



Comparative clinical evaluation of Vaitarana Basti and Shataspushpadi Lepa in Amavata (Rheumatoid Arthritis)

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Amavata is a disorder described in Ayurveda that closely resembles Rheumatoid arthritis (RA) in modern medicine. The disease originates from the accumulation of Ama (undigested toxins) in the body, coupled with the vitiation of Vata Dosha. This dual pathology results in the obstruction of channels (Srotas), leading to joint pain, swelling, stiffness, and systemic symptoms such as anorexia and fatigue, much like RA. Though, it is systemic disease, it mostly affects joints. It is one of the most debilitating diseases impacting the person's quality of life and makes it difficult for them to perform day-to-day activities. Despite so much advancement and modernization the complete cure of the disease has not been found. Contemporary system of medicine provides symptomatic relief and delays the progression of disease yet there is a lacuna in the management of RA. Hence, with the aim of identifying and establishing an alternative, safer, effective and long-lasting treatment modality, the study was conducted in 40 patients. They were selected on the basis of standard inclusion and exclusion criteria and randomly allocated to two different treatment groups; Group-A was treated with Vaitarana Basti and Group-B was treated with Shatapushpadi Lepa. Total duration of treatment was of 2 months and follow up was done 1 month after completion of treatment. Although both the interventions were effective, but in overall improvement of the patients, Group-A had better result than Group-B.

Keywords: Amavata, Rheumatoid arthritis, Vaitarana Basti, Lepa

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Introduction

Amavata is one of most disability causing disease occurring due to *Mandagni*, and *Mithyahara Vihara*. The term *Amavata* is formed by the union of two words *Ama* and *Vata* which are the two predominant pathological factors in the disease process. Due to lack of physical activity and sedentary life style, metabolism of body is getting slower which leads to production of internal toxins (*Ama*), and *Vata* is one of the three *Doshas*, responsible for movement and functions in the body. When *Ama* and *Vata Dosha* are vitiated simultaneously and circulated throughout the body, they enter the *Trika* and *Sandhi Pradesha*, leading to stiffness in the body. This condition is known as *Amavata*. [1] Patients complains of pain, stiffness, and swelling in multiple joints. According to clinical presentation, *Pravridha Awastha* of *Amavata* closely resembles with Rheumatoid arthritis (RA) in accordance with their similarities on clinical features like pain, swelling, stiffness, fever, redness, general debility. Rheumatoid arthritis (RA) is chronic multisystem disease of unknown cause. Although there are variety of systemic manifestations, the characteristic features of RA are persistent inflammatory synovitis, usually involving peripheral joints in symmetric distribution. [2]

Now a days Rheumatoid arthritis has been more common and distressing among all joints problem. It affects approximately 0.8% of the population (ranges from 0.3-2.1%) worldwide. [3] The prevalence of RA in India is 0.7%. [4] In recent years, it affects individual of every age i.e., from teenage to adult. Numerous *Ayurvedic* medications and *Panchakarma* therapies have been described in the *Ayurvedic* texts for the management of *Amavata* (Rheumatoid arthritis). *Acharya Chakradutta* has mentioned *Vaitarana Basti* in the *Chikitsa* of *Amavata*. *Vaitarana Basti* and is said to having *Shoola*, *Anaha*, *Amavatahara* properties. [5] *Acharya Yogaratnakara* has also mentioned various *Lepa* in the management of *Amavata*. *Shatapushpadi Lepa*, is one mentioned in *Yogaratanakara*, *Adhyaya Amavata Chikitsa Adhikara*. [6] *Shatapushpadi Lepa* consists of twelve herbs. The drug review revealed that all the drugs present in this *Lepa* has analgesics and anti-inflammatory properties. So, for present study, *Vaitarana Basti* and *Shatapushpadi Lepa* are chosen to check their efficacy in symptoms of *Amavata*.

Aims and Objectives

To compare the effect of *Vaitarana Basti* and *Shatapushpadi Lepa* in *Amavata*.

Materials and Methods

40 patients were randomly selected from the OPD and IPD of *Panchakarma* department of Rishikul Campus Hospital, UAU, Haridwar and screened on the basis of classical signs and symptoms of *Amavata* (Rheumatoid Arthritis).

Registered 40 patients in the trial were randomly divided in two groups (20 patients in each group) out of which all 20 patients in Group A (*Vaitarana Basti*) and 19 patients in Group B (*Shatapushpadi Lepa*) completed the trial respectively. Total 39 patients completed the treatment. The duration of the treatment was 2 months along with follow up period of 1 month.

Inclusion criteria

1. Patients having sign and symptoms of *Amavata* (Rheumatoid arthritis).
2. Patient of age between 20 years to 50 years will be
3. Patient with less than 5 years of
4. Patient able to participate in study and ready to follow the

Exclusion criteria

1. Patient with joint
2. Uncontrolled Diabetes Mellitus, Hypertension & other life threatening and complicated
3. Patient having dermatomyositis, scleroderma, acute rheumatic fever, gouty arthritis, infectious arthritis or Reiter's syndrome.
4. Patient having Skin allergy,
5. Pregnant and lactating

Grouping

Group A - *Vaitarana Basti* was administered in 2 sitting constituting of 21 days with 8 days in between.

Group B - *Shatapushpadi Lepa* was applied on the affected joint in 2 sitting constituting of 21 days with 8 days gap in between.

Eranda Sneha was given once in both the groups, for *Koshtha Shodhana*.

Assessment Criteria**Subjective Criteria**

Sandhishoola (Pain in Joints)	Score
No pain	0
Mild pain	1
Moderate pain but no difficulty in moving	2
Slight difficulty in moving	3
Much difficulty in moving bodily part	4

Sandhishotha (Swelling in Joints)	Score
No swelling	0
Minimal swelling (very slight swelling, indistinct border)	1
Mild swelling (defined swelling, distinct border)	2
Moderate swelling (about 1mm raised skin)	3
Severe swelling (raised skin > 1mm)	4

Sparshasahyata (Tenderness in Joints)	Score
No tenderness	0
Mild tenderness without grimace on face	1
Wincing on pressure	2
Wincing of face & withdrawal of affected part on pressure	3
Resist touching	4

Sandhigraha (Morning stiffness)	Score
No stiffness	0
Lasting < 15 min	1
15 min to 1 hour	2
1 to 2 hours	3
> 2 hour	4

Aruchi (Anorexia)	Score
No Aruchi (take full diet on proper gap)	0
Take moderate diet on proper gap between meals	1
Decreased amount of diet & increased gap between meals	2
Appetite towards only favourite foods	3
No feeling of appetite	4

Objective Criteria

- RA- factor
- Anti-CCP
- CRP
- ESR

Statistical Analysis

The information collected on the basis of observation made during the treatment was analysed on statistical criteria in terms of Mean score (X), Standard Deviation (S.D), & Mean difference percentage

- For single group of Subjective parameters - Wilcoxon signed - rank test
- For single group of Objective parameters - Paired T-test For intergroup comparison of Subjective parameters - Mann whitney test
- For intergroup comparison of Objective parameters - Unpaired T-test

The tests were carried at the 0.05, 0.001, 0.0001 level of P.

The obtained results were interpreted as:

- Non-significant $P > 0.05$
- Significant $P < 0.05$
- Highly significant $P < 0.001$
- Extremely significant $P < 0.0001$

Observations and Results

A total of 40 patients were registered (20 each group)

Demographic Data

Age: Out of 40 patients, the maximum number of patients, i.e., 48% were between the age of 41-50 years, followed by 40% between the age of 31-40 years, and 12% between the age of 20-30 years. The maximum number of patients belongs to the middle age groups, which shows its prevalence in this age group. At aging, the *Vyadhikshmatwa* start decreasing gradually and accumulation of *Dosha* occurs, particularly *Vata Dosha*, which is the major predisposing factor of the disease. That might be the reason that this age group is more prone to this disease.

Gender: 90% of patients in this study were females, and only 10% were males. It clearly shows its predominance in females. Women are three times more likely to develop RA, which may be due to hormonal factors such as estrogen and prolactin levels. Changes in hormonal status, like those occurring during pregnancy or menopause, can influence the onset and progression of the disease.

Marital Status: Maximum numbers of patients, i.e., 90% were married, 7% were unmarried, and 3% were either divorcees or widows. As this disease affects middle-aged groups, at this age most people are generally married. This is the reason the incidence of married patients was seen more in this study.

Habitat: 55% of patients in this study were from urban area, followed by 40% suburban, and 5% rural. It may be due to the fact that the trial is held in an urban area.

Religion: Maximum number of patients, i.e., 87% were Hindu and 13% were Muslims. It is nothing but only indicative of the demographic predominance of the Hindu community in the area.

Socioeconomic Status: Maximum numbers of patient i.e., 73%, were middle class, followed by 18% upper middle class, 7% lower middle class, and 2% poor. As the study was conducted in a Govt. institution, incidences of middle class were seen more. But there is no meaningful correlation between socioeconomic status and the disease.

Occupation: Maximum number of patients i.e., 60% were housewives, 38% were doing jobs, and 2% were students. Owing to the burden of taking care of the home, the family, and the children, housewives frequently neglect to eat on time and unknowingly do *Vishmashana*, *Adhyashana*, and *Ansana*, which leads to the formation of *Ama*, the main culprit of the disease.

Apart from that, housewives perform repetitive tasks (such as cooking, cleaning, and washing), due to which they have more contact with cold water, and it may put strain on joints and aggravate symptoms in individuals.

Agni: Agni assessment reveals that 47% of patients had *Vishmagni*, followed by 33% with *Mandagni* and 20% with *Samagni*. Agni is the foundation of health. Disturbance of Agni results in vitiation of *Dosha* and *Dhatus*. The maximum number of patients in this study had disturbed status of Agni. Improper digestion of food because of *Vishmagni* and *Mandagni* leads to the formation of *Ama*, which is the primary factor of this disease.

Koshtha: In this study, 52% of patients were *Madhyam Koshthi* and 48% were *Krur Koshthi*; there was no patient with *Mridu Koshtha*. *Koshtha* is the expression of bowel habit, which depends on the *Prakruti*.

Only *Madhyam* and *Krur Koshtha* were seen in this study. It may be in relation to the *Kapha* and *Vata* predominance in the study. Both the *Dosha* i.e., *Kapha* and *Vata* plays important role in the pathogenesis of disease.

Appetite: In this study, 57% patients had normal appetite and 43% had poor appetite. Although, poor appetite is seen in the patients of *Amavata* but in this study many patients had normal appetite. But this variation in the study can be due to the small sample size.

Nidra: The 60% patients had sound sleep and 40% had disturbed sleep there was no patient in excessive sleep. The disturbed sleep was may be due to the reason that pain aggravate at night.

Prakruti: The maximum number of patients, i.e., 45%, had *Vatakaphaja Prakruti*, followed by 35% with *Vatapittaja* and 20% with *Kaphapittaja*. *Prakruti Parikshana* does not give any idea of *Prakruti* of the individual with disease, as *Prakruti* is always natural while pathogenesis is always abnormal.

The predominance of *Vata*, *Kapha*, and *Mandagni* along with *Tridoshadushti* was found to play an important role. Hence, the predominance of patients with *Kaphavataja Prakruti* signifies the predilection of patients towards this disease.

Chief Complaints: Among chief complaints of *Amavata*, *Sandhishoola* and *Sandhigraha* were present in 97% of the patients, 85% had *Sandhishotha* and *Sparshasahyata* and 37% were had *Aruchi*. These complaints are must to diagnose the patients with *Amavata*, and maximum patients had these chief complaints.

Chronicity: Duration of symptoms reveals that 42% of the patients had chronicity between 1-3 years, followed by 30% having chronicity between 3-5 years, and 28% with chronicity of less than 1year. In the initial stage of *Amavata*, patients feel symptoms occasionally, and most of the patients ignore those symptoms due to a busy lifestyle and carelessness. When most patients visit the hospital, those symptoms no longer appear occasional. This might be the reason that most of the patients had chronicity between 1-3 years.

Family History: The data shows that 85% of the patients had no family history, while 15% patients had family history of *Amavata* (Rheumatoid Arthritis). Although no one knows the exact cause of the disease rheumatoid Arthritis and it is considered autoimmune yet, it is believed that an interplay between some genetic and environmental factors plays a role.

Effect of Treatment**1. Vaitarana Basti (Group - A)****Table 1: Subjective Parameters (Wilcoxon signed rank test)**

Subjectiveparameters	N	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
		BT	AT	BT	AT	BT	AT				
Sandhishoola	20	3.10	0.90	3.00	1.00	0.72	0.79	-4.035b	0.000055	70.97	E.S.
Sandhishotha	19	1.90	0.50	2.00	0.00	1.07	0.69	-3.825b	0.000131	73.68	H.S.
Sparshasahyata	17	1.60	0.60	2.00	0.50	0.99	0.68	-3.753b	0.000175	62.50	H.S.
Sandhigraha	20	2.55	0.45	2.00	0.00	0.76	0.94	-3.943b	0.000080	82.35	E.S.
Aruchi	8	0.80	0.40	0.00	0.00	1.15	0.60	-2.530b	0.011412	50.00	S.

Table 2: Objective Parameters (Paired t-test)

Objective Parameters		Mean	N	SD	SE	t-Value	P-Value	% Change	Result
RF	BT	74.13	20	67.39	15.07	0.147	0.885	0.57	N.S.
	AT	73.71	20	68.06	15.22				
Anti- CCP	BT	94.77	20	125.02	27.95	0.727	0.476	0.70	N.S.
	AT	94.11	20	125.58	28.08				
CRP	BT	8.29	20	11.04	2.47	-0.551	0.588	11.70	N.S.
	AT	9.26	20	12.69	2.84				
ESR	BT	46.50	20	18.84	4.21	5.433	0.000	27.53	S.

2. Shatpushpadi Lepa On Group-B Patients**Table 3: Subjective Parameters (Wilcoxon signed rank test)**

SubjectiveParameters	N	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
		BT	AT	BT	AT	BT	AT				
Sandhishoola	19	3.26	1.79	3.00	2.00	0.65	0.79	-3.934b	0.000083	45.16	E.S.
Sandhishotha	17	1.68	0.74	2.00	1.00	0.89	0.56	-3.819b	0.000134	56.25	H.S.
Sparshasahyata	19	1.74	1.11	2.00	1.00	0.73	0.57	-3.207b	0.001341	36.36	S.
Sandhigraha	19	2.47	1.74	2.00	2.00	0.70	0.73	-3.742b	0.000183	29.79	H.S.
Aruchi	7	0.47	0.47	0.00	0.00	0.70	0.70	.000c	1.000000	0.00	N.S.

Table 4: Objective Parameters (Paired t-test)

Objective Parameters		Mean	N	SD	SE	t-Value	P-Value	% Change	Result
RF	BT	62.08	19	53.50	12.27	-1.381	0.184	5.62	N.S.
	AT	65.57	19	55.74	12.79				
Anti- CCP	BT	105.85	19	144.77	33.21	-2.102	0.050	2.98	N.S.
	AT	109.01	19	148.11	33.98				
CRP	BT	7.87	19	9.86	2.26	1.805	0.088	3.76	N.S.
	AT	7.58	19	9.80	2.25				
ESR	BT	42.11	19	27.28	6.26	3.621	0.002	16.00	S.

Intergroup Comparison**Table 5: Cumulative table of intergroup comparison of subjective parameters (Mann Whitney U test)**

Variable	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value	Result
Sandhishoola	Group A	20	25.30	506.00	84.000	0.0012	Sig
	Group B	19	14.42	274.00			
	Total	39					
Sandhishotha	Group A	19	22.90	435.10	132.000	0.0060	Sig
	Group B	17	16.95	288.11			
	Total	36					

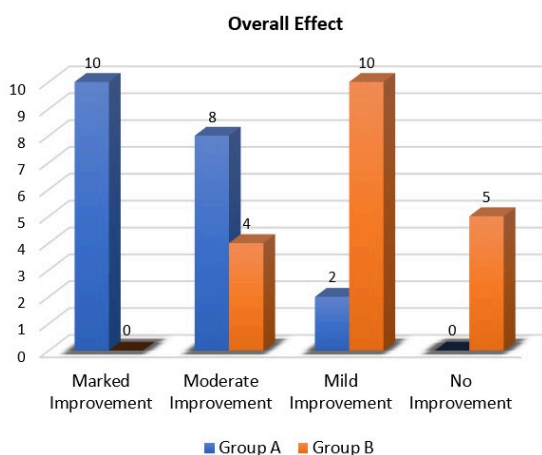
Variable	Group	N	Mean Rank	Sum of Ranks	Mann-Whitney U	P-Value	Result
Sparshasahyata	Group A	17	22.55	383.35	139.000	0.0102	Sig
	Group B	19	17.32	329.00			
	Total	36					
Sandhigraha	Group A	20	27.98	559.50	30.500	0.0000	Sig
	Group B	19	11.61	220.50			
	Total	39					
Aruchi	Group A	8	23.33	186.60	123.500	0.0051	Sig
	Group B	7	16.50	115.50			
	Total	15					

Table 6: Cumulative table of intergroup comparison of objective parameters (Unpaired t-test)

Variable	Group	N	Mean	SD	SE	t-Value	P-Value	Result
RF	Group A	20	0.42	12.82	2.87	1.019	0.315	N.S.
	Group B	19	-3.49	11.01	2.53			
Anti-CCP	Group A	20	0.66	4.07	0.91	1.945	0.059	N.S.
	Group B	19	-3.16	6.55	1.50			
CRP	Group A	20	-0.97	7.86	1.76	-0.700	0.489	N.S.
	Group B	19	0.30	0.57	0.13			
ESR	Group A	20	12.80	10.54	2.36	2.006	0.052	N.S.
	Group B	19	6.74	8.11	1.86			

Table 7: Overall effect of the therapy

Overall Effect	Group A		Group B	
	N	%	N	%
Complete remission (100% relief with no recurrence)	0	0.00%	0	0.00%
Marked Improvement (>75% - <100%)	10	50.00%	0	0.00%
Moderate Improvement (>50% - 75%)	8	40.00%	4	21.05%
Mild Improvement (>25% - 50%)	2	10.00%	10	52.63%
No Improvement (up to 25%)	0	0.00%	5	26.32%
Total	20	100.00%	19	100.00%



It can affect person's quality of life and make it difficult for them to perform day to day activities. Patients with joint pain sometimes need assistance with basic tasks. *Amavata* is one of such disability causing disease occurring due to *Mandagni*, & *Mithyahara Vihara*. *Ayurvedic* literature has mentioned a variety of external & internal treatment modalities for management of *Amavata*. Principal treatment of *Amavata* in *Chakradatta* is *Langhana*, *Swedana*, *Tikta* & *Katu Rasa Dravya*, *Deepaniya Dravya*, *Virechana* therapy, administration of *Basti*. Thus, in the present study for internal administration *Vaitarana Basti* was selected & for external use *Shatapushpadi Lepa* was selected.

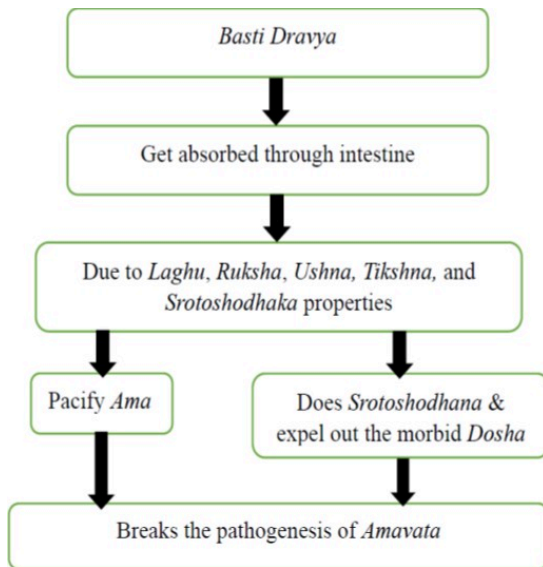
Probable mode of action of *Vaitarana Basti*

Vaitarana Basti is comprises of *Guda*, *Saindhava*, *Chincha*, *Murchhita Tila Taila*, and *Gomutra*. In *Chikitsa Sutra* of *Amavata*, *Kshara Basti* has been specially indicated.

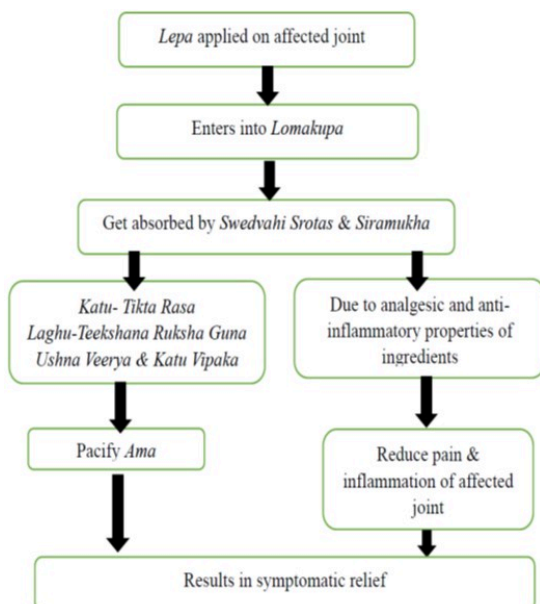
Discussion

Joint health is crucial for maintaining mobility, flexibility, and overall quality of life, particularly as we age.

Vaitarana Basti is also a type of *Kshara Basti*. In this *Basti*, maximum quantity is of *Gomutra*. Due to *Kshara Guna* of *Gomutra*, it has the property of *Lekhana* and *Rukshana* which are antagonistic to *Ama* and is beneficial in *Amavata*. *Vaitarana Basti* is considered *Laghu*, *Ruksha*, *Ushna*, *Tikshna*, and *Srotoshodhaka*. Owing to these properties, it is antagonistic to *Kapha* and *Ama*. The *Tikshna Guna* of *Basti* help in overcoming the *Srotodushti* resulting due to 'Sanga'.



Probable Mode of action of Lepa



In present study, *Lepa* was selected as an external application because of its *Srotoshodhaka* and *Kapha-Vata Shamaka* properties.[7] Apart from that respective *Guna Karma* of herbs, biological action of compound occurs due to the formation's combined effect (*Vata-Kapha Shamaka*).

When *Lepa* is applied over the affected joints, the active ingredients of *Lepa* enter the skin through *Romkupa* and further get absorbed through the *Swedvahi Srotas* and *Siramukha* it does the cutaneous biotransformation and which will pacify the *Doshas* and helps in *Samprapti-Vighatana* of the disease locally. Probable mode of action of *Shatapushpadi Lepa* is as follow:

Conclusion

Both *Vaitarana Basti* and *Shatapushpadi Lepa* are safe and effective in *Amavata*. No adverse effects were found in both the groups. In Group- A, extremely significant result ($P<0.0001$) was found in *Sandhishoola*, *Sandhigraha*. Highly significant ($P<0.001$) was found in *Sandhishotha* & *Sparshasahyata* and significant ($P<0.05$) was found in *Aruchi*. In Group- B, extremely significant result ($P<0.0001$) was found in *Sandhishoola*. Highly significant ($P<0.001$) was found in *Sandhishotha* and significant result ($P<0.05$) was found in *Sparshasahyata* and *Sandhigraha*. Whereas non-significant result ($P>0.05$) was found in *Aruchi*. In objective parameters both groups show non-significant result ($P>0.05$) in RF, Anti-CCP, CRP and significant result ($P<0.05$) in ESR. So, we can conclude that, *Vaitarana Basti* (Group A) and *Shatpushpadi Lepa* (Group B) both groups are significantly effective in condition of *Amavata* (Rheumatoid Arthritis). Percentage wise *Vaitarana Basti* has shown better results than *Shatapushpadi Lepa*.

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