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Research Article

A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF *PATHYADI CHURNA* AND *SHUNTHYADI KWATHA* IN THE MANAGEMENT OF *AMAVATA* W.S.R. TO RHEUMATOID ARTHRITIS

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ABSTRACT

Amavata is a *Vata* and *Kapha Pradhana Vyadhi* caused due to *Viruddha Ahara* and *Vihara* resulting in *Mandagni,* leading to the formation of *Ama. Ama* with the influence of *Vata Dosha* circulates all over the body and gets lodged in *Shleshma Sthana* in *Sandhi Pradesha,* resulting in the manifestation of *Amavata*. This *Amavata* can be compared with rheumatoid arthritis showing similarities in clinical features. Clinically diagnosed 34 patients of *Amavata* were selected from OPD & IPD of R.G.G.P.G. Ayurvedic College and Hospital Paprola, Dist. Kangra (H.P.). This article discusses the comparative effect of *Pathyadi Churna* in Group-A and *Shunthyadi Kwatha* in group-B having 17 patients in each group, in the treatment of *Aamvata,* mentioned in *Chakradatta*. It was observed that group of patients treated with *Shunthyadi Kwatha* (Group-B) showed better result than those patients treated with *Pathyadi Churna* (Group-A).

INTRODUCTION

Rheumatoid arthritis (RA), an autoimmune illness that affects 1% of the population[1-3], can cause high rates of morbidity and mortality, as well as a 10-year reduction in longevity.[4] Symptoms of RA include discomfort, stiffness in several joints, swelling of the periarticular joints, osteoporosis in the affected area, constriction of the synovial space and fibrous ankylosis. The most common locations for symptoms to manifest are the wrists, proximal interphalangeal joints, and metatarsophalangeal joints[5,6]. The complex etiology of RA is similar to other autoimmune illnesses. Approximately 60% of all disease risk is attributed to genetic predisposition with the remaining 40% attributable to environmental variables such microbial infections[7], smoking, obesity, first-degree relatives' schizophrenia and anomalies of the auto immune system.

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This rheumatic disorder covers the large part of medicine world. It affects a relatively significant number of people worldwide of all races. Therefore, it is necessary in the modern period to develop a cure for such a sickness. It falls under the category of auto immune illness and is a highly pressing matter. The core cause of RA cannot be treated with modern medication or any other alternative therapies. *Ahara* must be consumed in a specific *Matra* which must be chosen based on the individual's *Agni* each time.[9] He receives *Bala, Varna, Sukha* also known as *Arogya* and *Dirghaayushya,* when *Matravat Aahara* is consumed without disrupting the condition of equilibrium. Nobody has time to consider how *Matravataahara* leads to *Agnidusti (Agnimandya)* in today's fast-paced world.[10] As previously said *Agnimandya* is the underlying cause of all illnesses. The *Ahara* that was consumed by the individual is transformed into *Ama* after *Agnidushti.* Improper eating habits (fruit smoothies, cocktails, burgers, pizza, Chinese, etc) lack of exercise and *Ratrijagaran-Divaswapana* both contribute to the development of *Ama*. *Nidansevena* and *Vataprakopa* continue to lead to *Amavata.*Our science of Ayurveda is firmly based on our fundamental *Chikitsa Siddhant* which hasn't altered in thousands of years, to treat sickness. *Chakrapani* gave

a very clear explanation of the *Chikitsasiddhant* of the *Amavata. Pathyadi Churna* and *Shunthyadi Kwatha* mentioned in *Chakradutta* in *Amavatarogadhikara.* They also have the capability to stop the *Ama* formation. Hence I have selected *Pathyadi Churna* and *Shunthyadi Kwatha Agnisandeepan* and *Aampachan Dravya* in *Amavata.*

AIMS AND OBJECTIVES

1. **Primary objectives:** To determine the efficacy of *Pathyadi Churna* and *Shunthyadi Kwatha* in the management of *Amavata* w.s.r. to rheumatoid arthritis.
2. **Secondary objectives:** To determine the safety of *Pathyadi Churna* and *Shunthyadi Kwatha* in the management of *Amavata* w.s.r. to rheumatoid arthritis

MATERIALS AND METHODS

Selection of the Patient: The patients were selected from the OPD/IPD of R.G.G.P.G. Ayurvedic College and Hospital Paprola, Dist. Kangra (H.P.). A sample of 34 patients-17 patients in each group was assessed in the clinical study.

Study Design

Study type – Randomized clinical trial

Masking – Single blind

Timing – Prospective

Number of patients – 34 (17 in each group)

No of Groups – 2

Duration of trial – 6 weeks

Follow up visit – After every 14 days till the completion of trial

Diagnostic Criteria: The patients were diagnosed based on clinical features of *Amavata* as well as rheumatoid arthritis. For diagnosis of rheumatoid arthritis criteria given by American College of Rheumatology (ACR) was followed which is as follows:

- Morning stiffness
- Arthritis of three or more joint areas
- Arthritis of hand joints
- Symmetrical Arthritis
- Rheumatoid nodules
- Serum Rheumatoid factor
- Radiographic changes

Out of 7 criteria at least 4 should be present in patient for more than or equal to 6 weeks to meet the diagnosis.

Inclusion Criteria

- Patients willing to study.
- Patients in the age group between 30-70 years irrespective of gender and socio-economic status.
- Patient with signs and symptoms of *Amavata* w.s.r. to rheumatoid arthritis as described in texts and fulfil the diagnostic criteria.

Exclusion Criteria

- Patients not willing for the trial.
- Patients with age group below 30 and above 70 years.
- Allergy to the trial drug.
- Patients having any type of arthropathy such as neoplasm of spine, ankylosing spondylosis, osteoarthritis, traumatic arthritis and pyogenic osteomyelitis etc.
- Patients suffering from chronic renal, respiratory, cardiac and hepatic disorders.
- Pregnant and lactating

Investigations

- TLC, DLC, ESR, Hb gm%
- Serum uric acid, RA Factor
- FBS, blood urea, serum creatinine, SGOT, SGPT
- Urine- Routine and microscopic examination.

Table 1: Grouping of Patients

No. of patients	Group 1	Group 2
Registered	17	17
Completed	15	15
Drop out	2	2

In the present clinical study, study subjects were randomly divided into two groups- Group I and Group II patients were registered in two groups, 2 patients dropped out from both Group I and Group II. These 4 patients were excluded from the present clinical study. Hence, the effect of therapy was studied on 30 enrolled study subjects.

Trial Drugs

Pathyadi Churna

Drug dosage - 5gm twice a day

Route of administration- Oral

Anupana- Lukewarm water

Shunthyadi Kwatha

Drug dosage: 25ml twice a day. (25gm raw drug in 400ml water and it will reduce to 50ml, which will be given in two equally divided doses).

Route of administration- Oral

Trial Drug Composition

Table 2: *Pathyadi Churna* Composition

S.no.	Name of the drug	Latin name	Family	Part used	Proportion
1.	*Pathya* (*Haritaki)*	*Terminalia chebula* (Retz)	Combetraceae	Pericarp	1Part
2.	*Vishwa* (*Shunthi)*	*Zingiber officinale* (Roxb.)	Zingiberaceae	Rhizome	1Part
3.	*Yawani (Ajwayan)*	*Trachyspermum ammi* (Linn.)	Apiaceae	Fruit	1Part

Table 3: *Shunthyadi Kwatha* Composition

S.no	Name of drug	Latin name	Family	Part used	Proportion
1	*Shunti*	*Zingiber officinale* (Roxb.)	Zingiberaceae	Rhizome	1part
2	*Gokshur*	*Tribulus terrestris* (Linn.)	Zygophyllaceae	Fruit	24 Part

Assessment Criteria

Subjective parameter were assessed before and after the treatment as per grade

Table 4. The grading of subjective parameters as follow

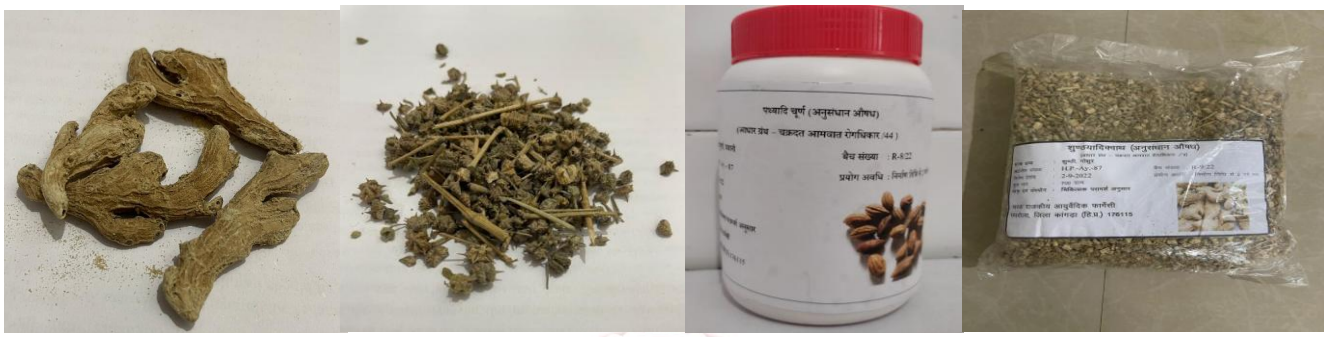
Body ache	*Angamarda*
0	No body ache
1	Mild pain which do not disturb daily work
2	Moderate pain which slightly disturb daily work
3	Severe pain which disturb daily work relieves by rest
4	Very severe body aches which disturb daily work and relieves only by medicine
Loss of taste	*Aruchi*
0	No loss of taste
1	Loss of taste in morning hours
2	Loss of taste in morning hours and afternoon
3	Loss of taste in morning hours, afternoon and evening
4	Loss of taste throughout the day
Loss of thirst	*Trishna*
0	No thirst
1	Feel thirsty 2 to 3 times in a day
2	Feel thirsty 4 to 5 times in a day
3	Feel thirsty 6 to 6 times in a day
4	More than 7 times in a day
Lack of Enthusiasm	*Alsaya*
0	No lack of enthusiasm
1	Loss of enthusiasm which last for 1-2 hours in the morning
2	Loss of enthusiasm throughout the morning
3	Loss of enthusiasm which lasts from morning upto afternoon
4	Loss of enthusiasm which lasts throughout the day
Heaviness	*Gauravata*
0	No heaviness
1	Heaviness is present but do not disturb daily works and relieves without rest
2	Heaviness is present but do not disturb daily works and relieves only by rest
3	Heaviness which partially disturbs daily works and relieves only by rest
4	Heaviness which totally disturbs daily works
Fever	*Jwara*
0	Normal <98.8

1	Fever between 99°F and 100°F
2	Fever between 101°F and 102°F
3	Fever between 103°F and 104°F
Indigestion	*Agnimandya*
0	Gets normal appetite and digests the food normally
1	Eats normal quantity of food but feels discomfort during the digestion
2	Eats less quantity of food and digests it normally
3	Can't digest the food even if taken in less quantity
4	Avoids taking food
Swelling of the body	*Sandhishotha*
0	No swelling of the body
1	Swelling of lower limbs
2	Swelling of lower limbs and upper limbs
3	Swelling of lower limb, upper limb and face
4	Swelling of whole body
Pain	*Sandhishoola*
0	No pain
1	Complaints of tolerable pain which do not need rest
2	Complaints of pain which relieves by rest
3	Complaints of pain which is difficult to tolerate and takes analgesic once a day
4	Intolerable pain and takes one analgesic more than once a day
Tenderness	*Sparshasahtva*
0	No tenderness
1	Mild tenderness
2	Moderate tenderness
3	Severe tenderness
4	Very severe tenderness
Morning stiffness	*Jadya*
0	No morning stiffness
1	Up to 25% limitation of normal range of mobility
2	upto 50% limitation of normal range of mobility
3	upto 75% limitation of normal range of mobility
4	> 75% limitations of normal range of mobility
Constipation	*Vidvibandha*
0	No *Vidvibandha*
1	Motion once a day but not at regular interval
2	Motion in alternate days
3	Interval for more than one day
Disturbed Sleep	*Nidraviparya*
0	Normal sleep
1	Disturbed sleep during night with short naps during day
2	One to two hour reduction in night sleep with mild increase in day sleep
3	Three to five hour reduction in night sleep with gross increase in day sleep
4	Wakes during night and sleep during day

Ingredients of *Pathyadi Churna*

Haritaki ***Shunthi*** ***Yavani***

Ingredients of *Shunthyadi Kwatha* **Prepared Drugs**



Shunthi ***Gokshura*** ***Pathyadi Churna*** ***Shunthyadi Kwatha***

Objective Criteria

All the routine laboratory investigations were done along with diagnostic parameter.

Hematological Investigations: Complete Blood Cytogram (CBC): Hemoglobin, TLC, DLC. Erythrocyte Sedimentation Rate

SGOT/SGPT, blood urea, serum creatinine and blood sugar estimation is done for the safety profile of the patient before treatment and after treatment.

C - reactive protein (CRP titer)

Rheumatoid factor (RA titer)

Functional Assessment

1. **Walking time:** The walking time taken by the patients for a fixed distance was observed and recorded to know the time consumed to cross the fixed distance. In the present study 20 meters distance was fixed for the purpose and grading was given:
   - 0=20-30 sec 1=30-40 sec 2=40-50 sec
   - 3=50-60 sec 4=> 60 sec
2. **Grip power and pressing power:** For this test (grip power) patients were asked to grip the inflated cuff of a sphygmomanometer by both palms and fingers separately and the rise of manometer readings was recorded in mmHg of mercury at the time of registration and follow ups of the patients of *Amavata*. The patient sitting on front of the table on a chair was told to press the inflated cuff by both hands separately. While pressing the cuff pressure should be applied from all the involved joints of upper limbs and the extent to which the patient can press the cuff is observed in terms of the rise in mercury column in mm of Hg at the time of registration and follow ups. In both the test the cuff of the sphygmomanometer was inflated up to basal value of 30mm of Hg.
   - 0=200mmHg 1=198-158mmHg 2=156-110mmHg
   - 3=108-70mmHg 4=<70mmHg

Final Assessment of Results

Statistical Analysis: Data obtained during the trial was tabulated and statistically analysed using student Paired 't' Test.The result was categorized significant or insignificant depending upon the value of p.

- Highly significant -p value <0.001
- Significant -p value <0.05
- Insignificant- p value >0.05

OBSERVATIONS AND RESULTS

Age wise distribution of patients shows that 41.17% of the patients were in the age group of 51-60 years, 32.35% of the patients were in the age group of 41-50 years, 17.64% of the patients were in the age group of 30-40 years and 8.82% patients were in the age groups of 60-70 years. In this study 67.65% patients were females. All the patients enrolled in this study were Hindu by religion. Majority of patient in the present series were housewives (55.88%). Educational qualification wise distribution of 34 patients shows

that 38.24% patients were illiterate, 26.47% patients were under matriculation, 17.64% were matriculate, 11.76 % were senior secondary qualified and 5.88% were graduate. All the patients were married. There may not be any direct linkage of marital status with the prevalence of RA. All the patients came from rural areas. Majority of the patients i.e., 41.18% were of poor socio-economic status. Addiction wise distribution of 34 patients shows that 70.59% patients i.e., 24 patients were addicted to tea/coffee, 14.71% patients were addicted to alcohol (5 patients), 8.82% patients were addicted to smoking and 5.88% patients were addicted to smoking + alcohol. Lifestyle distribution of 34 patients showed that 73.53% patients were having sedentary lifestyle. Dietetic habits of 34 patients showed that 71.59% of patients were taking mixed diet. In our study the incidence of family history was absent in most of the cases i.e., 73.53%. Symmetry wise distribution of joint involvement of 34 patients showed that 100% of patients had symmetrical involvement of joints. Incidence of duration of illness in 34 patients of *Amavata* revealed that maximum patients 44.12% had disease for 2-4 years. Assessment of *Abyavaharana Shakti* revealed maximum patients had *Avara Shakti* (50%). Assessment of *Jarana Shakti* revealed maximum patients had *Madhyam* (76.47%) followed by *Avara* (23.53%). Assessment of *Koshtha* revealed maximum patients had *Madhyam* (70.59%) followed by *Karura* (29.41%). In the present study 50% of patients were of *Vata-Kaphaj Prakriti* 26.47%. In the present study 70.59% of patients were of *Rajasika Prakriti*. 76.47% of patients in the present study reported gradual onset of their disease. Only 23.52% of patients had sudden onset. Distribution of 34 patients based on joints involved shows that 76.47% patients presented with involvement of PIP, MCP joints.

55.88 patients reported with wrist joint involvement. Elbow and knee joint were involved in 50% patients, MT was involved in 44.11% patients, ankle joint was involved in 38.24% patients, shoulder was involved in 35.29% patients and DIP joint involved in 0 % patients. In the present study the maximum number of patients i.e., 73.53% experience worsening symptoms during winters followed by 17.65% in summers and 8.82% patients remain unaffected. Among 30 cases registered maximum patients had normal bowel habit (52.94%) whereas altered was seen in 32.35% patients.

Signs and symptoms Wise Distribution

Table 5: The incidence of signs and symptoms of *Amavata* in 34 patients

Signs and symptoms	Groups		Total	Percentage %
	Group I (n=17)	Group II (n=17)		
Sandhishoola	18	16	34	100
Sandhishotha	16	16	32	94.12
Sparshashyata	16	16	32	94.12
Nidra vipraya	16	16	31	94.12
Alasya	15	15	30	88.24
Agnimandya	18	12	30	88.24
Jadya	15	15	30	88.24
Vidvibandha	14	16	30	88.24
Gauravata	14	16	30	88.24
Aruchi	11	14	25	73.5
Apaka	12	13	25	73.5
Angamarda	10	13	23	67.64
Jawara	5	8	13	38.23
Daha	6	8	14	29.5
Trishna	3	2	5	14.7

Table 6: Effect of therapy on subjective criteria of *Amavata*

Parameters	No. of patient	Group	Mean		Changes	SD±	SE ±	T value	P Value	Sig
			BT	AT						
Angamarda	10	G I	5.5	2.2	40	0.4	0.1	2.64	<0.05	S
	13	GII	7	3.5	50	0.4	0.14	2.98	<0.05	S
Aruchi	11	G I	6	2.8	46	0.6	0.17	6.9	<0.05	S
	14	G II	7.4	4.1	58	0.3	0.19	7.2	<0.05	S
Trishna	3	G I	0.5	0.2	47	0.4	0.12	2.7	<0.05	S
	2	G II	1.5	0.6	40	0.4	0.14	2.9	<0.05	S
Alasya	15	G I	8	4	40	0.6	0.18	6.8	<0.05	S
	15	G II	8	4.2	52	0.9	0.7	5.9	<0.05	S
Gauravata	14	G I	7.5	0.6	55	0.5	0.15	6.089	<0.05	S
	16	G II	8.5	0.5	50	0.5	0.23	6.123	<0.05	S
Jwara	5	G I	3	1.8	47	0.4	0.1	0.5	<0.05	S
	8	G II	4.5	2.2	50	0.5	0.15	0.45	<0.05	S
Apaka	12	G I	6.5	2.7	40	0.5	0.12	5.781	<0.05	S
	13	G II	9	4.2	54	0.6	0.13	4	<0.05	S
Agnimandya	18	G I	9.5	3.9	48	0.6	0.65	6.859	<0.05	S
	12	G II	6.5	3.8	58	0.5	0.34	5.98	<0.05	S
Daha	6	G I	3.5	1.5	50	0.5	0.13	4.67	<0.05	S
	8	G II	4.5	1.8	46	0.5	0.12	3,89	<0.05	S
Jadya	15	G I	8	3.9	48	0.5	0.11	2.312	<0.05	S
	15	G II	8	5.2	62	0.4	0.14	2.56	<0.05	S
Sparsh Ashyata	16	G I	8.5	4.7	42	0.3	0.09	9.5	<0.05	S
	16	G II	8.5	4.5	50	0.3	0.07	8.7	<0.05	S
Sandhi Shoola	18	G I	9.5	5.8	58	0.4	0.12	9.45	<0.05	S
	16	G II	8.5	6.8	76	0.4	0.21	7.89	<0.001	HS
Shandi Shotha	16	G I	8.5	3.8	48	0.4	0.08	8.98	<0.05	S
	16	G II	8.5	6.0	70	0.4	0.07	11.2	<0.001	HS
Vidvibandha	14	G I	7.5	3.2	48	0.4	0.12	6.2	<0.05	S
	16	G II	8.5	3.2	44	0.3	0.13	9.34	<0.05	S
Nidravipraya	16	G I	8.5	3.7	47	0.4	0.14	5.5	<0.05	S
	16	G II	8.5	3.2	44	0.4	0.12	5.8	<0.05	S

Table 7: Intergroup comparison of subjective criteria of *Amavata*

Symptoms	% of relief		Diff. In %	P value	Sig
	G I	G II			
Angamarda	40	50	10	<0.05	S
Aruchi	46	58	12	<0.05	S
Trishna	47	40	7	<0.05	IS
Alasya	40	52	12	<0.05	S
Gauravata	55	50	5	<0.05	IS

Jawara	47	50	1	<0.05	IS
Apaka	40	54	14	<0.05	S
Agnimandya	48	58	10	<0.05	S
Daha	17	20	3	<0.05	IS
Jadya	48	62	14	<0.05	S
Sparshashyata	42	50	7.8	<0.05	S
Sandhishoola	58	76	18	>0.05	HS
Sandhishotha	48	70	22	>0.05	HS
Vidvibandha	42	44	1	<0.05	IS
Nidra vipraya	47	44	3	<0.05	IS

Table 8: Effect of therapy on functional assessment

Function Assessment	Group	Mean		% of change	SD	SE	T value	P value	Sig
		BT	AT						
Walking time	G1	3.06	1.13	63.04	1.07	0.47	0.81	<0.05	S
	G2	3.0	1.23	60.2	1.08	0.40	1.0	<0.05	S
Grip power	G1	2.37	0.75	82.1	0.24	0.71	9.06	<0.05	S
	G2	2.26	1.75	77.8	0.18	0.61	12.51	<0.05	S
Foot pressing power	G1	3.13	1.12	62.3	0.12	0.07	9.39	<0.05	S
	G2	3.45	1.43	58.2	0.03	0.03	21.34	<0.05	S

Table 9: Effect of therapy on hematological profile

Category	Group	Mean		% Changes	SD	SE	T value	P value	Sig
		BT	AT						
TLC	G I	9,000	9,000	0	2295.55	478.66	1.4	>0.05	IS
	G II	7,500	7,400	1.18	2720.43	560.19	0.8	>0.05	IS
Neutrophils	G I	40	32	3.34	9.7	2.04	0.7	>0.05	IS
	G II	50	48	5.1	11.1	2.034	0.25	>0.05	IS
Lymphocytes	G I	20	24	5.9	3.4	1.66	2.5	>0.05	IS
	G II	34	29	3.12	3.2	1.8	0.6	>0.05	IS
Mixed Cell	G I	10	8	20	3.4	2.7	0.6	>0.05	IS
	G II	6	6	0	3.9	0.6	2.1	>0.05	IS
ESR	G I	70	48	22	8.33	3.7	3.6	<0.05	S
	G II	64	40	24	14.74	7.0	2.9	<0.05	S

Table 10: Intergroup Comparison of hematological parameter

Category	% of relief		Diff. In %	P value	Sig
	G I	G II			
TLC	0	1.18	1.18	0.079	IS
Neutrophils	3.34	5.1	1.76	0.133	IS
Lymphocytes	5.9	3.12	2.78	0.076	IS
Mixed Cell	20	0	20	0.065	IS
ESR	28.66	28.57	6.05	0.242	IS

Table 11: Effect of therapy on biochemistry profile

Category	Group	Mean		% Changes	SD	SE	T value	P value	Sig
		BT	AT						
RA factor	G1	5.5	5.5	0	1.2	0.02	0.1	<0.05	IS
	GII	5	5	0	1.0	0.01	0.14	<0.05	IS
CRP	GI	52.53	22.6	27.93	2.3	1.23	6.2	<0.05	S
	GII	48	22.8	25.2	4.8	1.8	6.0	<0.05	S
SGOT	G I	45	38	15.6	6.8	1.42	9.0	0.053	IS
	G II	34	30	11.8	5.0	1.05	1.0	0.08	IS
SGPT	G I	35	31	11.4	12	2.6	7.4	0.07	IS
	G II	42	38	9.5	3.3	0.8	1.0	0.10	IS
TSB	G I	0.5	0.5	0.0	0.1	0.04	2.8	0.43	IS
	G II	0.6	0.4	33.3	0.1	0.01	0.3	0.45	IS
DSB	G I	0.2	0.1	5.0	0.16	0.04	2.5	0.13	IS
	G II	0.1	0.2	0.0	0.00	0.001	0.2	0.21	IS
FBS	G I	115	115	0.0	15.5	3.2	3.2	0.098	IS
	G II	99	111	0.0	18.4	3.8	0.2	0.099	IS
Cholesterols	G I	180	166	7.8	60	10.3	6.7	0.088	IS
	G II	150	140	6.7	58	12.3	2.5	0.324	IS
Triglycerides	G I	160	150	6.3	27	5.7	6.1	0.089	IS
	G II	170	164	3.5	14	4.8	1.2	0.079	IS
HDL	G I	40	39	2.5	4.1	0.9	0.8	0.076	IS
	G II	46	44	4.3	9	2.0	1.89	0.067	IS
LDL	G I	70	60	14.3	16.0	3.0	4.4	0.056	IS
	G II	50	50	0.0	10	2.0	1.8	0.058	IS
VLDL	G I	51	45	11.	26.5	10	9.8	0.107	IS
	G II	45	41	8.9	3.0	0.7	0.7	0.06	IS
B. Urea	G I	26.8	35.3	0.0	4.3	0.9	0.9	0.07	IS
	G II	22	21	4.5	7.4	1.7	1.7	0.054	IS
Serum Creatinine	G I	0.6	0.4	33.3	0.1	0.03	1.6	0.53	IS
	G II	0.5	0.5	0.0	0.16	0.01	1.7	0.051	IS

Table 12: Intergroup Comparison of biochemical parameter

Category	Mean		Diff. In mean	P value	Sig
	G I	G II			
RA factor	5.5	5.5	0	>0.05	IS
CRP	1.7	1.0	0.7	>0.05	IS
SGOT	15.60	11.8	3.8	0.053	IS
SGOT	11.40	9.5	1.9	0.055	IS
TSB	0	33.3	33.3	0.078	IS
DSB	5	0	5	0.118	IS
FBS	0	0	0	0.119	IS

Cholesterol	7.8	6.7	1.	0.187	IS
Triglycerides	6.3	3.5	2.8	0.057	IS
HDL	2.50	4.3	1.8	0.065	IS
LDL	14.3	0	14.3	0.064	IS
VLDL	11.80	8.9	2.9	0.075	IS
B. urea	0	4.5	4.5	0.086	IS
S. Creatinine	33.3	0	33.3	0.097	IS

Effect of Therapy on Subjective Criteria Signs and symptoms (Table no 5, 6, 7)

Predominance of signs and symptoms of *Amavata* were studied in 34 patients. It was observed that *Sandhishoola* was present in 34 (100%) patients followed by *Sparshashyata, Nidra vipraya* and *Sandhishotha* (94.12%) *Agnimandya, Alasya Gauravata*, *Jadya,* and *Vidvibandha* were 30 (88.24%), 25 (73.5%) *Aruchi, Apaka* in 73.5% patients (38.23%) patients complained of *Jwara* in (29.5%) patients complained of *Daha* and *Trishna* was present in only 14.7% patients. In *Angamarda* the initial mean score was 5.5 before treatment in group 1 and reduced to 2.2 after treatment, and in group 2 it was 7 before treatment and reduced to 3.5 after treatment. The result was statistically significant in both groups. *Aruchi* the initial mean score of was 6 before treatment in group 1 and reduced to 2.8 after treatment, and in group 2 it was 7.4 before treatment and reduced to 4.1 after treatment. The result was statistically significant in both groups. In *Trishna* the initial mean score of was 0.5 before treatment in group 1 and reduced to 0.2 after treatment, and in group 2 it was 1.5 before treatment and reduced to 0.6 after treatment.The result was statistically significant in both group. In *Alasya* the initial mean score of was 8 before treatment in group 1 and reduced to 4 after treatment, and in group 2 it was 8 before treatment and reduced to 4.2 after treatment. The result was statistically significant in both groups. In *Gauravata* initial mean score was 7.5 before treatment in group 1 and reduced to 0.6 after treatment, and in group 2 it was 8.5 before treatment and reduced to 0.5 after treatment.The result was statistically significant in both groups. The initial mean score of *Jwara* was 3 before treatment in group 1 and reduced to 1.8 after treatment, and in group 2 it was 4.5 before treatment and reduced to 2.2 after treatment. The result was statistically significant in both groups. *Apaka* The initial mean score of *Apaka* was 6.5 before treatment in group 1 and reduced to 2.7 after treatment, and in group 2 it was 9 before treatment and reduced to 4.2 after treatment. The result was statistically significant in both groups. The initial mean score of *Agnimandya* was 9.5 before treatment in group 1 and reduced to 3.9 after treatment, and in group 2 it was 6.5 before treatment and reduced to 3.8 after treatment. The result was statistically significant in both groups. The initial mean score of *Daha* was 3.5 before treatment in group 1 and reduced to 1.5 after treatment, and in group 2 it was 4.5 before treatment and reduced to 1.8 after treatment. The result was statistically insignificant in both groups. The initial mean score of *Jadya* was 8 before treatment in group 1 and reduced to 3.9 after treatment, and in group 2 it was 8 before treatment and reduced to 5.2 after treatment. The result was statistically significant in both groups. The initial mean score of *Sparsh Ashyata* was 8.5 before treatment in group 1 and reduced to 4.7 after treatment, and in group 2 it was 8.5 before treatment and reduced to 4.5 after treatment. The result was statistically significant in both groups. The initial mean score of *Sandhi Shoola* was 9.5 before treatment in group 1 and reduced to 5.8 after treatment, and in group 2 it was 8.5 before treatment and reduced to 6.8 after treatment. The result was statistically significant group 1 and highly significant in group 2. The initial mean score of *Shandi Shotha* was 8.5 before treatment in group 1 and reduced to 3.8 after treatment, and in group 2 it was 8.5 before treatment and reduced to 6.0 after treatment. The result was statistically significant group 1 and highly significant in group 2. In *Vidvibandha* the initial mean score of was 7.5 before treatment in group 1 and reduced to 3.2 after treatment, and in group 2 it was 8.5 before treatment and reduced to 3.2 after treatment. The result was statistically significant in both groups. The initial mean score of *Nidravipraya* was 8.5 before treatment in group 1 and reduced to 3.7 after treatment, and in group 2 it was 8.5 before treatment and reduced to 3.2 after treatment. The result was statistically significant in both groups.

Effect of therapy on functional assessment (Table no.8)

There was 63.04%, improvement in walking time in group I while 60.2% improvement in group II. In grip power there was 82.1% improvement in group I and 77.8% improvement in group II. In Foot pressing power there was 62.3% improvement in group I and 58.2% improvement in group II. In both the group

results were statistically significant with p value is less than 0.05 for all the parameter.

Effect of Therapy on Haematological and Biochemical Parameters (Table no- 9, 10, 11, 12)

In the present study, no considerable change was noticed in Hb, TLC, DLC, FBS, blood urea and serum creatinine after treatment in both the groups, except ESR and CRP. In ESR there was 22% reduction in group I and 24% in group II. Both groups showed statistically significant result with (p value<0.05). In CRP Percentage of relief were 27.93% and 25.2% percentage respectively in Group I and Group II the result in both groups were statistically significant (p<0.05). Intergroup comparison revealed that result was statistically insignificant in both groups.

OBSERVATION

Main *Rasa* of *Haritaki* is *Kashaya.* Though *Kashaya Rasa* is *Sheeta* and *Stambhak* in action but *Haritaki* is an exception to it, because it's *Veerya is Ushna* and it acts as a *Saraka* (mild purgative) and does *Vatanulomana. Rasa* of *Shuthi* is *Katu Rasa* action of *Katu Rasa* is *Vatakopana* but *Shunthi* is an exception to it as an action of *Shunthi* is *Vatashamana. Shunthi* acts as a *Shothahara* and *Vedanashtapana* as its *Veerya* is *Ushna. Vipaka* of *Haritaki* and *Shunthi* is *Madhura* so it also helps to do *Shamana* of *Vata. Katu* and *Tikta Rasa* of *Yavani* help to do *Ama Pachana. Yavani* acts as a *Vataghna* because of its *Ushna* and *Snigdha Guna*.

Veerya of all of the above 3 drugs is *Ushna* and *Ushna Guna* helps to do *Ama Pachana*.

In contrast to readily available market forms like *Guti, Vati, Churna,* etc., it is challenging for the patient to prepare fresh *Kwath* every day. However, the superfluous cellulose component of the medication is not present in *Kwath Kalpana* making it easier to digest than other forms. The *Kalpana* turns into *Laghu* by virtue of *Agni Sanskara* throughout the manufacturing process as well as because of its liquid form and administrative. When in hot form, the active substances reach the *Srotasa* more quickly and easily. Additionally, *Ushna Guna Kwatha* affects *Agni, Vata,* and *Kapha,* which are primarily responsible for *Amvata. Shunthi* exhibits the well-known actions of *Shothaghna* and *Shulaghna. Vedanashapak, Shothahar,* and *Vatapittashamak* are present in *Gokshura.* Yoga has *Kapha Vataghna, Madhura Rasatmak, Madhura Vipaki, Ushna Viryatmaka,* and *Madhura Vipaki* qualities that are beneficial for *Amavata's Samprapti Vighatana.*

CONCLUSION

- After the careful review of the result obtained from the study entitled "A comparative clinical study to evaluate the effect of *Pathyadi Churna* and *Shunthyadi Kwatha* in the management of *Amavata* w.s.r. to Rheumatoid Arthritis" following conclusion can be drawn.
- It was observed that *Shunthyadi Kwatha* showed statistically significant result on subjective parameter i.e., *Angamarda, Aruchi, Apaka, Agnimandya*, *Jadya, Sparshasahtva, Sandhishoola, Sandhishotha.*
- Statistically significant improvement was observed in walking time, grip power and foot pressing power in both Group.
- Statistically significant reduction in reducing the level of ESR, CRP was observed in both groups. However other haematological and biochemical values i.e., total leucocyte count, differential leucocyte count, fasting blood sugar, serum glutamic oxaloacetic transaminase, serum glutamic pyruvic transaminase, total serum bilirubin, direct serum bilirubin, rheumatoid factor, blood urea, serum creatinine before and after treatment remained within normal range except Hb% in both groups during and after the treatment.
- At the same time the drugs are safe and can be given for longer duration without any adverse effects. There was neither any side effect produced nor any untoward effect observed during the trial drug.

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