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Research Article

RASONAPINDA: A CLINICAL EVALUATION IN MANAGEMENT OF *AMAVATA* (RHEUMATOID ARTHRITIS)

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ABSTRACT

Amavata is a very common disorder affecting a much larger population. The disease closely resembles Rheumatoid Arthritis on the basis of clinical manifestations. In the present study, we have considered Rheumatoid Arthritis parallel to *Amavata* and studied the effect of *Rasona Pinda*, a traditional *Ayurvedic* drug. 40 patients of *Amavata* were selected and randomly divided into two groups A and B. Group A was trial group and Group B was control group. Group A received *Rasona Pinda* and group B as control group received Indomethacin orally, duration of treatment for both the groups was 45 days with a follow up on every 15th day. The drug was selected as it is described in *Chakradatta Amavatadhikara* and also owing to its properties. Results were assessed according to a specially prepared grading system for pain, swelling, stiffness, tenderness, general functional capacity, walking time, grip power, pressing power, etc and changes observed in laboratory profile. Significant improvement was seen in symptoms in group A, and on comparing the results in the two groups it was found that the difference was highly significant with improvement in almost all the symptoms in group A. and also, it was found that the drug was free of side effects and showed improvement in the general health of the patient. The study suggests that *Rasona Pinda* can be a reliable alternative in the management of *Amavata*.

KEYWORDS: *Amavata,* Indomethacin, *Rasona Pinda,* Rheumatoid Arthritis.

INTRODUCTION

Amavata is one of the commonest disorders caused by the impairment of *Agni*(digestive power), formation of *Ama* (undigested elements in body) and vitiation of *Vata*[1] which initially creates difficulty in performing daily works which goes on increasing and further leads to deterioration in the form of physical deformities as well as mental frustration.

Amavata on the basis of clinical appearance can be taken parallel to Rheumatoid Arthritis. It is a commonest autoimmune inflammatory diseases of chronic multiple organ systems and of unknown etiology. Characteristic feature is persistent inflammatory synovitis, usually involving peripheral joints in a symmetric distribution. If left untreated, leads to joint destruction, which is responsible for the deformity and disability seen in this disease.

Allopathic drugs are insufficient for complete eradication of disease. Moreover, treatment according to modern science is expensive, prolonged, creates many side effects and affects the quality of individuals to larger extent. Rheumatoid *Arthritis* is the 42nd leading cause of increased no of YLDs (Years lived with Disability) at global level[2]. Its wide prevalence, chronicity, morbidity, crippling nature & lack of effective drugs attract to search for suitable remedy of disease *Amavata*.

Thus the study was designed to find out a drug or a management schedule that is effective in the management of *Amavata* vis-à-vis Rheumatoid Arthritis, is easy to be administered, is free of side effects and takes lesser duration in decreasing the disease progression and thus avoids landing into complications.

The formulation under trial in this study, *Rasona Pinda* is described in the *Ayurvedic* Text in *Chakradatta Amavataadhikara*. For comparison, Indomethacin is taken as standard drug and is administered to the control group.

MATERIAL AND METHODS

Preparation of drug: The drug was prepared according to method of preparation as described in Chakradatta[3]. The quantity of ingredients in metric measurements was decided according to Ayurvedic Formulary of India.

Table 1: Ingredients of *Rasona Pinda*

S.No.	Name	Botanical Name	Quantity
1.	*Rasona*	*Allium sativum* L.	100 *Pala* (4.8kg)
2.	*Tila*	*Sesamum indicum* L.	1 *Kudava* (192gm)
3.	*Hingu*	*Ferula narthex* Boiss.	1 *Pala* (48gm)
4.	*Trikatu*	*Zingiber officinale* Rosc. *Piper nigrum* L. *Piper longum* L.	1 *Pala* (48gm)
5.	*Ksharadvaya*	-	1 *Pala* (48gm)
6.	*Panchalavana*	-	1 *Pala* (48gm)
7.	*Shatapushpa*	*Anethum sowa Kurz.*	1 *Pala* (48gm)
8.	*Kushtha*	*Saussurea lappa* C.B.CL.	1 *Pala* (48gm)
9.	*Pippalimula*	*Piper longum* L.	1 *Pala* (48gm)
10.	*Chitraka*	*Plumbago zeylanica* L.	1 *Pala* (48gm)
11.	*Ajamoda*	*Apium leptophyllum* F.Muell. Ex.Benth.	1 *Pala* (48gm)
12.	*Yawani*	*Trachyspermum ammi* (L.) Sprague	1 *Pala* (48gm)
13.	*Dhanyaka*	*Coriandrum sativum* L.	1 *Pala* (48gm)
14.	*Tilataila*	*Sesamum indicum* L. oil	1 *Manika* (384 ml)
15.	*Kanji*	sour gruel	½ *Prastha* (384 ml)

Patient selection: 40 patients of Amavata were registered from Kayachikitsa OPD, Sir Sundarlal Hospital, BHU, Varanasi. The case selection was random regardless of age, sex, occupation and socio-economic conditions. Both acute and chronic phase of Amavata patients were taken for the study, following the 1987 revised criteria by American college of Rheumatology for diagnosis of Rheumatoid arthritis[4] and the clinical features of *Amavata* described in *Madhava Nidana*.

Table 2: The 1987 Revised Criteria by American College of Rheumatology for Diagnosis of Rheumatoid Arthritis

1	Morning stiffness	Morning stiffness in and around the joints, lasting at least 1 hour before maximal improvement. At least 3 joints.
2	Arthritis of 3 or more joint areas	Areas simultaneously have had soft tissue swelling or fluid (not bony overgrowth alone) observed by a physician. The 14 possible areas are right or left PIP, MCP, wrist, elbow, knee, ankle, and MTP joints.
3	Arthritis of hand joints	At least 1 area swollen (as defined above) in a wrist, MCP or PIP joint.
4	Symmetric arthritis	Simultaneous involvement of the same joint areas [as defined in (2)]on both sides of the body (bilateral involvement of PIPs, MCPs, or MTPs is acceptable without absolute symmetry).
5	Rheumatoid nodules	Subcutaneous nodules, over bony prominences, or extensor in juxta articular regions, observed by a physician.
6	Serum rheumatoid factor	Demonstration of abnormal amounts of serum rheumatoid factor or any method for which the result has been positive in <5% of normal control subjects.
7	Radiographic changes	Radiographic changes typical of rheumatoid arthritis on posteroanterior hand and wrist radiographs, which must include erosions or unequivocal bony decalcification localized in or most marked adjacent to the involved joints (osteoarthritis changes alone do not qualify).
*for classification purposes, a patient shall be said to have rheumatoid arthritis is he/she has satisfied at least four of these seven criteria. Criteria 1 through 4 must have been present for at least six weeks.		

The selected patients were subjected to clinical examination laboratory investigations after registration and after completion of treatment.

INCLUSION CRITERIA

1. The patients of Rheumatoid Arthritis with mild, moderate and severe degree of presentation were included in the present study.
2. Both cases of Seropositive and Seronegative were included in present study.
3. The patients included will be within age group of 15- 65 yrs.

EXCLUSION CRITERIA

1. The patients having severe degree of deformities.
2. The patients having severe ankylosed joints.
3. The patients with major complications were also excluded
4. The patients on corticosteroid therapy.
5. Patient of rheumatic arthritis, septic arthritis osteoarthritis and gouty arthritis or any other type of arthritis.

ASSESSMENT OF DISEASE

A. Assessment of functional status

1. Walking time: The walking time taken by the patients for a fixed distance was observed and recorded to know the time consumed to cross the fixed distance. This test provides functional status of hip, knee, ankle and smaller joints of the lower limbs. In the present study a distance of 25 ft was fixed for the purpose, and grading was given.
2. Grip power and pressing power: The functional status of wrist joints, metacarpophalangeal joints and interphalangeal joints was assessed by measuring of pressing power and grip power. For this test (Grip power), patients were asked to grip the inflated cuff of a sphygmomanometer by both palms and fingers separately and the rise of manometer readings was recorded in mmHg of mercury at the time of registration and follow ups of the patients of *Amavata.* For measuring the pressing power the cuff of sphygmomanometer was inflated at the basal value and was placed on the table. The patient sitting on front of the table on a chair was told to press the inflated cuff by both hands separately. While pressing the cuff pressure should be applied from all the involved joints of upper limbs and the extent to which the patient can press the cuff is observed in terms of the rise in mercury column in mm of Hg. This is done at the time of registration and follow ups. In both the tests the cuff of sphygmomanometer was inflated up to basal value of 30 mm of Hg. Grading was done.

B. Clinical assessment

Clinical assessment of the disease, its severity, extent and grades of inflammation were objectively done in terms of pain, swelling, tenderness, deformity, general function capacity and stiffness of the joints. The relative extent of all these criteria was recorded according to the rating scales in each patient at the initial stage and at subsequent follow ups. These are measured by simple count of clinically active joints.

Table 3: Grading System Used for Assessment of Disease

WALKING TIME INDEX 0 : 15 - 20 sec 1 : 21- 30 sec 2 : 31- 40 sec 3 : > 40 sec
GRIP POWER AND PRESSING POWER 0 : 200 mmHg 1 : 198 – 120 mmHg 2 : 118 – 70 mmHg 3 : <70 mmHg
PAIN 0 : No pain 1 : Pain complaints but tolerable 2 : Pain complaints difficult to tolerate and taking analgesic once a day 3 : Intolerable pain and taking analgesics two times a day 4 : Intolerable pain and taking analgesics more than two times in a day
SWELLING 0 : No swelling 1 : Feeling of swelling + Heaviness

2 : Apparent swelling 3 : Huge (Synovial effusion) swelling
STIFFNESS 0 : No stiffness 1 : 20% limitation of normal range of mobility 2 : 50% limitation of mobility 3 : 75% or more reduction of normal range of movement
GENERAL FUNCTIONAL CAPACITY 0 : Complete ability to carry on all routine duties 1 : Frequent normal activity despite slight difficulty in joint movement 2 : Few activities are persisting but patient can take care of him or herself 3 : Few activities are persisting patient requires an attendant to take care of him/herself 4 : Patient is totally bed ridden
TENDERNESS 0 : No tenderness 1 : Mild tenderness 2 : Moderate tenderness 3 : Severe tenderness

C. Laboratory profile

For the purpose of diagnosis of a disease its assessment, severity, clinical improvement and to assess the possible side effects, certain routine and specific investigations were performed in every patients viz.

1. Hematological investigations: Total leucocytes count, Differential leucocytes count, Hemoglobin, Erythrocyte Sedimentation Rate
2. Biochemical: C-Reactive Protein (C-RP titre), Rheumatoid factor (RA factor)

TREATMENT SCHEDULE

The patients from group A were given *Rasona Pinda* 1g TDS orally with lukewarm water and patients from group B(control group) were given Indomethacin 75 mg OD orally. For both groups, the treatment was continued for 45 days and follow up was done on every 15th day, that is on 15th, 31st and 45th day.

STATISTICAL ANALYSIS

The result was assessed on the basis of relief in symptoms and serological tests.

- Comparison between two groups (Intergroup Comparison) was done using Mann Whitney test.
- Intra group comparison was done using Friedman's test.
- Comparison of Mean was done by one way Annova test, Wilcoxan's signed rank test, paired t test and Mann Whitney test as per requirement.

The data was assessed for its statistical significance.

OBSERVATION AND RESULTS

Following observations and results were obtained.

- In the present study, total 40 patients were registered out of which 35 patients completed the treatment. (GroupA-18pts, GroupB-17pts.)
- Maximum patients were married & females of age group between 36-45 years which were housewives. Maximum patients were of middle class.
- Maximum patients were of Urban origin showing life style modification causing more no. of diseased patient in urban areas.
- Maximum patients dietary habit was of mixed type. Maximum patients were having *Kapha-Vata Prakriti* with *Avara Agnibala* and altered bowel habits.
- Maximum number of patients had Negative family history with chronicity less than 2 years.
- Maximum patients were R.A. positive. Though the presence of Rheumatoid factor does not establish the diagnosis of Rheumatoid arthritis. But it can be of prognostic importance, because patient with high titer have more severe and progressive disease with extra articular manifestations.
- Pain, swelling, tenderness and stiffness were found significantly reduced in Group A. Appetite was increased significantly in Group A, in comparison to Group B, rather it was deranged in some of the patients in Group B.

EFFECT OF THERAPY

On the basis of symptoms and examinations on third follow up, the effect of therapy was assessed. Maximum effect with

significant relief was observed in- tenderness (50% with no tenderness) and General functional capacity (50% with normal GFC). Significant reduction in severity of symptoms was found in pain (55.6% with mild pain), swelling (50% with mild swelling), stiffness (66.7% with mild stiffness) at the end of therapy. Improvement was observed on examination as walking time of 61.1% patients was decreased, grip power- right hand (44.4% Grade1), left hand (33.3% each in Grade 1 and 2) and press power-right hand (44.4% Grade), left hand (33.3% each in Grade 1 and 2) at the third follow up.

Table 4: Effect of Therapy on Tenderness

Group	Grading	Tenderness								Intragroup comparison (Friedman's test)
		BT		Follow up 1		Follow up 2		Follow up 3		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	1	5.6	1	5.6	6	33.3	9	50	χ^2 = 41.797 p = 0.000 (p<0.001 =H.S.)
	1	5	27.8	9	50	10	55.6	9	50	
	2	7	38.9	6	33.3	2	33.3	0	0	
	3	5	27.8	2	11.1	0	0	0	0	
B (n=17)	0	2	11.8	2	11.8	2	11.8	2	11.8	χ^2 = 19.054 p = 0.000 (p<0.01 = H.S.)
	1	3	17.6	2	11.8	5	29.4	7	41.2	
	2	8	47.1	9	52.9	10	58.8	8	47.1	
	3	4	23.5	4	23.5	0	0	0	0	
Pairwise group comparison	A Vs B	z = 0.465 p = 0.642 (p>0.05=N.S.)		z = 2.149 p = 0.032 (p<0.05=S.)		z = 3.788 p = 0.000 (p<0.001=H.S.)		z = 4.312 p = 0.000 (p<0.001=H.S.)		

Table 5: Effect of Therapy on General Functional Capacity

Group	Grading	General Functional Capacity								Intragroup comparison
		BT		Follow up 1		Follow up 2		Follow up 3		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	1	5.6	1	5.6	3	16.7	9	50	χ^2 = 34.570 p = 0.000 (p<0.001 =H.S.)
	1	5	27.8	7	38.9	10	55.6	8	44.4	
	2	12	66.7	10	55.6	5	27.8	1	5.6	
	3	0	0	0	0	0	0	0	0	
B (n=17)	0	1	5.9	1	5.9	1	5.9	1	5.9	χ^2 = 1.737 p = 0.629 (p>0.05 = N.S.)
	1	5	29.4	5	29.4	4	23.5	4	23.5	
	2	11	64.7	11	64.7	11	64.7	12	70.6	
	3	0	0	0	0	1	5.9	0	0	
Pairwise group comparison	A VsB	z = 1.046 p>0.05=N.S.		z = 1.284 p>0.05=N.S.		z = 3.283 p<0.01=H.S.		z = 4.780 p<0.001=H.S.		

Table 6: Effect of Therapy on Pain

Group	Grading	Pain								Intra group comparison
		BT		Follow up1		Follow up 2		Follow up 3		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	0	0	0	0	0	0	6	33.3	χ^2 = 37.084 p = 0.000 (p<0.001 HS)
	1	6	33.3	7	38.9	3	16.7	10	55.6	
	2	7	38.9	9	50	8	44.4	2	11.1	
	3	5	27.8	2	11.1	6	33.3	0	0	
	4	0	0	0	0	1	5.6	0	0	
B (n=17)	0	0	0	0	0	0	0	3	17.6	χ^2 = 21.130 p = 0.000 (p<0.001 HS)
	1	6	35.3	8	47.1	8	47.1	8	47.1	
	2	7	41.2	6	35.3	6	35.3	6	35.3	
	3	4	23.5	3	17.6	3	17.6	0	0	
	4	0	0	0	0	0	0	0	0	
Pairwise group comparison	A Vs C	z= 0.465 p= 0.642		z= 0.398 p= 0.691		z= 1.647 p= 0.100		z= 1.661 p= 0.097		

Table 7: Effect of Therapy on Swelling

Group	Grading	Swelling								Intra group comparison
		BT		Follow up 1		Follow up 2		Follow up 3		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	0	0	0	0	2	11.1	6	33.3	χ^2 = 29.040 p = 0.000 (p<0.001 = H.S.)
	1	6	33.3	10	55.6	9	50	9	50	
	2	12	66.7	8	44.4	7	38.9	3	16.7	
	3	0	0	0	0	0	0	0	0	
B (n=17)	0	1	5.9	1	5.9	0	0	0	0	χ^2 = 4.784 p = 0.188 (P>0.05 = N.S.)
	1	7	41.2	5	29.4	4	23.5	5	29.4	
	2	9	52.9	11	64.7	13	76.5	12	70.6	
	3	0	0	0	0	0	0	0	0	
Pairwise group comparison	A Vs B	z = 0.925 p>0.05=N.S		z = 0.983 p>0.05=N.S		z = 2.324 p<0.05=S.		z = 3.941 p<0.001=H.S.		

Table 8: Effect of Therapy on Stiffness

Group	Grading	Stiffness								Intragroup comparison (Friedman's test)
		BT		Follow up 1		Follow up 2		Follow up 3		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	0	0	0	0	0	0	5	27.8	χ^2 = 34.408 p = 0.000 (p<0.001 = H.S.)
	1	6	33.3	6	33.3	12	66.7	12	66.7	
	2	12	66.7	12	66.7	6	33.3	1	5.6	
	3	0	0	0	0	0	0	0	0	
B (n=17)	0	3	17.6	3	17.6	2	11.8	1	5.9	χ^2 = 4.714 p = 0.194 (p>0.05 = N.S.)
	1	3	17.6	3	17.6	4	23.5	4	23.5	
	2	11	64.7	11	64.7	10	58.8	9	52.9	
	3	0	0	0	0	1	5.9	3	17.6	
Pairwise group comparison	A Vs B	z = 1.046 p>0.05=N.S		z = 1.046 p>0.05=N.S.		z = 2.597 P<0.05=S.		z = 4.245 P<0.001=H.S.		

Table 9: Effect of Therapy on Walking Time

Group	Grading	Walking Time Index								Intragroup comparison
		BT		Follow up 1		Follow up 2		Follow up 3		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	1	5.6	1	5.6	1	5.6	5	27.8	χ^2 = 32.486 p = 0.000 (p<0.001 =H.S.)
	1	5	27.8	6	33.3	10	55.6	11	61.1	
	2	7	38.9	11	61.1	7	38.9	2	11.1	
	3	5	27.8	0	0	0	0	0	0	
B (n=17)	0	0	0	0	0	0	0	0	0	χ^2 = 4.400 p = 0.221 (p>0.05 = N.S.)
	1	4	23.5	4	23.5	4	23.5	3	17.6	
	2	9	52.9	11	64.7	11	64.7	9	52.9	
	3	4	23.6	2	11.8	2	11.8	5	29.4	
Pairwise group comparison	A VsB	z = 0.465 p>0.05=N.S.		z = 1.341 p>0.05=N.S.		z = 2.402 p<0.05=S.		z = 4.206 p<0.001=H. S		

Table 10: Effect of Therapy on Grip Power

Group	Grading	Grip Power								Intragroup comparison (Friedman's test)
		Right Arm				Left Arm				
		BT		AT		AT		BT		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	2	11.1	4	22.2	2	11.1	5	27.8	Rt X^2 = 12.000 p = 0.001 Lt X^2 = 12.000 p = 0.001
	1	4	22.2	8	44.4	4	22.2	6	33.3	
	2	7	38.9	5	27.8	7	38.9	6	33.3	
	3	5	27.8	1	5.6	5	27.8	1	5.6	

B (n=17)	0	2	11.8	2	11.8	2	11.8	2	11.8	Rt X^2 = 4.000 p = 0.046 Lt X^2 = 3.000 p = 0.083
	1	4	23.5	2	11.8	3	17.6	2	11.8	
	2	8	47.1	8	47.1	9	52.9	8	47.1	
	3	3	17.6	5	29.4	3	17.6	5	29.4	
Pairwise group comparison	A Vs B	z = 0.465 p = 0.642		z = 3.398 p = 0.001		z = 0.465 p = 0.642		z = 3.219 p = 0.001		

Table 11: Effect of Therapy on Pressing Power

Group	Grading	Press Power								Intragroup comparison (Friedman's test)
		Right Arm				Left Arm				
		BT		AT		AT		BT		
		No.	%	No.	%	No.	%	No.	%	
A (n=18)	0	2	11.1	4	22.2	2	11.1	5	27.8	Rt X^2 = 11.000 p = 0.001 Lt X^2 = 11.000 p = 0.001
	1	5	27.8	8	44.4	5	27.8	6	33.3	
	2	6	33.3	5	27.8	6	33.3	6	33.3	
	3	5	27.8	1	5.6	5	27.8	1	5.6	
B (n=17)	0	0	0	0	0	1	5.9	0	0	Rt X^2 = 4.000 p = 0.046 Lt X^2 = 5.000 p = 0.025
	1	5	29.4	3	17.6	4	23.5	3	17.6	
	2	8	47.1	8	47.1	8	47.1	8	47.1	
	3	4	23.5	6	35.3	4	23.5	6	35.3	
Pairwise group comparison	A Vs B	z = 0.465 p = 0.642		z = 3.398 p = 0.001		z = 0.465 p = 0.642		z = 3.219 p = 0.001		

According to laboratory findings, the reduction in R.A. factor, CRP titre and ESR level was highly significant in group A after completion of therapy. In group B, this was highly significant only in ESR levels. There was significant rise in Hb% in patients of group A.

Table 12: Effect of Therapy on Blood Components

Components	Group	BT	AT	BT ~ AT	Intragroup comparison paired t test BT Vs AT	Intergroup comparison A Vs B
RA factor	A	87.95± 78.14	21.65± 15.62	66.30± 76.20	3.89 p<0.01 HS	t=2.39, p<0.01
	B	41.50± 21.35	41.13± 27.63	0.3750±20.89	0.961 p>0.05 NS	
CRP titre	A	6.65± 5.67	1.73± 1.29	4.915± 4.84	4.54 p<0.001HS	t=4.00, p<0.001
	B	3.68± 2.39	4.90± 5.62	1.22± 4.9	1.06 p>0.05 NS	
Hb%	A	11.99± 1.33	12.29± 1.17	0.305± 0.383	3.56 p<0.01 HS	t=3.63, p<0.05
	B	10.65± 1.40	10.98± 1.40	0.325± 0.498	1.08 p>0.05 NS	
ESR	A	48.55± 10.20	29.40± 7.40	19.15± 10.97	7.80 p<0.001HS	t=5.53, p<0.01
	B	34.00± 9.01	38.75± 11.56	4.75± 8.34	1.61 p>0.151 HS	

There was neither any side effect produced nor any side effect observed during the trial drug therapy, though in standard group of Indomethacin, some patients developed complaint of GI upset, acidity and burning sensation in epigastrium

DISCUSSION

Amavata affects the *Sandhi* (joints) and *Hridaya Marma* (heart)[1], which form a part of *Madhyama Roga Marga*[5]. Though *Ama* and *Vata* are the chief pathogenic factors, the disease represents the vitiation of *Tridosa* (humours)[6]. The affliction of *Sandhi* [of which *Asthi* (bones) is a component] by *Vata* and association with *Ama*, reflects the role of homogenous *Dosa* (humours) and *Dusya (TulyaDosa Dusya)* in the causation of this disease. Moreover, the chief pathogenic factors i.e. *Ama* and *Vata* being contradictory in character, pose difficulty in planning the line of treatment. *Mandagni* is a prerequisite factor for the initiation of the *Samprapti* (pathogenesis) of *Amavata*.

To understand the probable mode of action of the drug, first of all we should consider the related basic fundamental principles of action of a drug, which are described in the classics.

I. The conjugation of *Rasas (Rasa Sannipata*) etc. their mutual subordination and variation in processing (*Vikalpanair-Vikalpitanama*) on the basis of *Prakriti Samasamavaya* and *Vikriti Vishamasamavaya*[7] theories are to be analyzed to decide the total effect (*Samudaya*

Prabhava) of the drug on the *Doshas* (or disease). It is because the active ingredients in a compound formulation show either antagonism (*Parasparena Cha Upahatanam*) or synergism (*Abhivardhana)* effects[8]

II. The drugs are active due to their own inherent constituents (*Dravya Prabhava*), properties (*Guna Prabhava*) and both combined (*Dravyaguna Prabhava)* together in particular time, on reaching particular site, with a particular mechanism and objective[9]
III. The different properties of a drug are inferred by observing their effects on the body[10]

When seen as combination, most of the constituents are of *Katu Tikta Rasa, Katu Vipaka, Ushna Veerya* and *Kaphavatashamaka*. They are *Deepana, Pachana, Laghu, Sukshma, Teekshna*[11] and *Rasona*, which is the main ingredient, is an important *Rasayana* (rejuvenation)[12]. So, the drug *Rasona Pinda* also inherits these properties.

Hence due to *Rasa Veerya* and *Vipaka*, it has *Deepana* action, which acts upon the major factor in *Samprapti,* i.e. *Agnimandya.*

As it is *Laghu, Sukshma* and *Teekshna*, it can enter even *Sukshma Srotasa* (minute channels) and helps to remove *Ama* out of *Srotasa* and clear them for smooth functioning of *Vata*. So, *Srotorodhajanita Vataprakopa* is pacified.

The *Vishyandana* action of *Lavana* and *Chedana* action of *Kshara* in the combination adds to this by removal of *Ama* that is stuck (*Leena*) in *Srotasa*.

Most of the drugs of this combination are *Kaphavatashamaka. Vata* vitiated due to its own *Nidana* (etiology) is pacified. *Kaphashamaka* property is helpful when we think about the *Adhishthana* of the disease, i.e. *Shleshmasthana.* It is also helpful in condition where there is dominance of *Kapha*. Thus overall the drug helps in *Samprapti Vighatana* (breaking the pathogenesis) of the disease and is helpful in the condition.

CONCLUSION

The present trial was done to provide a drug for Rheumatoid Arthritis which is effective, yet cheaper, easy to be administered and has minimum side effects. The study revealed that trial formulation *Rasona Pinda* is effective in the management or more precisely, cure of *Amavata* vis-à-vis Rheumatoid Arthritis.

The specific *Ayurvedic* line of management and drugs helps in decreasing the autoantigens and may act to modify the immune response to autoantigens. At the same time the drug is safe and can be given for longer duration without any adverse effect. Thus it can be concluded that this drug proves to be a better alternative for the conventional therapy prescribed for Rheumatoid Arthritis.

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