

EFFECT OF RASNADI CHURNA BASTI IN THE MANAGEMENT OF AMAVATA IN CLINICAL CORRELATION WITH RHEUMATOID ARTHRITIS – A CLINICAL STUDY

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ABSTRACT

Rheumatoid Arthritis is one among the major crippling diseases all over the world affecting about 0.3-2.1 % of adult population and it is clinically correlated to that of *Amavata* in *Ayurveda*. *Ama* (improperly digested material) and *vata* (one among *tridosas*) are the main causative factor for its origin. They are contradictory in nature to each other and thus possess difficulty in planning the line of treatment. *Rasnadichurnabasti* is indicated in *shula* and its ingredients being *vata-kaphahara*, *ama-hara*, *shulahara* and *shothahara* in nature. A clinical study carried on 30 *Amavata* patients showed statistically significant relief in *Sandhishula* (pain), *Sandhishota* (swelling of joints), *Agnidourbalya* (indigestion), *Stabdata* (Morning stiffness), *Vairasya* (unpleasant taste), *Aruchi* (loss of appetite), *Gourava* (heaviness), *Utsaahahaani* (less willing of work) *Antrakoojana* and improved in range of movements. The overall effect of the *RasnadiChurnaBasti* revealed that 20% (6) of the patients showed marked improvement, 73.3% (22) of the patients showed with moderate improvement and mild improvement showed by 6.3 % (2) of patients.

Key words: *Amavata*, Rheumatoid Arthritis, *RasnadiChurnaNiruhaBasti*

INTRODUCTION

Rheumatoid Arthritis is a persistent inflammatory arthritis¹, affecting 0.3 to 2.1% of the adult population² worldwide. It is characterised by pain, joint swelling and stiffness affecting the small and large joints³ and also associated with anorexia, weight loss and fa-

tigue. Making the person unfit for doing their regular activities.

In *Ayurveda* Rheumatoid Arthritis is correlated to *Amavata* on the basis of its aetiology, pathology, therapeutic signs and symptoms. “*Agni*” had been given importance in the pathogenesis as well as in the management of

amavata. *Agnimandhya* causes formation of *ama* and thus aggravated *Ama*⁴ occupies the *Shleshmasthanas* like *Sandhi* with the help of vitiated *vata* and causes *Amavata*. *Vatahara*, *Kaphahara*, *Amahara* and *Rasayana* therapies are required for its management and are attained by *Langhana*, *Deepana*, *Swedana*, *Virechana*, *Snehapana*, *Basti* and *Upanahatharapies*⁵. Among *Shodana*, *Basti* plays major role in the management of *Amavata*. Though *basti* is contraindicated in *amaavastha* of *Amavata*, *TeekshnaNiruhaBasti* which is having *Agni deepaka*, *Pachaka* and *amahara*⁶,⁷ properties are indicated. *Churnabasti*⁸ is one among them and it contains *SaindhavaLavana*, *Sneha*, *rasnadichurna*, *Ushnajala* and *Amladravya*. *RasnadiChurna* contains *Rasna*, *Vacha*, *Bilwa*, *Shatapushpa*, *Ela*, *Putika*, *Madanaphala*, *Pippali*, *Devadaru*, and *Kushta* in equal quantity and the drugs collectively are *Ushna*, *Teekshna*, *Deepana-Pachana*, *Vata-Kaphahara* and *Shula-Shothahara* in nature. Based on this idea, clinical study with *rasnadi Churna* in the form of *Basti* was carried out to ascertain the effect on *Amavata* patients in *amaavastha*. It has shown encouraging results on attaining *Agni deepati*, *Laghutva*, *NiramaLakshana* and *Shoolahara*.

Aims and objectives:

To evaluate the efficacy of *RasnadiChurna Basti* in the management of *Amavata*.

MATERIALS AND METHODS:

In this study patients diagnosed by fulfilling the criteria of *Amavata* were selected for the study from IPD of Sri Dharmastala Manjuna-

teshwara college of Ayurveda and Hospital, Hassan, Karnataka.

Source of drug: Required drugs were taken from SDM Pharmacy of Udupi and Hassan. Drugs got authenticated by head of department of Dravyaguna, Sri Dharmasthala Manjunateshwara college of Ayurveda and Hospital, Hassan, Karnataka.

Method of collection of data: 31 patients were selected and placed in single group. A special Performa was prepared with all points of history taking, physical signs, symptoms as quoted in Ayurvedic literatures and lab investigations were carried out as mentioned in Allied sciences where ever necessary. The selected patients were subjected to detail clinical history and complete physical examination before undergoing the clinical study.

Diagnostic criteria:-The patients were diagnosed based on *Amavata Lakshana*⁹ and American Rheumatism Association revised criteria¹⁰.

Inclusion Criteria:-

- 1) Patients will be selected irrespective of their gender, caste or creed.
- 2) Chronicity less than 5 years.
- 3) Patients between the ages of 18 to 60 years
- 4) The patients fit for *Basti Karma*.
- 5) With systemic disorders
: Hypertension < 150/90 mmHg
: Controlled Type 2 Diabetes mellitus - HbA1c <6, FBS :< 110 mg/dl and PPBS <150 mg/dl

Exclusion Criteria:-

- 1) All connective tissue disorders other than Rheumatoid Arthritis.
- 2) Systemic Lupus Erythematosus.
- 3) Patients unfit for *Basti karma*

Design of the study: An open labelled, single arm group clinical study with pre-test and post-test design wherein a minimum of 30 patients suffering from *Amavata* were selected. The parameters of signs and symptoms ana-

lysed statistically. All subjects were administered *RasnadiChurnaNiruhabasti* (table 1) and *Anuvasanabasti* with 80 ml of *Pippalyaditaila* in modified *yoga basti* schedule (table 2).

Table1: Showing Ingredients of *Rasnadi Churna Niruha Basti*

INGREDIENTS	IN PALA	IN ml/gms
1. <i>Saindavalavana</i>	½ karsha	6g
2. <i>Pippalyaditaila</i>	1 ½ pala	75 ml
3. <i>Rasnadichurna</i>	1 pala	50 gm
4. <i>Usnajala</i>	4 pala	250 ml
5. <i>Dhanyamla</i>	1 ½ pala	75ml
TOTAL		456 ml
<i>Anuvasanabasti</i>		
<i>Pippalyaditaila</i>		80 ml

Table 2: Showing Schedule of the Basti

1 st day	2 nd day	3 rd day	4 th day	5 th day
A	N	N	N	
	A	A	A	A

DURATION OF STUDY:

➤ 1-5th day: *Basti* administered in modified *YogaBasti* schedule.

METHOD OF PREPARTION OF NIRUHA BASTI

To prepare *NiruhaBasti*, initially *Saindavalavana* and *Pippalyaditaila* were taken in a *Khalvayantra* and mixed homogenously, after that *Rasnadichurna* was added little by little followed by *Usnajala* to above mixture. Finally *Dhanyamla* was added and mixed thoroughly to form a homogenous mixture and tested for *suyojitaNiruhalakshanas*. Lastly, *bastidravya* was filtered and administered.

ADMINISTRATION OF BASTI

The *Basti* administration involves 3 main steps

Poorva karma (pre-operative procedure), *Pradhana Karma* (main procedure), *Paschat Karma* (post-operative procedure)

POORVA KARMA: After *vegapravrutti* (defecation) patient was given *Abyanga* with *Pippalyaditaila* followed by *nadiswedana* on the lower abdomen, back and thighs.

PRADHANA KARMA: Position of Patient: Patient was made to lie in the left lateral position by keeping left leg straight and right leg flexed at the knee joint.

Niruhabasti administration: Anus was anointed by cotton swab dipped in oil and appropriate quantity of prepared *Rasnadi ChurnaBasti* was administered using rubber catheter attached to enema can.

AnuvasanaBasti Administration: Anus was anointed by cotton swab dipped in oil and 80

ml of *Pippalyaditaila* administered using rubber catheter attached to metal syringe.

PASCHAT KARMA: Patient was advised to turn and lie down in supine position and advised to pass the bowel after getting the urge.

ASSESSMENT CRITERIA: The patients were observed during and after the treatment for the change in subjective Parameter by self-scoring and objective Parameters by using appropriate clinical tools (Table 3).

Table 3: Showing the Subjective and Objective Parameters

Subjective parameters	<i>Panchakarma</i> parameters	<i>SamyakNiruhaBasti Lakshanas</i> ¹¹ , <i>SamyakAnuvasanaBasti Lakshnas</i> ¹²
	<i>RogaLakshnas</i>	Lakshna's of <i>Amavata</i> are <i>SandhiRuja</i> , <i>Agnimandya</i> , Morning Stiffness, <i>Aruchi</i> , <i>Gaurava</i> , <i>Utsahahani</i> , <i>Vairasya</i> and <i>Utsaha-haani</i>
Objective parameters	<i>SandhiShotha</i>	Measured with the help of measuring tape
	Range of movement	Measured with the help of Goniometer

Table 4: Showing assessment of subjective parameter by self-scoring

Sl.no	Parameter	Self-score
1	<i>Sandhiruja</i>	No symptoms -0 Mild symptoms (on motion) - 1 Moderate symptoms (at rest) - 2 Severe symptoms (wakes patient from sleep) – 3
2	Morning stiffness (duration in hours)	0-5min-1 5 min. - 2 hrs- 2 2hrs to 8 hrs- 3 8hrs. or more -4
3	<i>Agnidourbalya</i>	No <i>Agnimandya</i> -0 Occasional <i>Agnimandya</i> 1 to 2 times / week-1 <i>Agnimandya</i> 3 to 4 times / week-2 <i>Agnimandya</i> 4 to 6 times / week-3 Continuous <i>Agnimandya</i> -4
4	<i>Vairasya</i>	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 persists even after eating-3 Severe unpleasant taste throughout the day-4
5	<i>Aruchi</i>	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 at all-4
6	<i>Gourava</i>	No feeling of heaviness-0 Occasional heaviness in body but does usual work-1

		Continuous heaviness in body but does usual work-2 Continuous heaviness which hampers usual work-3 Unable to do any work due to heaviness-4
7	<i>UtsahaHaani</i>	Instant start of work -0 Less willing at start of work -1 Less willing throughout whole work-2 Less willing and does not complete work-3 No willingness at all-4
8	<i>AntraKoojana</i>	No <i>Antrakoojana</i> - 0 Occasional <i>Antrakoojana</i> 1 to 2 times / week- 1 <i>Antrakoojana</i> 3 - 5 times / week- 2 <i>Antrakoojana</i> more than 5 times / week- 3 Continuous <i>Antrakoojana</i> -4

STATISTICAL ANALYSIS:

Collected data was tabulated and analysed by using SPSS version 20. The Nominal and Ordinal data (Subjective parameters) were analysed using non-parametric test -Friedmen's test with Wilcoxon signed rank test as post-hoc with Bonferroni correction (0.0166) at the following intervals of 0 (before treatment), 3rd day, 5th day and after treatment (after evacuation of *AnuvasanaBasti*) and Numerical data (objective parameters) by using paired t test. *Samyakbastilakshanas* was analysed at different intervals of the study i.e. day 1, day 2, day 3, day 4 and day 5 by using Cochran's Q Test.

OBSERVATION AND RESULTS:

The finally prepared *BastiDravya* was moderate thick in consistency in comparison with regular *Basti*. This may be due to adding more amount of *Churna*. Even though *madhu* was not added, it forms homogenous mixture and *SuyojitaNiruha lakshanas*¹³ were observed.

31 patients were registered for the clinical study, in that 30 completed the clinical trial and one dropout was observed.

- The mean Retention time of *Basti* observed was 3.16, 3.13, 3.7 minutes on day 2,3,4 respectively. The maximum retention time observed for the patients was 8 minutes and minimum was 2 minutes.
- Minimum Vega of 1 and maximum of 4 *vegas* were observed after administered the *NiruhaBasti*. In certain subjects who were passing hard stools (constipated) presented with more than 1 Vega, it was observed that they complained with pain and discomfort in the abdomen in between successive *Vegas*.

On *samyakBastilakshanas*: *Niruha* and *Anuvasana Bastisamyak* was analysed by using Cochran's 'Q' test. Cochran's showed significant statistically highly significant ($p < 0.001$) change in *samyakBastilakshana* of both *Niruha* and *Anuvasanabasti* from day 1 to day 5 in all patients.

On subjective Parameters: In 30 patients were analysed at the following intervals of treatment BT, 3rd day, 5th day and after treatment (after evacuation of *AnuvasanaBasti*).

Friedmen’s test shows statistically significant difference in cardinal symptoms like pain (65%, p<0.001), *Agnidourbalya* (96%, p<0.001), Morning stiffness (54%, p<0.001), *Aruchi* (92%, p<0.001), *Gourava* (82%, p<0.001), *Utsahahaani* (73%, p<0.001),

Vairasya (81%, p<0.001), *Antrakoojana* (93%, p<0.001) (Table 4).Post hoc analysis with wilcoxon signed rank test with Bonferroni correction was applied resulting in a significant level set at p<0.016.

Table 4: Showing Effect of *Basti* on Subjective parameters by Friedman’s test

Sl.no	Parameter on 0, 3 rd , 5 th , AT	Chi-square	%	p-value	Remark
1	<i>Sandhiruja</i>	78.480	65%	.000	HS
2	<i>Agnidourbalya</i>	80.498	96%	.000	HS
3	<i>Morning stiffness</i>	71.739	54%	.000	HS
4	<i>Aruchi</i>	67.500	92%,	.000	HS
5	<i>Gourava</i>	77.036	82%	.000	HS
6	<i>Utsahahani</i>	74.129	73%	.000	HS
7	<i>Vairasya</i>	54.339	81%	.000	HS
8	<i>Antrakoojana</i>	23.348	93%,	.000	HS

On Objective Parameters:

Patients were analysed at the two intervals of treatment i.e. before treatment and after treatment. There was a statistically significant difference in swelling at all the levels of treatment with (p<0.001)Rt knee joint (0.73) 3.15

%, Left knee jt (0.76) 3.30 %, Rt ankle joint (0.37) 0.97 %, Lt ankle joint(0.35) 0.92 %,Rt elbow joint(0.46) 1.90%, Left elbow jt(0.37) 1.53%, Rt wrist joint(0.34)2.08%, Lt wrist joint(0.22) 1.35%. (Table 5)

Table 5: Showing Effect of *Basti* on Swelling of joints by Paired t test

PARAMETERS BT- AT	Mean	SD	SE	T	%	p-value	Interpretation
SandhishothaRight Knee	.73333	.74247	.13556	5.410	3.15%	.000	HS
SandhishothaLeft Knee	.76333	.63652	.11621	6.568	3.30%	.000	HS
SandhishothaRight ANKLE	.37000	.60123	.10977	3.371	0.97%	.002	S
SandhishothaLeft ANKLE	.35000	.45543	.08315	4.209	0.92%	.000	HS
SandhishothaRight ELBOW -	.46333	.42140	.07694	6.022	1.90%	.000	HS
SandhishothaLeft ELBOW	.37333	.44716	.08164	4.573	1.53%	.000	HS
Sandhishotha Right Wrist	.34000	.36728	.06706	5.070	2.08%	.000	HS
Sandhishotha Left Wrist	.22000	.32420	.05919	3.717	1.35%	.000	HS

Effect of therapy on ROM (Range of Movements):

Joint stiffness can be determining factor when diagnosing the advancement and improvement

of RA.In the present study there was a statistically significant results in ROM of all the joints at the level of p<0.001.To analyze the effect of treatment on ROM in shoulder, el-

bow, wrist, knee and ankle joints, paired t-test was applied. It is evident from the below table that there was significant increase in ROM of

all joints at the levels of the treatment with $p < 0.001$. (Table 6)

Table 6: Showing Effect of Basti on ROM by paired t test

PARAMETERSBT – AT	Mean	SD	SE	T	%	P-value	Interpretation
Right Shoulder Flexion	-27.633	13.815	2.5223	-10.956	24.80%	.000	HS
Left Shoulder Flexion	-19.333	20.615	3.7638	-5.137	16.24%	.000	HS
Right Shoulder Extension	-10.966	7.6043	1.3883	-7.899	30.47%	.000	HS
Left Shoulder Extension	-10.100	6.6298	1.2104	-8.346	30.51%	.000	HS
Right Shoulder Abduction	-16.900	16.534	3.0188	-5.598	41.25%	.000	HS
Left Shoulder Abduction	-11.033	15.423	2.8160	-3.918	23.74%	.000	HS
Right Shoulder Adduction	-16.366	13.8401	2.5268	-6.477	18.83%	.000	HS
Left Shoulder Adduction	-15.300	13.6739	2.4965	-6.129	18.10%	.000	HS
Right Elbow Flexion	-15.366	18.1630	3.3161	-4.634	12.02%	.000	HS
Left Elbow Flexion	-10.466	8.9855	1.6405	-6.380	7.94%	.000	HS
Right Elbow Extension	-8.6000	6.67781	1.2192	-7.054	93.17%	.000	HS
Left Elbow Extension	-7.6000	7.82392	1.4284	-5.320	93.56%	.000	HS
Right Wrist Flexion	-13.533	8.74439	1.5965	-8.477	32.24%	.000	HS
Left Wrist Flexion	-11.333	8.84866	1.6155	-7.015	26.20%	.000	HS
Right Wrist Extension	-15.866	9.54024	1.7418	-9.109	42.52%	.000	HS
Left Wrist Extension	-16.000	8.50963	1.5536	-10.298	43.05%	.000	HS
Right Knee Extension	-7.2000	6.03095	1.1011	-6.539	62.92%	.000	HS
Left Knee Extension	-7.3666	6.03715	1.1022	-6.683	70.36%	.000	HS
Right Knee Flexion	-20.533	14.3688	2.6233	-7.827	17.15%	.000	HS
Left Knee Flexion	-20.600	14.1338	2.5804	-7.983	17.23%	.000	HS
Right Ankle Plantar Flexion	-12.600	5.9631	1.0887	-11.573	37.10%	.000	HS
Left Ankle Plantar Flexion	-13.133	6.36116	1.1613	-11.308	38.66%	.000	HS
Right Ankle Dorsi-Flexion	-8.9333	5.78901	1.0569	-8.452	42.93%	.000	HS
Left Ankle Dorsi-Flexion	-9.3000	5.37010	.98044	-9.486	45.29%	.000	HS

DISCUSSION

The *chikitsa* explained for *Amavata* includes *Shodhana* as well as *Shamanawhich* includes *Langhana*, *Deepana*, *Swedana*, *Virechana*, *Snehapana* and *Basti*. In *Amavata*, *dosha*'s are deep rooted in *sandhis* and affects the whole-body. In order to remove deep rooted *doshas*, *basti* has been selected for *shodana*.

In *churnabastiusnajala* was mentioned in the place of *kwatha* as *jala* is the source of *rasa* and it is the medium to reach the *dhatu*¹⁴. *Usnajala* has the property of *vatakaphara*, *deepaniya* and *basti shodhana*¹⁵. *Dhanyamla*¹⁶ was used as *avapa* and it is also *vatakaphara* in nature. *Pippalyaditaila* is used as *sneha* in the *Basti* due to its *vatakaphara* property and is indicated in *moodavata* condition¹⁷.

Discussion on retention of basti: Less retention time was observed during the course of Basti in more subjects may be due to the *teekshnata* of Basti. Hypertonic and isotonic enemas provided markedly reduced drug retention in colorectal tissue¹⁸. However, less retention of time have no significant impact on efficacy¹⁹. Pain and discomfort in the abdomen in between successive Vegas may be due to incomplete evacuation of the *BastiDravyas*.

Discussion on matra: To pacify *ama*, *basti-matra* told for *kaphaja* disorders²⁰ in *avaramatra* was followed in this study. Initially, *basti* with *madhyamatra* was given for two patients in pilot study. But 2 patients had complaints of pain and fatigue after administration of *Niruhabasti*. So *bastimatra* was reduced to *avaramatra* (600ml)²¹. As in *churnabasti*, *madhu* has been excluded (150ml) so its total quantity is 456ml.

Discussion on modified schedule: As the selected *niruhabasti* was *teekshna*, *laghu* and *ruksha* in nature and there is a chance of vitiation of *vata* and in order to pacify vitiated *vata*²²; *PippalyadiAnuvasanaBasti* was given on the same day²³. By this *yoga basti* schedule was reduced to 5 days.

Mode of action of *Rasnadichurnabastidravyas*:

Most of the drugs in the *niruhabasti* are having *laghurukshaguna*, *katu rasa*, *katuvipaka*, *ushnaveerya* which causes *depana-pachana*, *amahara* which in turn help to pacify vitiated *vata* and *kapha* along with *ama*.

Action over *Dushya*: Main *Dushya* involved in *Amavata* is *Rasa Dhatu*. Due to *mandagni*, the *AharaRasa* is not digested properly & turns into *Ama*, So that *Rasa dhatu* is not formed

properly. Due to the *Deepana* and *Pachana* action (60%) of the drugs there will be proper formation of *rasa dathu*.

Action over AmaLakshanas: Due to *Pachana Karma* already formed *Ama* is digested & with *Deepana* action *Agni* is kept in *sama avasthaso* that further *Ama* formation was prevented.

Action over Sandhi Shula and SandhiShotha: *Sandhi Shula* & *SandhiShotha* is the main *Lakshanas* of *amavata*. *Churnabasti* contains *churnaaskalkadravya* in that 60% drugs are having *shulaharaguna* & 50% drugs are *Shothaghna*.

Considering the above properties *Rasnadi-ChurnaBasti* is effective in the management of *Amavata*.

CONCLUSION:

Amavata is the disease having *Vata* and *Kapha* predominance and origin from both *Pakvashaya* and *Amashaya*. *RasnadiChurnaBasti* administered in modified *yoga basti* schedule significantly reduced *amavata lakshanas* like *agnidourbalya*, morning stiffness, *gourava*, *utsahahani*, *vairasya* etc., and most of the patients results with attaining *Agni deepti*, *Laghutva* and *NiramaLakshana*. Also it showed significant results in reducing swelling and improving the ROM of involved joints. The assessment of the overall effect of the treatment revealed that 20% (6) of the patients showed marked improvement 73.3 % (22) of the patients showed with moderate improvement and mild improvement showed by 6.3 % (2) of patients.

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