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"CLINICAL EVALUATION OF *'ALAMBUSHADI GHANA VATI'* AND *'VAITARANA BASTI'* IN THE MANAGEMENT OF *AMAVATA*" (RHEUMATOID ARTHRITIS) - A RESEARCH ARTICLE

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ABSTRACT

Amavata is the second most common joint disorders. Now a day"s faulty dietary habits, unhealthy lifestyle and environment have led to different autoimmune disorders i.e. *Amavishajanya Vikara* and *Amavata* is one among them. Rheumatoid Arthritis can be correlated with *Amavata* in aspect of its clinical features like *Sanhishoola* (pain in joints) *Sandhijadyta* (stiffness in joints), *Sandhishotha* (swelling in joints) etc. To solve this unpredictable clinical condition, many research works have been conducted, but for the treatment of *Amavata*, safe, effective and treatments with mild complication is still needed. In this study, 40 patients diagnosed with *Amavata* were registered and randomly grouped into two. In Group A, *Alambushadi Ghana Vati* 500mg/ twice a day and in Group B, *Alambushadi Ghana Vati* (500mg/ twice a day) and *Vaitarana Basti* (15 *Basti*) were given. On analysis the results obtained, it was found that patients of Group B showed much improvement as compared to patients of Group A in the management of *Amavata*.

KEYWORDS: *Ama, Aamvata,* Rheumatoid Arthritis, *Alambushadi Ghana Vati, Vaitarana Basti.*

INTRODUCTION

The word *Amavata* is existent of a combination of two words, *Ama* and *Vata*. The disease is especially due to derangement of Agni, resulting in the production of *Ama* which circulates in the body through *Dhamanies,* takes shelter in the *Shleshma Sthana,* producing symptoms and gets located in *Sandhis* (joints) causing pain, stiffness, swelling and tenderness in small and big joints, making a person crippled.[1] According to modern science, *Amavata* can be correlated with Rheumatoid Arthritis[2] (R.A.), which is a chronic autoimmune disease that causes inflammation and deformity of the joints. RA can also cause inflammation of the tissues around the joints as well as other organs in the body. It is a common disorder, with varied clinical signs and symptoms related to multiple anatomical sites, both articular and extra- articular. *Amavata* (Rheumatoid Arthritis) is a challenge to the physician owing to its chronicity, incurability, complications, morbidity and crippling nature[3]. Allopathic system of medicine has got an important role to play in overcoming symptoms of articular disease[4]. Drugs are available to ameliorate the symptoms due to inflammation, in the form of Non-steroidal Anti-inflammatory Drugs (NSAIDs), and the long-term suppression is achieved by the Disease- Modifying Anti rheumatic Drug (DMARDS), but most of the NSAID have gastrointestinal side effects, whereas DMARDs have marrow, renal, and hepatic suppression. Hence, the management of this disease in other system or medicine is not up to the level of satisfaction for the patients and patients are aware of the importance of *Ayurveda* and are hoping to over this challenge. That‟s why in present clinical study, two drugs,, *Alambushadi Ghana Vati'* and,, *Vaitarana Basti'* have been attempted to evaluate their comparative efficacy in *Amavata*.

MATERIAL AND METHODS

Selection criteria

The study was conducted on 40 clinically diagnosed and confirmed patients of *Amavata* (Rheumatoid Arthritis). The selection of patients 16-50 yrs of age with classical features of *Amavata* was made from OPD and IPD of Dr. Saravepalli Radhakrishanan Rajasthan *Ayurveda* University, Jodhpur, were selected for the present works; irrespective of their sex, religion, education, etc.

Detailed research Performa was prepared including all the signs and symptoms of the disease.

(A) Inclusion Criteria

1. The Patients between the age group of 16 to 50 years in either sex presenting with clinical features of *Amavata.*
2. Pre-diagnosed and confirmed patients of *Amavata* (Chronicity <6 years).
3. Patients willing to sign the consent form.

(B) Exclusion Criteria

1. Patients of age below 16 years and above 50 years of either sex.
2. Chronicity of *Amavata* more than 6 years
3. Patients having Neoplasm of spine, Gout, Enclosing spondylitis, Traumatic arthritis and Pyogenic Osteomyelitis etc.
4. Patients having any severe disease like Cardiac disease, pulmonary tuberculosis, Diabetes mellitus, Renal function impairment etc.
5. Patients with extremely reduced joint space and having bone deformity
6. Pregnant women and lactating mother.

DIAGNOSTIC CRITERIA FOR RHEUMATOID ARTHRITIS

The 1988 revised criteria by American college of Rheumatology for diagnosis of Rheumatoid arthritis is[5]

1. **Morning stiffness:** Stiffness in and around the joints lasting 1 hour before maximal improvement.
2. **Arthritis of three or more joint area:** At least three areas, observed by a physician simultaneously, have soft tissue swelling or joint effusion, not just bony overgrowth.
3. **Arthritis of hand joints:** Arthritis of wrist, metatarsophalangeal joint or proximal inter phalangeal joint.
4. **Symmetrical arthritis :** Involvement of same joint area on both sides of the body
5. **Rheumatoid Nodules:** Subcutaneous bony prominences over extensor surfaces or articular regions observed by a physician.
6. **Serum Rheumatoid Factor :** Demonstration of abnormal amount of serum rheumatoid factor (auto antibodies reactive with Fc portion of IgG) by any method for which the result has been positive in less than 5% of normal control subjects.
7. **Radiological changes:** Typical changes of RA on posterior –anterior hand and wrist radiographs, which must include erosions, decalcification localized in or most marked to the involved joints.

*Four or seven criteria are required to classify a patient as having rheumatoid arthritis.

*Patient with two or more clinical diagnosis is not excluded. Criteria„ a‟ and„ d‟ must be present for at least 6 weeks.

(C) Plan of Studies

The study was conducted on 2 groups of 40 patients (20 patients in each group.)

Group A - 20 clinically diagnosed and registered patients of *Alambushadi Ghana Vati* was given in dose of 2 tab. (each 500 mg.) twice time in a day with lukewarm milk, after meal for 60 days.

Group B – 20 clinically diagnosed and registered patients of *Alambushadi Ghana Vati* 2 tab. twice times in a day with lukewarm milk, after meal for 60 days and *'Vaitarana Basti'* (15 *Basti*) had given commonly.

Note: To pacify enhanced *Vata Dosha* during *Vaitarana Basti* period *Anuvasana Basti* was also given to the patients. It consisted Tila *taila* and one pinch of *Saindhavas* mixed well. It was given in the dose of 50-60ml, whenever the patients developed *Vata Vridhi Lakshana*, while receiving *Vaitarana Basti*.

Dose of Basti *Dravya*:

Vaitarana Basti- (approximately 300-350ml), after the meal.

Anuvasana Basti- approximately 50- 60ml, after the meal.

Objective Parameters (Laboratory Profile).

Following investigation was assessed for objective parameters –

- Routine Blood Examination – Hb%, TLC, DLC, ESR
- Fasting Blood Sugar (FBS)
- Serum Uric acid
- C- Reactive Protein
- Rheumatoid Arthritis Factor (RA factor)
- Urine Examination Routine and Microscopic (R/M)
- Radiological investigation – x – Ray of appropriate joint (AP and Lateral view) as per requirement.

Follow-up

A follow –up study was carried out for 60 days after completion of treatment.

Dietary Restrictions

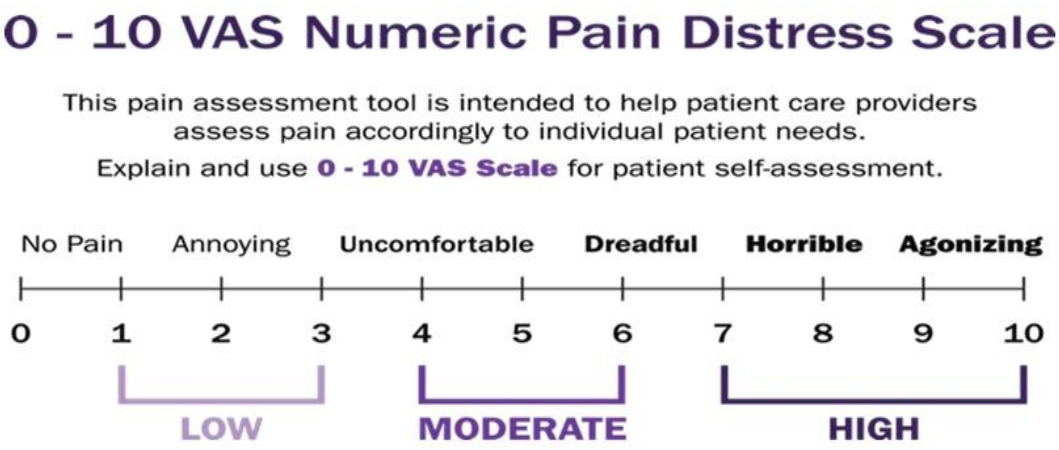
The patients were rigorously advised to follow dietary restrictions and changes in lifestyle.

- **Criteria for Assessment**

Clinical estimation of the disease, its severity, intensity and grades of inflammation were objective done in terms of pain in joint by Visual Analogue Scale. The relative intensity of all these criteria– Pain in joints (*Shandhishoola*), Swelling of joint (*Sandhishotha*), Stiffness of joints (*Sandhijadyta*), Tenderness of joint, Restriction of movement, & *Aruchi, Angmarda, Trishna, Alasya, Gaurava, Jwara Apaka, Bhumutrata* were recorded according to the rating scales in each patient at the initial stage. These are assessed observing clinically active joints.

Pain in joint

Table no. 1: Assessment of pain will be done by Visual Analogue Scale[6]



Sr. No.	Symptoms	Grading
1.	No pain	00
2.	Distress	01
3.	Annoying	02-03
4.	Uncomfortable	04
5.	Dreadful	05-06
6.	Horrible	08
7.	Unbearable distress	09
8.	Agonizing	10

Assessment of sign and symptoms was done pre and post-trial on severity grading scale developed by Prof. Ram Kishor Joshi et.al.

Table no 2: Severity Grading Scale.

Sr. No.	Severity	Grading	Percentage
1.	Absent	0	0%
2.	Mild	1	1-25%
3.	Moderate	2	26 -50%
4.	Severe	3	51 -75%
5.	Agonising	4	76 – 100%

1. ***Sandhishoola*** **(Pain in joints)**

Sr. No.	Symptoms	Grading
1.	No pain	00
2.	Mild pain of bearable nature, comes Occasionally	01
3.	Moderate pain, but no difficulty in joint Movement	02
4.	Slight difficulty in joint movement due to Pain or severe pain	03

2. ***Sandhishotha*** **(Swelling of the joints)**

1.	No swelling	00
2.	Mild swelling	01
3.	Moderate swelling	02
4.	Severe swelling	03

3. ***Sandhijadyta*** **(Stiffness of the joint)**

1.	No stiffness or stiffness lasting for 5 mints	00
2.	Stiffness lasting for 5 mints to 2 hrs.	01
3.	Stiffness lasting for 2 to 8 hrs.	02
4.	Stiffness lasting for more than 8 hrs.	03

4. ***Angmarda*** **(Body ache)**

1.	No body ache	00
2.	Generalized body ache of end on during The day	01
3.	Generalized body ache during most part Of the day not affecting any work	02
4.	Generalized body ache throughout the day But person is able to do normal routine	03
5.	Generalized body ache enough to affect Routine work for all the day	04

5. ***Aruchi*** **(Anorexia)**

1.	Willing toward all *Bhojya Padarth*	00
2.	Unwilling toward some specific *Ahara* but less than normal	01
3.	Unwilling toward some specific *Katu*/*Ama Madhura* food	02
4.	Unwilling for food but could take the meal	03
5.	Totally unwilling for meal	04

6. *Trishna* (Excessive thirst)

1.	Feeling of thirst (7-9 times/24 hrs.) and Relieved by drinking water	00
2.	Feeling of moderate thirst (>9-11 times/24) And relieved by Drinking water.	01
3.	Feeling of excessive thirst (>11-13 times /24 hrs.) Not relieved by drinking water.	02
4.	Feeling of severe thirst (>13 times) not Relieved by drinking water	03

7. *Alasya* (Laziness)

1.	**No *Alasya***	**00**
2.	Doing satisfactory work /late initiation, Like to sit in comparison to stand	01
3.	Doing unsatisfactory work /late initiation Like to sit in comparison to stand	02
4.	Doing little work very slow, like to lie Down in comparison to sit	03
5.	Don‟t want to do work/no initiation, like To sleep in comparison to lie down	04

8. *Gaurava* (Heaviness)

1.	No feeling of heaviness	00
2.	Occasional feeling of heaviness	01
3.	Continuous feeling of heaviness, but Patient does usual work	02
4.	Continuous feeling of heaviness which Hampers usual work	03
5.	Unable to do any work due to heaviness	04

9. *Jwara* (Fever)

1.	**No fever**	**00**
2.	Occasional fever subsides by itself	01
3.	Daily one subsides by itself	02
4.	Daily once subsides by drug	03
5.	Continuous fever	04

10. *Apaka* (Indigestion of food)

1.	No *Apaka*/ Indigestion/ prolongation of Food digestion period occasionally related To heavy meal	00
2.	*Avipaka* occurs daily after each meal take 4 to 6 hour for *Udagara shuddhi* etc.	01
3.	Eat only once in a day and does not have Hungry by evening	02
4.	Never gets hungry always felling Heaviness in abdomen	03

11. *Bahumootrata* (frequency of micturition per 24 hours)

1.	Less than 4 times /24 hrs.	00
2.	4-6 times /24 hrs.	01
3.	6-10 times/24 hrs.	02
4.	10 times/24 hrs.	03

Functional Assessment: The following sequential functional tests were carried out for objective parameters of the improvement of *Amavata* patients.

1. Walking time: The patients were asked to walk for few feet and the time taken was recorded before and after the treatment by using stop watch.

2. Grip strength: To find out the functioning capacity of the affected upper limb, the patients‟ ability to compress a dilated ordinary sphygmomanometer was recorded before and after the treatment.

3. Foot pressure: To have an objective aspect of the functioning capacity of the legs, foot pressure was recorded by the ability of the patients to press a weighing machine.

4. General functional capacity

- Complete ability to carry on all routine duties 0
- Adequate normal activity despite slight difficulty in joint movement 1
- Few activities are persisting, but patient can take care of himself 2
- Few activities are persisting and patient requires an attendant to take care of himself 3
- Patients are totally bedridden 4

Trial Drug with Doses: Both the trial drugs were prepared at Dr Saravepalli Radhakrishanan Rajasthan *Ayurveda* University, Jodhpur. The composition is provided at Table no.1and 2.

***Alambushadi Ghana Vati*[7]**

Table no. 1: showing the contents of *Alambushadi Ghana Vati.*

S.no.	Constituents	Botanical Name	Part used	Proportion
1	*Aalambusha*	*Mimosa pudica*	Whole plant /Root	1 Part
2	*Gokshur*	*Tribulus terrestris*	Fruit /Root	1 Part
3	*Guduchi*	*Tinospora cordifolia*	Stem	1 Part
4	*Vridhdharu*	*Argyreia speciosa*	Root	1 Part
5	*Pippali*	*Pipper longum*	Fruit /Root	1Part
6	*Trivrita*	*Operculina turpenthum*	Root bark	1 Part
7	*Musta*	*Cyperus rotundus*	Stem	1 Part
8	*Varun*	*Crataeva nurvala*	Bark	1 Part
9	*Punarnava*	*Boerhavia diffusa*	Root /Seeds / Whole plant	1Part
10	*Haritaki*	*Terminalia chebula*	Fruit	1Part

11	*Bibhitaki*	*Terminalia bellirica*	Fruit	1Part
12	*Amalaki*	*Embelica officinalis*	Fruit	1part
13	*Nagar*	*Zingiber officinalis*	Stem	1 part

***Vaitarana Basti*[8]**

Table no. 2: showing the contents of the *Vaitarana Basti.*

Sr. No.	*Sanskrit* Name	Botanical Name	Part Used	Ratio & in gm. for each *Basti*
1.	*Amilka*	*Tamarindus Indica*	*Phala majja*	4 part (40 gm.)
2.	*Guda*	-	-	2 part (20 gm.)
3.	*Saindhava*	-	-	1 part (10 gm.)
4.	*Gomutra*	-	-	16 part (160ml)
5.	*Tila Taila*	*Sesamum Indicum*	Seed oil	As per requirement (20 – 40 ml)

Group A: *Alambushadi Ghana Vati* - The patients of this group were treated with *Alambushadi Ghana Vati* at a dose of 500mg twice a day for 60 days with lukewarm milk.

Group B: *Alambushadi Ghana Vati* and *Vaitarana Basti* - The patients of this group were treated with *Alambushadi Ghana Vati* at a dose of 500mg twice a day for 60 days with lukewarm milk and *'Vaitarana Basti'* (15 *Basti*) had given commonly.

Statistical Analysis

The obtained information was analysed statistically. Paired t-test was carried out to evaluate statistical significant and $P < 0.001$ is considered as highly significant.

RESULTS AND OBSERVATIONS

In present study 21 patients in age group 31-40 years & 13 patients in age group 41- 50 years were found; it shows overall 50% patients belonged to 3rd to 5th decade of life. Incidence of disease is found notably higher in females (60%) than in males (40%). This suggests that the incidence of *Amavata* is more common in female than males.

Majority of the patients (92.50%), belonged Hindu religion; 95% patients were married. Out of which, maximum 57.50% patients were housewives followed by 17.50% labours, about 50% patients belonged to Middle class. Max.37.50% patients of *Vata- Kaphaj Prakriti* which is highly associated with the development of *Amavata,* 40% patients were of *Madhyama Sara,* 72.50% were having *Madhyama Samhanan,* 57.50% patients with *Madhyama Satmya,* 77.50% patients with *Madhyama Satva,* 52.50% patients showed *Avara Ahara Shakti,*

52.50% patients showed *Avara Vyayama Shakti*, 45% patients of showed *Kroora Kostha*, maximum 52.50% patients were of *Mandagni* in this type of Agni there is predominance of *Vata* & *Kapha Dosha*, which may play major role in developing the pathogenesis of *Amavata*, maximum addicted 57.50% patients found were Tea, maximum 35% patients found duration of illness < 1 year, 57.50% patients positive drug history of Allopathic medicine. Maximum patients had *Ati Guru Ahara* & *Viruddha Ahara* 85% forward by *Addhyashana* & *Ruksha Ahara* in 82.50%, *Ati Madhura* in 80%, *Snigdha Ahara* in 77.50%, *Vishamashana Ahara* in 75%, *Ati Drava Ahara* in 45%, *Ativyayama* in 67.50%, *Bhojanottara Vyayama* and *Nischalata* in 65%, *Divaswapna* and *Ratri jagrana* in 62.50%, *Vishama Shayya* in 45%, *Chinta* in 35%, *Bhaya* & *Shoka* in 32.50% as *Nidana* of *Amavata*.

Patients have positive family history of the disease, Maximum 90% patients had C-RP, 52.50% patients had R.A. factor positive before the treatment. 100% patients had *Sandhishoola, Sandhijadyta, Sandhishotha,* 92.50% *Aruchi,* 87.50% *Alasya*, 82.50% patients had *Gaurava* & *Bahumootra*, 77.50% patients had *Angmarda* & *Apaka*, 70% patients had *Trishana*, 27.50% patients had *Jwara* before the treatment, maximum 92.50% patients were had Elbow joint, 87.50% Knee joint, 77.50% Wrist, 72.50% Shoulder, 67.50% Proximal inter phalangeal joint, 45% Metacarpal phalangeal, 42.50% Ankle joint,25% Metatarsophalangeal, 22.50% had Distal inter phalangeal (UL) joint involvement.

Comparative effect of *Alambushadi Ghana Vati* and *Vaitarana Basti* on cardinal symptoms of Amavata.

Table No. 3: Showing Effect of Therapy in Subjective Parameters.

Variable	Group	Mean		Mean Diff.	% Relief	SD±	SE±	P	S
		B.T	A.T						
Sandhishooa	Gr. A	3.0	1.9	1.1	36.67	0.3078	0.06882	<0.05	S
	Gr. B	3.0	1.1	1.9	63.33	0.3663	0.08192	<0.0001	HS
Sandhijadya	Gr. A	2.75	1.70	1.05	38.18	0.2236	0.05000	<0.05	S
	Gr. B	2.85	1.0	1.85	64.91	0.4894	0.1094	<0.0001	HS
Sandhishota	Gr. A	2.85	1.9	0.95	33.33	0.2236	0.05000	<0.05	S
	Gr. B	2.70	0.85	1.85	68.51	0.3663	0.08192	<0.0001	HS
Angmarda	Gr. A	2.80	1.8	1.00	35.71	0.7255	0.1622	<0.0001	HS
	Gr. B	2.70	1	1.70	62.96	1.081	0.2417	<0.0001	HS
Aruchi	Gr. A	3.10	1.90	1.20	38.70	0.5231	0.1170	<0.05	S
	Gr. B	3.10	0.90	2.20	77.96	0.8584	0.1919	<0.0001	HS
Trishna	Gr. A	1.75	1.05	0.7	40.00	0.6569	0.1469	<0.0001	HS
	Gr. B	2.35	0.9	1.45	61.70	0.8256	0.1846	<0.0001	HS
Alasya	Gr. A	3.20	2.05	1.15	35.93	0.6708	0.1500	>0.05	NS
	Gr. B	3.25	1.15	2.10	64.61	0.9679	0.2164	<0.05	S
Gaurava	Gr. A	2.95	2.0	0.95	32.20	0.6048	0.1352	<0.0001	HS

	Gr. B	3.00	1.15	1.85	61.66	0.9333	0.2087	<0.0001	HS
Jwara	Gr. A	1.05	0.65	0.4	38.09	0.5982	0.1338	>0.05	NS
	Gr. B	0.30	0.10	0.2	66.66	0.4104	0.09177	<0.05	S
Apaka	Gr. A	2.20	1.30	0.9	40.90	0.6407	0.1433	<0.0001	HS
	Gr. B	2.25	0.80	2.05	81.11	0.8256	0.1846	<0.0001	HS
Bahumootrata	Gr. A	1.70	1.05	0.65	38.23	0.5871	0.1313	>0.05	NS
	Gr. B	2.15	0.80	1.35	62.79	0.7452	0.1666	<0.05	S

(HS: Highly Significant S: Significant NS: Non- Significant)

Effect of Therapy on *Sandhishoola* Score in Both Groups

- **In Group A** the mean Score before treatment was 3.0 which lowered down to 1.9 after treatment, with SD± 0.3078 giving a relief of 36.67% which was statistically **significant (P<0.05).**
- **In Group B** the mean Score before treatment was 3.0 which lowered down to 1.1 after treatment, with SD± 0.3663 giving a relief of 63.33% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Sandhijadyta* Score in Both Groups

- **In Group A** the mean Score before treatment was 2.75 which lowered down to 1.70 after treatment, with SD± 0.2236 giving a relief of 38.18% which was statistically **significant (P<0.05).**
- **In Group B** the mean Score before treatment was 2.85 which lowered down to 1.0 after treatment with SD± 0.4894 giving a relief of 64.91% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Sandhishotha* Score in Both Groups

- **In Group A** the mean Score before treatment was 2.85 which lowered down to 1.90 after treatment, with SD± 0.2236 giving a relief of 33.33% which was statistically **significant (P<0.05).**
- **In Group B** the mean Score before treatment was 2.70 which lowered down to 0.85 after treatment with SD± 0.3663 giving a relief of 68.51% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Angmarda* Score in Both Groups

- **In Group A** the mean Score before treatment was 2.80 which lowered down to 1.80 after treatment, with SD± 0.7255 giving a relief of 35.71% which was statistically **highly significant (P<0.0001).**

➢ **In Group B** the mean Score before treatment was 2.70 which lowered down to 1.00 after treatment with SD± 1.081 giving a relief of 62.96% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Aruchi* Score in Both Groups

➢ **In Group A** the mean Score before treatment was 3.10 which lowered down to 1.90 after treatment, with SD± 0.5231 giving a relief of 38.70% which was statistically **significant (P<0.05).**

➢ **In Group B** the mean Score before treatment was 3.10 which lowered down to 0.90 after treatment with SD± 0.8584 giving a relief of 77.96% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Trishna* Score in Both Groups

➢ **In Group A** the mean Score before treatment was 1.75 which lowered down to 1.05 after treatment, with SD± 0.6569 giving a relief of 40% which was statistically **highly significant (P<0.0001).**

➢ **In Group B** the mean Score before treatment was 2.35 which lowered down to 0.90 after treatment with SD± 0.8256 giving a relief of 61.70%% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Alasya* Score in Both Groups

➢ **In Group A** the mean Score before treatment was 3.20 which lowered down to 2.05 after treatment, with SD± 0.6708 giving a relief of 35.93% which was statistically **non-significant (P>0.05).**

➢ **In Group B** the mean Score before treatment was 3.25 which lowered down to 1.15 after treatment with SD± 0.9679 giving a relief of 64.61%% which was statistically **significant (P<0.05).**

Effect of Therapy on *Gaurava* Score in Both Groups

➢ **In Group A** the mean Score before treatment was 2.95 which lowered down to 2.0 after treatment, with SD± 0.6048 giving a relief of 32.20% which was statistically **highly significant (P>0.0001).**

➢ **In Group B** the mean Score before treatment was 3.00 which lowered down to 1.15 after treatment with SD± 0.9333 giving a relief of 61.66%% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Jwara* Score in Both Groups

- **In Group A** the mean Score before treatment was 1.05 which lowered down to 0.65 after treatment, with SD± 0.5982 giving a relief of 38.09% which was statistically **non-significant (P>0.05).**
- **In Group B** the mean Score before treatment was 0.30 which lowered down to 0.10 after treatment with SD± 0.4104 giving a relief of 66.66%% which was statistically **significant (P<0.05).**

Effect of Therapy on *Apaka* Score in Both Groups

- **In Group A** the mean Score before treatment was 2.20 which lowered down to 1.30 after treatment, with SD± 0.6407 giving a relief of 40.90% which was statistically **highly significant (P<0.0001).**
- **In Group B** the mean Score before treatment was 2.25 which lowered down to 0.80 after treatment with SD± 0.8256 giving a relief of 81.11%% which was statistically **highly significant (P<0.0001).**

Effect of Therapy on *Bahumootrata* Score in Both Groups

- **In Group A** the mean Score before treatment was 1.70 which lowered down to 1.05 after treatment, with SD± 0.5871 giving a relief of 38.23% which was statistically **non-significant (P>0.05).**
- **In Group B** the mean Score before treatment was 2.15 which lowered down to 0.80 after treatment with SD± 0.7452 giving a relief of 62.79%% which was statistically **significant (P<0.05).**

Table No. 4: Intergroup Comparison of Group A & Group B for subjective Parameters.

Variable	Groups	(AT) Mean	SD±	SE±	P	S
Sandhishoola	A	1.9	0.54	0.06	>0.05	NS
	B	1.1	0.42	0.17		
Sandhijadyta	A	1.70	0.57	0.13	>0.05	NS
	B	1.00	0.46	0.10		
Sandhishotha	A	1.90	0.31	0.07	>0.05	NS
	B	0.85	0.59	0.13		
Angmarda	A	1.80	1.20	0.27	<0.05	S
	B	1.00	0.73	0.16		
Aruchi	A	1.90	0.72	0.16	<0.0001	HS
	B	0.90	0.64	0.14		
Trishna	A	1.05	0.94	0.21	>0.05	NS
	B	0.90	0.64	0.14		

Alasya	A	2.05	1.05	0.23	<0.0001	HS
	B	1.15	0.75	0.17		
Gaurava	A	2.00	1.17	0.26	<0.0001	HS
	B	1.15	0.67	0.15		
Jwara	A	0.65	0.99	0.22	<0.05	S
	B	0.10	0.31	0.07		
Apaka	A	1.30	0.86	0.19	<0.05	S
	B	0.80	0.52	0.12		
Bahumootrata	A	1.05	0.83	0.18	>0.05	NS
	B	0.80	0.52	0.12		

In this study *Sandhishoola, Sandhijadyta, Sandhishotha* is statically non-significant (P > 0.05), *Angmarda* is statically significant (P < 0.05), *Aruchi* is statically highly significant (P < 0.0001), *Trishna* is non-significant (P > 0.05), *Alasya* and *Gaurava* are statically highly significant (P < 0.0001), *Jwara* and *Apaka* are statically significant (P < 0.05), and *Bahumootrata* is statically non-significant (P > 0.05).

Table No. 5: Showing effect of Therapy on Lab Investigations (Objective Parameters) (Paired 't' Test).

Variable	Group	Mean		Mean Diff.	% relief	SD±	SE±	T	P	S
		B.T.	A.T.							
Hb% Gm. %)	Gr. A	9.245	11.39	2.145	23.20	1.537	0.3436	6.242	<0.0001	HS
	Gr. B	8.28	11.38	3.1	37.43	1.246	0.2737	11.12	<0.0001	HS
TLC	Gr. A	6690	6945	255	3.81	123.4	27.60	9.239	<0.0001	HS
	Gr. B	5750	6630	880	15.30	980.1	219.20	4.015	<0.05	S
ESR	Gr. A	67.1	57.75	9.4	14.00	1.899	0.4247	22.01	<0.0001	HS
	Gr. B	71.7	53.3	18.4	25.66	4.342	0.9709	14.11	<0.0001	HS

(Hb%- Haemoglobin; TLC- Total Leucocytes Count; ESR- Erythrocyte Sedimentation Rate)

Effect of Therapy on Hb% Score in Both Groups

In Group A the mean Score before treatment was 9.245 which grows up to 11.39 after treatment, with SD± 1.537 giving an improvement of 23.20% which was statistically **highly significant (P < 0.0001).**

- **In Group B** the mean Score before treatment was 8.28 which grows up to 11.38 after treatment, with SD± 1.246 giving an improvement of 37.43% which was statistically **highly significant (P < 0.0001).**

Effect of Therapy on TLC Score in Both Groups

- **In Group A** the mean Score before treatment was 6690 which grows up to 6945 after treatment, with SD± 123.4 giving an improvement of 3.81% which was statistically

highly significant (P < 0.0001).

- **In Group B** the mean Score before treatment was 5750 which grows up to 6630 after treatment, with SD± 980.1 giving an improvement of 15.30% which was statistically **significant (P < 0.05).**

Effect of Therapy on ESR Score in Both Groups

- **In Group A** the mean Score before treatment was 67.10 which grows up to 57.75 after treatment, with SD± 1.899 giving an improvement of 14% which was statistically **highly significant (P < 0.0001).**
- **In Group B** the mean Score before treatment was 71.70 which grow up to 53.30 after treatment, with SD± 4.342 giving an improvement of 25.66% which was statistically **highly significant (P < 0.0001).**

Table No. 6-: Intergroup Comparison of Group A & Group B for Lab investigation (Unpaired t Test).

Variable	Groups	(AT) Mean	SD±	SE±	t value	P	S
Hb%	A	11.39	1.574	0.352	0.0206	> 0.05	NS
	B	11.38	1.587	0.333			
TLC	A	6945.00	861.75	192.69	0.8789	> 0.05	NS
	B	6630.00	1351.45	302.19			
ESR	A	57.75	19.71	4.41	0.6095	> 0.05	NS
	B	53.30	26.37	5.90			

(H.S: Highly Significant S: Significant NS: Non- Significant)

1) Hb%: The P > 0.05 which is statistically non-significant which shows that there is no statistical difference of both treatments on Hb%.

2) TLC: The P > 0.05 which is statistically non-significant which shows that there is no statistical difference of both treatments on TLC.

3) ESR: The P > 0.05 which is statistically non-significant which shows that there is no statistical difference of both treatments on ESR.

Table No. 7: Showing the % Relief in Both the Groups in Subjective Parameters.

Subjective Parameters	% Relief in Group A	% Relief in Group B
Sandhishoola	36.67	63.33
Sandhijadyta	38.18	64.91
Sandhishotha	33.33	68.51
Angmarda	35.71	62.96
Aruchi	38.70	77.96

Trishna	40.00	61.70
Alasya	35.93	64.61
Gaurava	32.20	61.66
Jwara	38.09	66.66
Apaka	40.90	81.11
Bahumootrata	38.23	62.79
Total	37.08	66.92

Table No. 8: Showing the % Relief in Both the Groups in Lab. Investigation (Objective Parameters).

Objective Parameters	% Relief in Group A	% Relief in Group B
Hb%	23.20	37.43
TLC	3.81	15.30
ESR	14.00	25.66
Total	13.67	26.13

Overall Effects of Therapy

For assessment of improvement in Clinical Manifestation following grading scale developed by Prof Ram Kishor Joshi et. al. Used.

Sr. No.	Observation	Percentage
1.	No relief	0%
2.	Mild relief	1-25%
3.	Moderate relief	26-50%
4.	Significant relief	51-75%
5.	Excellent relief	76-100%

In present study – overall effect of therapy as follow.

Table No. 9: Showing the overall effect of therapy.

Effects	Group A		Group B	
	No. of Patients	Percentage	No. of Patients	Percentage
No relief	00	00	00	00
Mild relief	09	45	01	5
Moderate relief	08	40	10	50
Significant relief	3	15	08	40
Excellent relief	00	00	1	5

In Group A – Significant relief in 15%, moderate relief in 40%, whereas 45% were found mild relief, while in Group B- Excellent relief in 5%, significant relief 40%, moderate relief in 50% whereas 5% were found mild relief.

Thus**, in Group B** (*Alambushadi Ghana Vati* & *Vaitarana Basti*) number of patients i.e. 40% showed significant relief & 5% showed excellent relief, while in Group A (*Alambushadi*

Ghana Vati) number of patients in 40% showed moderate relief & while 15% showed Significant relief.

DISCUSSION

Largest numbers of patients had involvement of *Kaphavriddhi* and *Prakopa*, followed by *Vata Vriddhi* and *Prakopa*, *Dosha* and *Dushti* of *Rasavaha*, *Asthivaha*, *Majjavaha*, *Purishavha* and *Annavaha Srotas*, which is in accordance with the main *Srotas* involved in the *Amavata Roga Samprapti*.

Maximum number of patients (52.50%) belonged to the age group of 31-40 years, which shows its predominance in middle-age group. In this stage of life, *Vyadhikshmatwa* gradually decrease and accumulation of *Dosha* occurs, particularly *Vata Dosha* which acts as the major predisposing factor for this disease process. Hence, this age group is more prone for this disease. Majority of the patients (60%) were females, which clearly shows the predominance of the disease in females. Textual reference also reflects the predominance of rheumatoid arthritis in females. The nature of the household work especially after taking meal, which is one of the causative factors mentioned in *Ayurvedic* text, may be the responsible factors of *Amavata*. In the present study, Group A – Significant relief in 15%, moderate relief in 40%, whereas 45% were found mild relief, while in Group B- Excellent relief in 5%, significant relief 40%, moderate relief in 50% whereas 5% were found mild relief. On comparing the effect of two groups it can be concluded that Group B („*Alambushadi Ghana Vati'* & *'Vaitarana Basti'*) provided better relief than Group A („*Alambushadi Ghana Vati'*) in most of the sign and symptoms of the disease at significant level.

Probable mode of action of *Alambushadi Ghana Vati*:

This trial was chosen from *Chakradutta Amavata chikitsa prakarana* 25/19-22 & contents of *Alambushadi Ghana Vati* are *Alambushadi (Lajjalu), Gokshura, Guduchi, Vridhdharu, Pippali, Trivrita, Musta, Varun, Punarnava, Haritaki, Bibhitaki, Amalaki, Shunthi* in equal proportion of all drug in the combination.

In this combination, *Katu, Tikta* are dominant Rasa in formulation so help in digestion of *Ama* & finally in brakeage of pathogenesis of disease. Apart from this, there is dominancy of *Laghu, Ruksha Gunas* in the *Alambushadi Ghana Vati* which also helps in *Kaphaghna* property. 7 *Dravya* out of 13 in the formulation possess *Laghu* & *Ruksha Guna*. This formulation is also dominantly has 8 *Dravya* with *Ushna Virya* which also helps to pacify the

Vata Dosha. 8 Dravya also have *Shothahara* & *Anulomana* properties. With these properties *Alambushadi Ghana Vati* is able to digest *Ama* & to control the *Vata Dosha*.

In present study, trial drug *Alambushadi Ghana Vati's* contents like *Alambusha, Gokshur, Guduchi, Vridhdharu* possesses *Tikta, Katu Rasa Ushna Virya*, and *Vednasthapna, Shothahara* properties and *Pippali, Trivrita, Musta, Varun* possesses *Tikta, Katu Rasa Ushna Virya* and *Shothhara, Deepna, Pachna* properties and *Punarnava Haritaki, Bibhitak, Amalaki Nagar Madhur Katu Tikta Rasa, Ushna virya, Shothhara, Vataanulomka Vednasthapna* properties which may much beneficial in the management of *Aamvata.* That‟s why,, *Alambushadi Ghana Vati* ‟ is selected as *Shamana Yoga* while,, *Vaitarana Basti*′ is selected for *Samshodhana* Yoga, Both of these measures are in present research work named as "Clinical Evaluation of Efficacy of,, *Alambushadi Ghana Vati*,, and,, *Vaitarana Basti*‟ in the management of *Aamvata* with special Reference to Rheumatoid Arthritis." Probable mode of action of *Vaitarana Basti*.

Vaitarana Basti has been clearly mentioned by *Chakradutta* in *Niruhadhikara*.73/32 & ingredients of *Vaitarana Basti* are *Amalika (Email), Guda, Saindhava, Gomutra* & *Tila Taila* in the proportion of 4:2:1:16 as per requirement.

Generally the qualities of *Vaitarana Basti* can be considered as *Laghu, Ruksha, Ushna, Tikshna*. Most of the drugs are having *Vata – Kaphashamaka* action. Due to this property, antagonism to *Kapha* and *Ama* the *Basti* help in significant improvement in sign and symptoms of disease. The *Tikshna Guna* of *Basti* helps in overcoming the *Srotodushti* resulting due to *Sanga*. So, help in breaking down the pathogenesis of disease.

Generally the effect of *Basti* can be summarized as en colonic (action on tissue of colon), end colonic (action inside colon), and dia colonic (for systemic action). Hence Basti Dravya after reaching to large and small intestine get absorbed from intestine, now due to *Laghu, Ushna, Tikshna and Ruksha Guna* of *Vaitarana Basti Dravya*, it breaks the obstructions and expels out the morbid material from all over the body, so help in breaking down the pathogenesis of disease. Here *Anuvasana Basti* is used so as to avoid the vitiation of *Vata* due to continuous use of *Vaitarana Basti*. *Niruha Basti* helps in raise the *Avarana* of *Vata* by *Kapha*. Reduction in this *Avarana* was seen as there was improvement of *KaphavritaVyana* symptoms. *Basti* help in *Vatanulomana* thus help in correcting the *Apana*.

Basti Karma exerts a more systemic action besides exerting local action of operating through large intestine involving enteric nervous system. Enteric nervous system is a collection of nervous in the gastro – intestinal tract constituting the brain of gut. Apart from its influence o GIT, enteric nervous system also influences the autonomic nervous system thereby producing systemic affect. *Vata* is very important *Doshas* to be managed during treatment of any disease as *Acharya* told that other *Doshas* are handicapped without *Vata Dosha*, & *Basti* is very important therapy to manage *Vata Dosha*, & is called as *Ardhachikitsa* Hence, we can say that *Vaitarana Basti* plays a very important role in the management of *Amavata*.

CONCLUSION

On the basis of above observation and results it can be concluded that Group B („*Alambushadi Ghana Vati'* & *'Vaitarana Basti'*) provided better relief than Group A („*Alambushadi Ghana Vati'*) in most of the sign and symptoms of the disease at *Amavata*. It is also can be concluded that this medicine provided better relief and found safe and effective in the management of *Amavata*.

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