± 12.5	12 ± 3.22	t = 12.6, <i>P</i> < 0.001

Table 10 : Comparison between the groups by	
unpaired 't' test (biochemical parameters)	

Variables Between-group compar unpaired "t"-test	
	Group I vs. group II
ESR	t = 1.02, <i>P</i> > 0.05
CRP titer	t = 2.81, <i>P</i> < 0.05
RA titer	t = 4.2, <i>P</i> < 0.05
Hb%	t = 0.89, <i>P</i> > 0.05

Group I but no reduction in Group II was noticed, which was statistically significant. On the basis of the status of Ama, we can state that *Rasona Pinda* is a breakthrough in the pathology (*samprapti vighhtan*) of *Amavata* but Tab Nucxia is not such.

Treatment with *Rasona Pinda* produced seroconversion of the rheumatoid arthritis factor in 13 patients at the end of the 3-month period compared with no effect in the control group. The seroconversion was achieved during therapy with *Rasona Pinda*. The drug treatment group had one patient complaining of nausea and three patients with complaints of loose stool. However, these side-effects did not necessitate discontinuation of drug therapy.

Safety profile of the drug, serum bilirubin, SGOT, SGPT,

alkaline phosphate, serum creatinine and blood urea within the group were not significant and, in group II, serum bilirubin, alkaline phosphate, serum creatinine and blood urea are not significant, but SGOT and SGPT show a highly significant increase. Between the groups SGOT and SGPT were significant, indicating that *Rasona Pinda* is very safe in *Amavata* patients.

# Action of drug

Rasona is a well-known Vata and Kaphahara. It is also proved to have an anti-inflammatory effect.<sup>[11]</sup> A concentrate having allicin and allinase alkaloid proved effective in treating rheumatoid arthritis.<sup>[11,12,14]</sup> Rasona is a *rasayana*<sup>[9]</sup> according to *Bhavprakash* and *Madanpal* and thus it is very useful for treating the disease and also for maintaining the health of the patients due to the chronic nature of the disease.<sup>[15]</sup> It also diminished *Agni* due to its own nature. Being a *Rasayana*, this drug improved the quality of *Dhatu* production and also brought the *Dushti* of *Dhatus* (*Dushyas*) to a normal state. As a consequence of these, *Rasayana* drugs improved the *Vyadhikshamatva*<sup>[9]</sup> in the patients.

*Trikatu*, with its *Ushna Virya*, helps in digestion of *Ama* and improves the *Agni*. Trikatu is also proved to be beneficial in terms of rheumatic and musculoskelatal disorders, providing relief from pain and swelling.<sup>[10,11,13]</sup>

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Group	Stage	Number of Patients in each follow-up		
		AT1	AT2	AT3
Ι	Complete remission	0 (0)	1 (3.7)	8 (29.6)
	Major improvement	5 (18.5)	13 (48.1)	16 (59.3)
	Moderate improvement	12 (44.4)	9 (33.3)	3 (11.1)
	Minor improvement	7 (25.9)	4 (14.8)	0 (0)
	Unchanged	3 (11.1)	0 (0)	0 (0)
M M M	Complete remission	0 (0)	0 (0)	1 (4.3)
	Major improvement	6 (26.0)	8 (34.8)	5 (21.7)
	Moderate improvement	7 (30.4)	9 (39.1)	8 (34.8)
	Minor improvement	9 (39.1)	4 (17.4)	4 (17.4)
	Unchanged	1 (4.3)	2 (8.7)	5 (21.7)

#### Table 11: Statistical change in total effect of therapy in 50 patients of Amavata (rheumatoid arthritis)

Figures in parenthesis are in percentage

*Curcuma longa*, commonly known as Turmeric, has antiseptic and anti-inflammatory properties. Curcumin, an alkaloid isolated from this plant, has anti-inflammatory, anti-arthritic and antirheumatic properties.<sup>[11,12,14]</sup> It also has beneficial effects on platelet aggregation and vascular prostaglandin synthesis. The activation of the adrenohypophysial axis may be responsible for inhibition of late arthritic changes. Activated proteases that are responsible for the acute inflammatory process are inhibited by the volatile oil of the plant, which could add to its anti-arthritic activity.<sup>[19-21]</sup>

#### Probable mode of action of Rasona Pinda

#### Effect on joint pain

Three months of treatment provided significant relief in the joint pain score in both groups. This relief in pain in group I may be due to the decreased  $PGE_2$  release inside the joint space. This reduction in prostaglandin may be due to the prostaglandin synthesis inhibition action of *Rasona Pinda*. This reduction in joint pain may be due to the *Ama Pachana* and *Vata Shamana* attained by the *Ushna* and *Vedanasthapaka* properties of the drugs used.

#### Effect on joint swelling

There was a significant reduction in the joint swelling score in both groups after 3 months of treatment. This relief in the swelling in group I may be due to the inhibition of interleukin (IL)-1, IL-6 and tumor necrosis factor- $\alpha$ .

#### Effect on the ESR levels

There was a significant reduction in the ESR level in all groups. This may be due to a reduction of the IL-6 activity leading to the reduced synthesis of acute-phase proteins. *Ama Pachana* leads to the reduction in *apakva annarasa*, thereby correcting the proper synthesis of different substances needed for the body. Thus, reduction in the ESR level may be due to the proper *Ama Pachana* attained by the treatment.

# Conclusion

Based on the present study, it can be concluded that the *Rasona Pinda* group has better improvement in most of the symptoms, and it also decreased the ESR, CRP and RA titer. *Rasona Pinda* is extremely effective in reducing pain, swelling, tenderness and stiffness, which were the most prominent symptoms of the patients. The patients with a chronicity of more than 3 years did not show much improvement. The trial drug in this study seems to be a very good combination of Vedanashamak, Rasayana, Agnivardhak, Shothaghna and Amapachak Dravyas. The only unwanted effect of the drug noticed during the trial was loose motion in some patients.

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# हिन्दी सारांश

# आमवात में रसोन पिण्ड के चिकित्सकीय प्रभाव का अध्ययन

जयप्रकाश सिंह मीरा अन्तिवाल अमित वैभव जे.एस.त्रिपाठी एस.के.तिवारी

आमवात जिसे आधुनिक विज्ञान के अनुसार र्यूमेटाइड आर्थ्राइटिस भी कहते हैं। एक अत्यन्त ही जनसामान्य व्याधि है। विभिन्न प्रकार के लक्षण एवं रूप से युक्त यह व्याधि शरीर के विभिन्न संधियों, सन्ध्यातिरेक स्थानों को अपना आश्रय बनाती हुयी व्यक्ति को अनेक प्रकार से कष्ट देती है। आधुनिक विज्ञान के पास इस व्याधि की चिकित्सा के लिए दर्द निवारक दवाओं को छोड़ अन्य कुछ विशेष व्यवस्था नहीं है जिसके प्रत्यक्ष एवं परोक्ष रूप में शरीर पर अनेक हानिकारक प्रभाव भी पड़ते हैं। इस के अतिरिक्त कुछ व्याधिक्षमत्व अवसादक एवं व्याधि परिवर्तनीय औषधियाँ भी हैं जो कि कुछ विशेष अवस्थाओं में दी जाती हैं इनके भी हानिकारक दुष्प्रभावों से चिकित्सक जगत भयभीत रहता है। अतः आधुनिक चिकित्सा विज्ञान इस व्याधि के सामने असहाय प्रतीत होता है। इसके ठीक विपरीत आयुर्वेद परम्परा में इस व्याधि (जिसकोआमवात की संज्ञा दी जाती है) के विषय में अनेकों शास्त्रीय औषधियां बतायी गयी हैं जो कि इस व्याधि का समूल नाश करती हैं जिसमें रसोन पिण्ड आमवात शामक औषधि अपना एक विशिष्ट स्थान रखती है जिसका वर्णन भाव प्रकाश के आमवाताधिकार में किया गया है। इस शोध कार्य में कुल ६ ३ रोगियों को दो समूहों में पंजीकृत किया गया। रसोन पिण्ड चिकित्सा से आमवात में उत्साहवर्धक परिणाम पाये गये।