

“A CLINICAL EVALUATION OF THE EFFECT OF THE ‘RASONADI KWATHA’ IN THE MANAGEMENT OF AMAVATA”

Chaoudhari Sukhad¹, Pankaj N. Lomte², Jitendra Mandaware³, Mayee Kiran⁴

¹Assistant Professor, Dept. of Samhita, Vidarbha Ayurved Mahavidyalaya, Amravati, Maharashtra, India, ²Associate Professor, Dept. of Kayachikitsa, Vidarbha Ayurved Mahavidyalaya, Amravati, Maharashtra, India, ³ *Medical officer Aurangabad ‘Maharashtra, India,* ⁴Associate Professor, Dept. of Kayachikitsa, Vidarbha Ayurved Mahavidyalaya, Amravati, Maharashtra, India,

Introduction

Food, life style and environment are three important determinants related to the cause of the disease. An inadequate intake of nutrients, consumption of junk foods and beverages such as tea, coffee, alcohol, decreases strength and energy to the defense mechanism of the body. Environmental pollution is the result of industrialization and deforestation threatening the health of residents. People engaged in doing hour’s night shifts and physical inactivity lead to sedentary lifestyle. They are committed to mental stress and anxiety, wholesale efforts to maintain economic and social situation of the company. They easily adapt to adverse habits such as alcohol consumption, smoking, and drug abuse to relieve stress. All these perpetuate and strengthen the process of disease in individuals easily.

People have been prone to become stressed or even depressed as a result of limited movement and who aren’t able to do the activities that were once beyond their everyday lives. This result in inflammation process causing redness and swelling in joints and around them. Over the time it begins to damage the joint and joint tissues. This is called, ‘a cycle of arthritic pain’ and will make more difficult to deal with this disease.

Rheumatoid Arthritis is a chronic autoimmune disease that primarily involves the joints. According to department of medicine ALL INDIAN INSTITUTE OF MEDICAL SCIENCES, NEW DELHI (AIIMS) the prevalence rate of RA in the adult Indian population is 0.75% projected to the whole population this would give a total of about 7 million patients in India. The prevalence of RA in India is

quite similar to that reported from the developed countries. It is higher than that reported from CHINA, Indonesia, Philippines', and rural Africa. These findings are in keeping with the fact that the north Indian population is genetically closer to the Caucasians' than to other ethnic groups.

In Ayurveda Amavata can be correlated to Rheumatoid Arthritis. The basic pathophysiology of Amavata primarily involves Ama and Vata. Agnimandya is the root cause of all diseases ¹. Same is true to the Amavata. The clinical presentation of Amavata is characterized by Angamarda, Aruchi, Trishna, Alasya, Gaurav, Jvara, Apak, Shotha etc ², which can be correlated with various symptoms of RA.

AIMS AND OBJECTIVES

- 1) To evaluate the effect of 'Rasonadi Kwatha in the management of Amavata'.
- 2) To study the effect of, 'Rasonadi kwatha' on degree of disease activity according to ARA criteria.

Material and Methods:-

- **Type of Study** :- Open Randomized study.
- **Selection** :- Random.
- **No. of patients** :- 30
- **Trial Drug** :- Rasonadi Kwatha
- **Contents** :-

Rason paste	10 gm
Sunthi	10 gm
Nirgundi	10 gm

- **Method of preparation:-** It was prepared according to kwatha vidhi described in sharangdhara samhita⁷⁷.

One part of all dravyas (total 30gm),

water 16 part (480 ml) Boiled & reduced to 1/8(60ml)

- **Dose :-**30ml twice a day
- **Duration:-** 4weeks
- **Criteria of Diagnosis**

The diagnosis was done on the basis of signs and symptoms in both Ayurvedic classics as well as modern texts

Inclusion Criteria

- 1) Clinically diagnosed pt of amavata
- 2) Both the cases of RA factor positive as well as negative
- 3) All patients of either sex and 15 -60yrs age group.

Exclusion Criteria

- 1) Patients who leave the treatment in between.
- 2) Patients who are steroid dependent for relief of symptoms.
- 3) Patients presenting with complication like SLE, endocarditis etc.
- 4) Patient with contractures of joints was not included.

Criteria for Assessment

A] Clinical Assessment

Angamarda: -

- No Angamard

0

- Occasional Angamarda but patients is able to do usual work 1
- Continuous Angamarda but patient is able to do usual work 2
- Continuous Angamarda which hampers routine work 3
- Patient is unable to do any work 4

Aruchi: -

- Normal desire for food 0
- Eating timely without much desire 1
- Desire for food, little late than normal time 2
- Desire for food only after long intervals 3
- No desire all 4

Trishna: -

- Moral feeling of thirst 0
- Frequent feeling of thirst but quench with normal amount of liquid 1
- Satisfactory quench after increased intake of fluids but no awakening during night 2
- Satisfactory quench after increased intake of fluids with regular awakening during night 3
- No quench after heavy intake of liquid 4

Alasya: -

- No Alasya 0
- Starts work in time with efforts 1

- Unable to start work in time but completes the work 2
- Delay in start of work and unable to complete it 3
- Never able to start the work and always likes rest 4

Gauravata: -

- No feeling of heaviness 0
- Occasional heaviness in body but can do usual work 1
- Continuous heaviness in body but can do usual work 2
- Continuous heaviness which hampers usual work 3
- Unable to do any work due to heaviness 4

Apaka: -

- No Apaka at all (Normal digestion) 0
- Occasional indigestion once or twice a week in one meal 1
- Occasional indigestion 3 to 5 times / week in one meal 2
- Indigestion 3 to 5 times / week in both meals 3
- Indigestion after every meal 4

Agni Daurbalya: -

- No Agnimandya 0
- Occasional Agnimandya 1 to 2 times / week 1
- Agnimandya 3 to 4 times / week 2
- Agnimandya 4 to 6 times / week 3
- Continuous Agnimandya 4

Vairasyata: -

- Normal taste of mouth 0

- Occasional sensation of unpleasant taste	1
- Continuous sensation of unpleasant taste but vanishes After eating something	2
- Continuous mild sensation of unpleasant taste which persist After eating	3
- Severe unpleasant taste throughout the day	4
Daha: -	
- No burning sensation	0
- Occasional retro sternal burning	1
- Occasional retro sternal, palm and sole burning	2
- Intermittent burning sensation throughout body	3
- Continuous burning sensation throughout body	4
Bahu Mutrata: -	
- Absent	0
- Urine > 3 times / night	1
- Urine > 5 times / night	2
- Urine > 7 times / night	3
Kukshi Kathinya: -	
- Absent	0
- Transient	1
- Frequent	2
- Regular	3
Nidra Viparyaya: -	

- Normal sleep	0
- Disturb sleep during night with short naps during day	1
- 1 to 2 hrs reduction in night sleep with gross increase in day sleep	2
- 3 to 5 hrs reduction in night sleep with gross increase in day sleep	3
- Waxes during night & sleeps during day	4
Hridgraha: -	
- Absent	0
- Heaviness in chest	1
- Pain during physical activity	2
- Pain during respiratory movement	3
Vid vibandha: -	
- Absent	0
- Motion once a day but not a regular interval	1
- Alternate day	2
- Interval for more than one day	3
Jadya: -	
- No morning stiffness	0
- Morning stiffness > ½ hrs but < 1 hrs	1
- Morning stiffness > 1 hrs but < 6 hrs	2
- Stiffness all the day through	3
Tenderness: -	
- No tenderness	0

- Subjective experience of tenderness 1
- Wincing of face on pressure 2
- Wincing of face on pressure and withdrawal of affected part 3
- Resists to touch 4

Pain: -

- No pain 0
- Mild pain of low intensity causing no disturbance
in routine work 1
- Moderate pain hampers the daily routine work 2
- Severe pain causing definite interruption in routine work 3

Range of Movements: -

- No restriction of movement 0
- Restriction up to 10% 1
- Restriction up to 10% - 20% 2
- Restriction up to 20% - 30% 3
- Restriction up to 30% - 40% 4
- Above 40% 5

Swelling: -

- No swelling 0
- Mild swelling 1
- Moderate swelling 2
- Huge swelling 3

B] Functional Assessment

Was done with the help of following objective criteria

- 1) Walking time
- 2) Grip Power
- 3) Foot power
- 4) General Functional Assessment
- 5) Joint Movement

C] Investigational Assessment

ESR & Hb% was evaluated before and after the treatment.

D] Degree of Disease Activity

For diagnostic and therapeutic purpose, the degree of disease activity was estimated on the basis of criteria laid down by American Rheumatism Association (1967). Details are given in table. In these criteria the maximum score is 30, which represents an average grade of 3 (several active). By dividing the total score by 10, the grade of the disease is obtained and denoted by grades zero (0) to three (3). The table is described herewith.

Table Showing Semi Quantitative Criteria Of Estimating Of Degree Of Disease Activity

Grade	0	1	2	3
Morning stiffness	No Morning stiffness	Morning stiffness > ½ hrs but < 1 hrs	> 1 hrs but <6 hrs	All the day through
Fatigue	None	Work fulltime despite some fatigue	Patient must interrupt work to take rest	Fatigue at rest
Pain	None	Mild pain of low intensity	Moderate	Severe pain causing definite

		not disturbing routine work	pain hampers daily routine work	interruption in routine work
General Function	All activities without difficulty	Most activities but with difficulty	Few activities care for self	Little self care mainly chair & bed ridden
Grip strength in mm of Hg	> 70	70 – 50	50 – 30	< 30
Spread in joints	None	0 to 5	5 to 10	More than 10
ESR	0 – 20	20 – 40	40 – 60	> 60
Hb gm%	> 12	12 – 10	10 – 9	< 9
Physicians Estimate	Inactive	Minimum	Moderate Activity	Severely active

E] Overall Assessment Of The Therapy

To assess the overall effect of the therapies the criteria laid down by ARA (1967) was considered. Result was classified into four groups as listed below.

Grade I – Complete Remission / Cured

Resolution of inflammation, restoration of Joint Function and improvements in symptoms >75% or more.

Grade II – Marked Improvement

Resolution of inflammation, restoration of Joint Function and improvements in symptoms 50% - 75%.

Grade III _ Improvement

Resolution of inflammation, restoration of Joint Function and improvements in symptoms 25% - 50%.

Grade IV – No Improvement or Unchanged

Resolution of inflammation, restoration of Joint Function and improvements in symptoms <25%

Observation -

Rasonadi kwath was given to 30 patients of Amavata for 4 week

Effect of Symptoms Score of 30 Patients of Amavata.

Sr.No	Symptom	B.T	A.T.	Difference	% of Relief
1	Angamarda	78	33	45	57.69%
2	Aruchi	74	26	47	63.51%
3	Trishna	45	41	04	08.89%
4	Alasya	69	29	40	57.97%
5	Gauravta	64	20	44	68.75%
6	Apaka	57	26	31	54.38%
7	Agnimandya	93	54	38	40.86%
8	Vairasyata	60	24	36	60%
9	Daha	45	41	04	08.89%
10	Bahumutrata	48	40	08	16.67%
11	Kukshikathinya	46	15	31	67.39%
12	Nidraviparyaya	45	42	03	06.67%
13	Hridgraha	41	13	28	68.29%
14	Vidvibandha	48	14	34	70.83%
15	Jadya	54	36	18	33.33%
16	Pain	42	13	29	69.04%

	Average Score	909	467	442	48.62%
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Effect on Symptoms of 30 patients of Amavata by Wilcoxon- Matched-Pairs- Signed-Ranks Test

Sr .No	Symptom	Mean	SD	SEd	Sum of All Signed Ranks	No of Pairs	Z	P
1	Angamar da							
	BT	2.6	1.003	0.1832	378	27	4.54	< 0.0001
	AT	1.1	0.9595	0.1752				
	Diff.	1.5	0.7768	0.1418				
2	Aruchi							
	BT	2.467	0.8604	0.1571	435	29	4.70	< 0.0001
	AT	0.8667	0.8604	0.1571				
	Diff.	1.6	0.7240	0.1322				
3	Trishna							
	BT	1.5	0.6823	0.1246	27	14	0.847	0.4263
	AT	1.367	0.8503	0.1552				
	Diff.	0.1333	0.8193	0.1496				
4	Alasya							
	BT	2.3	0.9154	0.1671				<

	AT	0.96 67	0.8899	0.1625	351	26	4.45 7	0.000 1
	Diff.	1.33 3	0.8841	0.1614				
5	Gauravta							
	BT	2.13 3	0.7761	0.1417	406	28	4.62	< 0.000
	AT	0.66 67	0.7112	0.1298				1
	Diff.	1.46 7	0.7303	0.1333				
6	Apaka							
	BT	1.9	0.8449	0.1543			4.37 23	<
	AT	0.86 67	0.7303	0.1333	325	25		0.000 1
	Diff.	1.03 3	0.6149	0.1123				
7	Agnimandya							
	BT	3.1	1.062	0.1939			4.45 73	<
	AT	1.8	1.215	0.2218	351	26		0.000 1
	Diff.	1.3	0.7944	0.1450				
8	Vairasyata							
	BT	2	0.8305	0.1516			4.45 73	
	AT	0.8	0.7144	0.1304	351	26		

	Diff.	1.2	0.7144	0.1304				<0.00 01
9	Daha							
	BT	1.5	0.6823	0.1246	27	14	0.84 74	0.426 3
	AT	1.36 7	0.8503	0.1552				
	Diff.	0.13 33	0.8193	0.1496				
10	Bahumut rata							
	BT	1.6	0.8944	0.1633	68	17	1.60 94	0.108 9
	AT	1.33	0.8442	0.1541				
	Diff.	0.26 67	0.7849	0.1433				
11	Kukshi- kathinya							
	BT	1.53 3	0.7303	0.1333	66	11	2.93	< 0.001
	AT	1.1	0.9595	0.1752				
	Diff.	0.43 3	0.6261	0.1143				
12	Nidra- viparyaya							
	BT	1.5	0.8610	0.1572	21	13	0.73 42	
	AT	1.4	0.8550	0.1561				

	Diff.	0.1	0.6618	0.1208				0.497 3
13	Hridgraha							
	BT	1.36 7	0.8087	0.1477	253	22	4.10 7	< 0.000 1
	AT	0.43 3	0.6261	0.1143				
	Diff.	0.93 3	0.6915	0.1262				
14	Vid-vibandha							
	BT	1.6	0.8137	0.1486	325	25	4.37 23	< 0.000 1
	AT	0.46 67	0.6288	0.1148				
	Diff.	1.13 3	0.7303	0.1333				
15	Jadya							
	BT	1.8	0.9613	0.1755	177	22	2.87 32	0.002 9
	AT	1.2	0.9613	0.1755				
	Diff	0.6	0.8944	0.1633				
16	Pain							
	BT	1.93 3	0.6915	0.1262	435	29	4.70	< 0.000 1
	AT	0.5	0.6297	0.1150				

Diff.	1.43 3	0.6789	0.1240				
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Table Showing Effect on Physical parameters of 30 Patients of Amavata By Paired t Tests

Sr. No	Physical Parameters	Mean	SD	SEd	T	P
1	Walking time (in sec.)	13.86	5.68	1.037	13.36	<0.05
2	Foot Power (in kg)	0.616	0.9530	0.174	3.54	<0.05
3	Grip Power (in mmHg)	1.4	2.41	0.44	3.18	<0.05
4	Joint Movement (in degree)	2.8	1.0488	0.1914	14.62	<0.05

Table Showing Effect on Hematological parameters of 30 Patients of Amavata By Paired t Tests

Sr.No	Hematological Parameters	Mean	SD	SEd	T	P
1	Haemoglobin	0.046	0.3370	0.06153	0.7476	>0.05
2	Total RBC	0.0066	0.146	0.02665	0.247	>0.05
3	ESR	5.433	9.9401	1.8148	2.9937	<0.05
4	Total WBC	0.0066	0.2273	0.0415	0.1590	>0.05
5	SGOT	0.33	7.7763	1.4198	0.2324	>0.05

6	SGPT	2.33	6.54	1.194	1.9514	>0.05
7	Sr.Bilirubin	0.033	0.1470	0.02683	1.229	>0.05
8	Blood Urea	0.167	3.445	0.6289	0.2655	>0.05
9	Sr.Creatinine	0.0233	1.3516	0.2467	0.0944	>0.05

Table Showing Effect of Therapy on Degree of Disease Activity of 30 Patients of Amavata By Paired t Tests

Sr. No	Symptom	Mean	SD	SE _a	T	P
1	Morning Stiffness	0.6	0.894	0.163	3.68	< 0.05
2	Fatigue	0.4	0.77	0.1405	2.84	< 0.05
3	Pain	1.43	0.6788	0.1239	11.54	< 0.05
4	General Function	0.3	0.794	0.145	2.06	< 0.05
5	Grip Power	00	00	00	00	> 0.05
6	Spread in Joint	0.067	0.7397	0.1350	0.4962	> 0.05
7	Hemoglobin	-0.1	0.5477	0.1	1	> 0.05
8	ESR	0.3	0.5620	0.1026	2.9239	< 0.05
9	Physicians Estimate	0.1	0.8029	0.1466	0.6821	> 0.05
10	Total Disease Activity	0.3441	0.4614	0.1538	2.2373	>0.05

Table Showing Total Effect of Therapy in 30 Patients of Amavata

Sr.	Symptom Score			Total	Total%	Remark
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No	B.T	A.T	Diff.	Avg.% of relief in symptoms	Avg.% of relief in signs		of relief	
1	39	19	20	51.28	21.51	72.79	36.39	Improved
2	36	19	17	47.22	33.66	80.88	40.44	Improved
3	27	13	14	51.85	38.56	90.41	45.20	Improved
4	28	15	13	46.43	39.95	86.38	43.19	Improved
5	23	10	13	56.52	15.71	72.23	36.11	Improved
6	28	21	07	25	22.44	47.44	23.72	Unchanged
7	42	26	16	38.09	38.79	76.88	38.44	Improved
8	30	12	18	60	32.61	92.61	46.30	Improved
9	30	16	14	46.67	39.60	86.27	43.13	Improved
10	30	19	11	36.67	23.22	59.89	29.94	Improved
11	34	18	16	47.05	23.90	70.95	35.47	Improved
12	35	16	19	54.28	38.98	93.26	46.63	Improved
13	31	17	14	45.16	33.87	79.03	39.51	Improved
14	35	13	22	62.86	41.04	103.9	51.95	Markedly Improved
15	30	09	21	70	5.23	75.23	37.61	Improved
16	30	18	12	40	42.73	82.73	41.36	Improved
17	30	18	12	40	14.38	54.38	27.19	Improved
18	29	16	13	44.83	27.87	72.70	36.35	Improved
19	32	16	16	50	37.92	87.92	43.96	Improved

20	23	11	12	52.17	24.02	76.19	38.09	Improved
21	31	18	13	41.93	41.16	83.09	41.54	Improved
22	34	18	16	47.06	33.30	80.36	40.18	Improved
23	31	18	13	41.93	11.29	53.22	26.61	Improved
24	29	11	18	62.07	18.91	80.98	40.49	Improved
25	33	15	18	54.54	38.03	92.57	46.28	Improved
26	26	11	15	57.69	28.19	85.88	42.94	Improved
27	26	11	15	57.69	25.53	83.22	41.61	Improved
28	28	12	16	57.14	43.74	100.88	50.44	Markedly Improved
29	36	18	18	50	28.37	78.37	39.18	Improved
30	29	15	14	48.27	42.64	90.91	45.45	Improved

DISCUSSION

There is significant improvement on Walking time, Foot power, Grip power, Joint movement; This indicates the efficacy of Rasonadi kwatha on improvement of physical wellbeing causing improvement on quality of life of patient .

In this study Rasonadi Kwath is effective only on ESR out of all above haematological parameters. Decrease in ESR shows anti-inflammatory activity of Rasonadi kwatha; & no change in LFT & RFT shows that the drug does not have any toxicity on hepato renal system in 4 weeks. However longer duration study is required to see long term adverse drug effect on liver & kidney .

It is observed that Rasonadi kwath has statistically significant action on some parameters of degree of disease activity; but it is statistically insignificant on total degree of disease activity. we can conclude that there is no effect of Rasonadi kwatha on total degree of disease activity of Rheumatoid arthritis . Hence we can say that though some sign& symptom of Amavata shows similarity with some sign& symptoms Rheumatoid arthritis: They are not synonyms of each other indicating same disease. Hence to find exact nature of RA in Ayurvedic text we require further study that may be in direction of Grahani, strotorodhajanya, vatavyadhi, sama vayu, Agnimandya Digestion, & other various siddhantas (basic principles) of Ayurveda.

In present study out of 30 patients of Amavata 0% pt were completely 2(6.67%) pt were markedly improved, 27(90%) Improved, 1(3.33%) was Unchanged. This shows that Rasonadi Kwatha is effective in relieving sign & symptoms of both RA & Amavata in 4 weeks; it is not perfect master treatment to cure neither Amavata nor RA in 4 weeks .A longer duration assessment is require for that. But these effects definitely gives us hope in complete cure of either Amavata or RA in longer duration.

CONCLUSION

The symptoms wise statistical analysis, it is found that *Rasonadi kwath* is significantly reduction of Sign, Symptoms, and Specific biochemical markers like ESR RA & Amavata in 4 week

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