Comparative Clinical Efficacy Of Vaitarana Basti And Kshar Basti In The Management Of Aamvata W.S.R To Rheumatoid Arthritis

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Abstract

Ayurveda, the ancient system of medicine from India, has gained worldwide recognition for its holistic approach to health and well-being. With the changing dietary habits, lifestyle, and environment, the occurrence of diseases like Amavata (Rheumatoid Arthritis) has increased. Amavata is a chronic inflammatory joint disease characterized by swollen, painful, and stiff joints, causing significant morbidity and physical impairment, particularly in women.

The formation of Ama, a toxic substance resulting from impaired digestion and metabolism, plays a crucial role in the pathogenesis of Amavata. Ama can obstruct the body's channels and manifest locally or systemically, leading to various signs and symptoms of the disease. Ama and Vata are the primary pathological factors in Amavata, with Kapha and Pitta also involved in its development.

In modern treatment approaches, patients often seek alternative medicine, such as Ayurveda, to alleviate pain and minimize side effects. Ayurvedic texts like Madhava Nidana, Chakrapanidatta, and Yogaratnakara extensively describe Amavata, which can be correlated with Rheumatoid Arthritis. Ayurvedic treatment strategies for Amavata include fasting, sudation, ingestion of bitter and pungent tastes, purgation, oleation, enema, and dry fomentation.

Considering the above facts, this research project titled "Comparative Clinical Efficacy of Vaitarana Basti and Kshar Basti in the Management of Aamvata (Rheumatoid Arthritis)" was conducted to explore the effectiveness of specific Ayurvedic treatments. The results of the study were promising, providing hope for future generations in the management of this debilitating condition.

Introduction

Ayurveda today is recognized worldwide as a system of medicine that provides sound mind in sound body. Ayurveda, the fountain head of Indian medicine was conceived as a science and preached in this country some thousands of years ago, long before the other countries could dream of systematizing the concept of the remedies for human ailments. With the march of time, most of the dietary habits, social structure, life style, and environment have been changing.

Majority of the endogenous diseases actually begin with the formation of *Ama*, which has tremendous capacity to vitiate the *Dosas*, thus disturbing the homeostasis (*Dhatu-Samya*).

Deranged *Agni*, causing impaired digestion and metabolism, leads to availability of incompletely processed food components and metabolites in the system. These substances which bear a threat to the health of a person are designated as *Ama*. In addition to hypofunctioning of *agni*, caused due to obstinence from food, indigestion, overeating, irregular diet habits, consumption of cold substances, ill effects of *panckarma*, wasting of tissues, suppression of natural urges etc., mental stress such as rage, grief and hunger etc. may also give rise to *amadosa*. The *ama* thus formed manifests itslef either locally (in the G.I.T.) or systemically by obstructing the macro and microchannels. The disease thus produced, clinically manifests itself in form of various signs and symptoms.

In Aamvata, ama and vata are chiefly pathogenic factors, kapha and pitta are also invariably involved in its samprapti. Ama and Vata being contradictory in their characteristic ,there is difficulty in planning the line of treatment. derangement of kapha dosha, especially shleshak kapha in the Aamvata, which produces joint pain and swelling with tenderness, can be correlated with rheumatoid arthritis.

Contemplating foresaid modern treatment, patients feel to change the treatment to get relief from pain and to minimise the possible side effects thus there is a trend observed that patient shifts the treatment to alternative medicine such as Ayurveda, in present era, which is also a time consuming but without any severe side effect. After considering all the above-mentioned facts, it was thought in mind to contribute in the researches going on the disease through Ayurvedic concepts to make making happy and healthy.

All above said facts prompted to take the project entitled"Comparative Clinical Efficacy of Vaitarana Basti and Kshar Basti in the Management of Aamvata W.S.R To Rheumatoid Arthritis". The results obtained in this study were optimistic and encouraging and also provided a ray of hope for the next generation.

Aims and objectives

Aim:

- To study comparative efficacy of Vaitarana Basti and Kshar Basti in the management of Aamvata w.s.r to rheumatoid arthritis.

Objective:

- To study the efficacy and safety of Vaitarana Basti and Kshar Basti in the management of Amavata (Rheumatoid Arthritis).

- To compare the clinical effect of Vaitarana Basti and Kshar Basti in Amavata.

Materials and Methods
Type of Study: Open Randomised Control Clinical Trial.
Size of Sample:

Total 60 patients were studied in this series of Amavata divided into two groups.

Group A (Vaitarana Basti) – 30 Patients

Group B (Kshara Basti) – 30 Patients

Centre of Study:
The study was conducted in our college hospital.

Ethical Clearance:

The ethical clearance has been taken from ethical committee of the institute in which the

evaluator is studying.

Inclusion Criteria:

1) All patients fulfilling the American criteria of rheumatoid arthritis.

2) Patients of either sex aged between 30-60 years.

3) Patients presenting with signs and symptoms resembling Amavata.

4) Patient willing and able to participate in the study.

All of the above patients were included in the study.

Exclusion Criteria:

1)Patients having gross disability in performing daily normal routine.

2)Patients with co-morbidities such as gouty arthritis, syphilitic arthritis etc.

3) Patients with poorly controlled Hypertension (>160/100mmHg).

4) Patients with poorly controlled Diabetes Mellitus (BSL Fasting> 130mg/dl, Post Prandial>250mg/dl)

5) Patients with the evidence of malignancy.

6)Patients on prolonged medication (>6weeks) with corticosteroids, or any other drugs that may have an influence on the outcome of the study.

7)Patients who are currently participating in any other clinical trials (since last 6 months)

8)Any other conditions which the researcher thinks may jeopardise the study.

9) Pregnant or lactating ladies etc.

All of the above patients were excluded from the study.

Result and Discussion
The study entitled, "Comparative Clinical Efficacy of Vaitarana Basti And Kshar Basti In the Management of Aamvata W.S.R To Rheumatoid Arthritis" was planned to evaluate the effect on Amavata. For that all the patients coming to the OPD were screened for signs and

symptoms of Amavata as per classics and criteria of diagnosis of rheumatoid arthritis as per American criteria of rheumatoid arthritis. All the patients selected were given a consent form in the language best understood to them and those patients giving the consent for the study were allocated into two different groups by using lottery method i.e. group A and group B.

Patients allocated in both the groups were assessed on the first three days of admission for various parameters discussed in criteria of assessment. The detailed history of the admitted patients was taken on the basis of case record form specially designed for the patients of Amavata. Then the patients were given Langhana for three days with Rajgira Laddu, Mudgausha and Laja. After three days of Langhana the patients allocated in group A were administered with Vaitarana Basti while Kshara Basti was administered in the patients selected in the group B for 15 consecutive days. During this period all the admitted patients were closely observed for any other complications during hospital stay or during administration of Basti or any side effects after the administration of Basti. Patients were observed for Samyaka symptoms of Basti. All the patients exhibited Samyaka symptoms of Basti. Average Pratyagmana Kala in Group A was 10 min while it was 15 min in Group B. After completion of the course of Basti the patient was again screened for the assessment criteria and they were noted accordingly.

Thus, changes in the status of signs and symptoms, investigations were recorded. The history recorded in this study on the case record form revealed the facts and findings which are presented herewith in the tabular form. Some of them are highlighted with the help of graphical presentations.

Table 1: Showing age wise distribution of 60 patients of amavata.

SN	Age Group (years) Avastha	Group A		Group B		Total No. Of Patients	%
		No. of Patients	%	No. of Patients	%		
1	Taruna (17-40)	10	33.33	14	46.67	24	40
2	Praudh (41-60)	20	66.67	16	53.33	36	60

In this series of patients of Amavat,In Group A 33.33% Patients were of Tarunavasta, 66.67% patients were of Praudhavasta. In Group B 46.67% Patients were of Tarunavasta, 53.33% patients were of Praudhavasta No patients of Balya and Vriddhavasta were selected as per the inclusion criteria. The male patient in Group A and Group B were   3 (10%) and 4 (13.33%) respectively and female patients were 27(90%) and 26 (86.67%) respectively. The Hindu patient in Group A and Group B were 29

(96.67%) and 29 (96.67%) respectively, Muslim patients were 1(3.33%) and 1(3.33%) respectively.

In this study Educational status of patients, In Group A uneducated patients is 7 (23.33%), primary is 9 (30%), SSC is 6 (20%), HSC is 6(20%) and Graduate is 2(6.67%). While In Group B uneducated patients is 8 (26.67%), primary is 6 (20%), SSC is 5 (16.67%) ,HSC is 7(23.33%) and Graduate is 4(13.33%).

Table 2: Showing Economical Status Wise Distribution of 60 Patients of Amavata

SN	Economical Statu	Group A		Group B		Total	Percentag e %
		No. of Patients	Percent age %	No. of Patients	Percent age %	No. Of Patients	
1	Poor	3	10	2	6.67	5	08.33
2	Lower Middle	23	76.67	21	70	44	73.33
3	Upper Middle	4	13.33	7	23.33	11	18.33
4	Rich	0	0	0	0	0	0

The patients of this study were classified according to the work they were doing. Out of these 18.33% patients in the study do sedentary type of work; 56.67% patients do manual work and 25% of patients do laborious work.

Marital status of the patients in Group A and Group B is 27(90%) are married in both the groups and 3(10%) were unmarried.

Table3: Showing Incidence of Family History of 60 Patients of Amavata

SN	Family History	Group A		Group B		Total	
		No. of Patients	%	No. of Patients	%	No. Of Patients	%
1	Positive	11	36.67	6	20	17	28.33
2	Negative	19	63.33	24	80	43	71.67

The patients have no habits in group A and Group B were 10(33.33%) and 19(63.67%) respectively, patients have habits of Tobacco were 6(20%) and 4(13.33%) respectively, The patients have habits of Smoking were 1(3.33%) and 1 (3.33%) respectively, patients have habits of alcohol were 2(6.67%) and 1(3.33%) respectively ,patients having habits of Tea 11(36.67%) and 5 (16.67%) respectively.

The patients having vegetarian diet in Group A and Group B were 11(36.67%) and 5 (16.67%) respectively while those having Mix diet were 19(63.33%) and 25(83.33%) respectively.

Table 4: Showing Prakriti Wise Distribution of 60 Patients of Amavata

SN	Prakriti Pradhanya	Group A		Group B		Total	
		No. of Patients	%	No. of Patients	%	No. Of Patients	%
1	Vata-Kapha	23	76.67	22	73.33	45	75

| 2 | Pitta-Kapha | 1 | 3.33 | 7 | 23.33 | 8 | 13.33 |
| 3 | Vata-Pitta | 6 | 20 | 1 | 3.33 | 7 | 11.67 |

Digestion is depending upon the status of Agni. To know it patients were investigated with respect to Ayurvedic contention of Abhyavaharan and Jaranand there status of Agni was decided.In Group A 18(60%) patients were having Mandagni while in Group B 14 (46.67%) patient,patients having Vishama agni in Group A is 7(23.33%) and 4 (13.33%) in Group B.Patients having Vishama agni in Group A and Group B is 5(16.67%) and 12 (40%) respectively.

Patients having krura koshta in Group A and Group B were 16(53.33%) a n d 1 2 40%) r e s p e c t i v e l y w h i l e those having Madhyam Koshta were 14(46.67%) and 18(60%) respectively.

Patients having Madhyama sara in Group A and Group B were 28(93.33%) and 25(83.33%) respectively. patients having Avara sara were 2(6.67%) and 5 (16.67%) respectively while no patients is of Pravara sara. Patients having Madhyama Satmya in Group A and Group B were 27(90%) and 26(86.67%) respectively, patients having Avara Satmya were 3(10%) and 4 (13.33%) respectively, while no patients is of Pravara Satmya.

Table 5: Showing Samhanana Wise Distribution of 60 Patients of Amavata

SN	Samhanana	Group A		Group B		Total No. Of Patients	%
		No. of Patients	%	No. of Patients	%		
1	Pravara	0	0	2	6.67	2	3.33
2	Madhyama	22	73.33	22	73.33	44	73.34
3	Avara	8	26.67	6	20	14	23.33

Patients having Madhyama Satva in Group A and Group B were 22(73.33%) and 19(63.33%) respectively ,patients having Avara Satva were 8(26.67%) and 9 (30%) respectively while no patients in Group A and 2(6.67%) patient in Group B is of Pravara Satva.

Patients having Madhyama Vyayam Shakti in Group A and Group B were 22(73.33%) and 22(73.33%) respectively ,patients having Avara Vyayam Shakti were 8(26.67%) and 8 (26.67%) respectively, while no patients is of Pravara Vyayam Shakti .

Table 6: Showing Chronicity Wise Distribution of 60 Patients of Amavata

SN	Chronicity	Group A		Group B		Total No. Of Patients	%
		No. of Patients	%	No. of Patients	%		
1	<1year	1	3.33	1	3.33	2	3.33

2	1-2 years	6	20	5	16.67	11	18.33
3	2-3 years	11	36.67	9	30	20	33.34
4	3-4 years	8	26.67	8	26.67	16	26.67
5	>4 years	4	13.33	7	23.33	11	18.33

In Group A and Group B 27(30%) and 28(93.33%) patients had the history of non-steroidal anti-inflammatory medicine for acute pain relief and 3 (10%) and 2(6.67%) patients had no history of medicine at all but these patients were not dependent on steroids.

In Group A and Group B 17(56.67%) and 21(70%) patients were having RA test (Qualitative analysis) positive and 13 (43.33%) and 9 (30%) patients had RA test negative respectively.

Table 7: Showing Dominant Rasa in Ahara of 60 Patients of Amavata

SN	Dominant Rasa	Group A		Group B		Total	
		No. of Patients	%	No. of Patients	%	No. Of Patients	%
1	Madhur	19	63.33	19	63.34	38	63.33
2	Amla	8	26.67	3	10	11	18.33
3	Lavana	0	0	4	13.33	4	6.67
4	Katu	3	10	4	13.33	7	11.67
5	Tikta	0	0	0	0	0	0
6	Kashaya	0	0	0	0	0	0

Table 8: Showing Effect on Symptom Score of 60 Patients of Amavata

SN	Symptoms	Group A				Group B			
		BT	AT	Difference	Percentage of Relief	BT	AT	Difference	Percentage of Relief
1	Angamarda	84	44	40	47.61	89	32	57	64.04
2	Aruchi	63	21	42	66.67	76	17	59	77.63
3	Trishna	15	1	14	93.33	34	8	26	76.47
4	Alasya	82	41	41	50	83	20	63	75.90
5	Gauravata	84	40	44	52.38	95	28	67	70.53

6	Apaka	38	15	23	60.53	53	13	40	75.47
7	Kshudhamand	45	16	29	64.44	68	13	55	80.88
8	Vairasyata	34	9	25	73.53	61	17	44	72.13
9	Daha	11	3	8	72.73	34	4	30	88.24
10	Bahumutrata	11	0	11	100	17	9	8	47.05
11	Kukshikathiny	36	9	27	75	29	8	21	72.41
12	Nidraviparyay	32	14	18	56.25	52	20	32	61.54
13	Hridgrah	7	3	4	57.14	11	0	11	100
14	Vidvibandha	52	15	37	71.15	33	7	26	78.79
15	Jadya	82	44	38	46.34	67	22	45	67.16
16	Tenderness	70	35	35	50	76	37	39	51.31
17	Pain	79	45	34	43.04	70	31	39	55.71
18	Swelling	52	23	29	55.77	51	18	33	64.71
	Total	877	378	499	56.90	999	304	695	69.57
	Average Score	48.72	21	27.72	56.90	55.5	16.89	38.61	69.57

Effect of Therapy on General Symptoms:

It has been explained in the criteria of assessment that the effect of therapy will be evaluated on clinical features by adopting score system which is described in the criteria of assessment. These symptoms were Angamarda, Aruchi, Trishna, Alasya, Gauravata etc enlighted in Table. Each of these symptoms was assessed before the start of treatment as well as after the completion of treatment. Relief in the symptoms score calculated with the help of percentage described in Table.

It could be comprehended that more percentage of relief in the symptoms score of Group A than Group B was observed in the symptoms like Angamarda, Aruchi, Alasya, Gauravata, Apaka, Kshudhamandyaa, Daha, Nidraviparyaya, Hridraha, Vidvibandha, Jadya, tenderness, pain and swelling.Average percentage of relief in Group A was more than Group B .The treatment in Group B exhibited more percentage of relief in the symptoms such as Trishna, Vairasyata, Bahumutrata and Kukshikathinya.

Table 9: Showing Effect of Therapy on Symptoms of 60 Patients of Amavata by Wilcoxon Signed Rank Test

S.						Mean ± SD BT		SD	Z	

N.	Symptoms		W	T+	T_						P
1	Angamard	A	465	465	0.0	1	2.80±0.76	1.47±0.68	48.62	4.77	<0.0001
		B	465	465	0.0	2	2.97±1.00	1.07±0.83	48.62	4.77	<0.0001
2	Aruchi	A	465	465	0.0	1	2.10±0.55	0.70±0.79	48.62	4.77	<0.0001
		B	465	465	0.0	2	2.53±0.90	0.57±0.68	48.62	4.77	<0.0001
3	Trishna	A	55	55	0.0	0	0.50±0.82	0.03±0.18	48.62	-3.66	<0.0020
		B	136	136	0.0	1	1.13±1.22	0.27±0.58	48.62	-2.00	<0.0001
4	Alasya	A	465	465	0.0	1	2.73±0.69	1.37±0.76	48.62	4.77	<0.0001
		B	465	465	0.0	2	2.77±0.97	0.67±0.80	48.62	4.77	<0.0001
5	Gauravata	A	465	465	0.0	1	2.80±0.61	1.33±0.71	48.62	4.77	<0.0001
		B	465	465	0.0	2	3.17±0.75	0.93±0.78	48.62	4.77	<0.0001
6	Apaka	A	231	231	0.0	1	1.27±0.94	0.50±0.57	48.62	-0.04	<0.0001
		B	406	406	0.0	1	1.77±0.82	0.43±0.50	48.62	3.56	<0.0001
7	Kshudha - mandya	A	276	276	0.0	1	1.50±1.01	0.53±0.51	48.62	0.88	<0.0001
		B	406	406	0.0	2	2.27±1.02	0.43±0.57	48.62	3.56	<0.0001
8	Vairasata	A	253	253	0.0	1	1.13±0.78	0.30±0.47	48.62	0.41	<0.0001
		B	351	351	0.0	1	2.03±1.00	0.57±0.50	48.62	2.43	<0.0001
9	Daha	A	36	36	0.0	0	0.37±0.67	0.10±0.31	48.62	-4.05	<0.0078
		B	153	153	0.0	1	1.13±1.00	1.13±0.50	48.62	-1.65	<0.0001
10	Bahu-mutrata	A	66	66	0.0	0	0.37±0.49	0.00±0.00	48.62	-3.43	<0.0010
		B	36	36	0.0	0	0.57±0.50	0.30±0.47	48.62	-4.05	<0.0078
11	Kukshi-kathinya	A	253	253	0.0	1	1.20±0.87	0.30±0.54	48.62	0.41	<0.0001
		B	190	190	0.0	1	0.97±0.81	0.27±0.45	48.62	-0.88	<0.0001
12	Nidravipar yaya	A	136	136	0.0	1	1.07±0.98	0.47±0.68	48.62	-2.00	<0.0001
		B	253	253	0.0	1	1.73±1.02	0.67±0.66	48.62	0.41	<0.0001
13	Hridgraha	A	10	10	0.0	0	0.23±0.43	0.10±0.31	48.62	-4.59	<0.1250
		B	21	21	0.0	0	0.37±0.85	0.37±0.85	48.62	-4.36	<0.0313

$$Z = [(T-m)-0.5] / SD$$

$$SD = \sqrt{[n(n+1)(2n+1)]/24}$$

$m = [n(n+1)]/4$

W=sum of all rank T+=sum of

all positive rank T-=sum of all

negative rank

Effect of Therapy on General Symptom Score by Wilcoxonn Signed Rank Test:

All the symptoms mentioned in Table were graded before and after the treatment, as described in this chapter under the heading of criteria of assessment. As these symptoms were subjective in nature and hence were graded to evaluate the effect. Therefore effect of therapy in the group was statistically evaluated by non-parametric test as the graded data do not follow the normal distribution. It is a pre-requisite of parametric test that data must be quantitative, must follow normal distribution and sample should be selected by random method. Therefore these data of the said group were analysed by using Wilcoxon Ranked Sign Test.

Effect on Angamarda:

The mean of ranks of all the patients befeor starting the treatment was 2.80+0.76 which after the treatment reduced to 1.47±0.68 in Angamarda. The sum of all singed ranks was 465, Z value was 4.77, P<0.0001 which was statistically very highly significant in Group A. Group B sum of all singed ranks were 465, Z value 4.77, P<0.0001 which was also statistically very highly significant. However the mean before starting the treatment was 2.97+1.00 which after a gap of treatment period reduced to 1.07+0.83.

Effect on Aruchi:

In Aruchi the sum of ranks was 465, Z value was 4.7, P<0.0001 which suggested very highly significant result in Group A. The mean of the rank before treatment was 2.10+0.55 which after treatment was 0.70 + 0.79. In Group B Z value was same.

Effect on Other Symptoms:

The same method as described in Angamarda and Aruchi was followed for evaluation of statistical analysis. The means of the ranks before starting the treatment with respect to other symptoms such as   Trishna,   Alasya,   Gauravata,   Apaka, Kshudhamandyaa, Daha, Nidraviparyaya, Hridraha, Vidvibandha, Jadya, tenderness, pain and swelling have been presented in tabular form in Table. All these means of ranks of these symptoms were again evaluated after the treatment. All these data had been depicted in Table. The Z values were calculated and were compared with

that of tabular Z values to know the efficacy in both the groups, as well as to know the level of efficacy. While going through Table to review the ranked sign test, it was observed that there were highly significant results with respect to the symptoms such as Trishna, Alasya, Gauravata, Apaka, Kshudhamandyaa, Daha, Nidraviparyaya, Vidvibandha, Jadya, tenderness, pain and swelling in both the groups. In case of Hridgraha in Group A was insignificant.

Effect on Degree of Disease Activity and Disability Index:

Degree of Disease Activity was mentioned by American society of Rheumatoid Arthritis. This criterion has been described in criteria of assessment. The each of criterion under degree of disease activity such as morning stiffness, fatigue, pain, general function, grip power, spread in joint, haemoglobin in gm%, ESR in mmHg, physician estimate and patient estimate were considered. All these criteria were evaluated and gradations were given to each of them as per the method mentioned in criteria of assessment. All the ranks of all the patients for a particular criterion of degree of disease activity were recorded as per the status of the patients before and after the treatment. Further statistical analysis was carried out in each of these criteria with the help of Wilcoxon-Ranked Singed Test which has been presented in Table.

Effect on morning stiffness:

For instance, the mean rank of morning stiffness before starting the treatment in Group A was 2.37 ± 0.49 which after the treatment reduced to 0.87 ± 0.630. The sum of ranks for morning stiffness was 435 and Z was 4.15, P<0.0001 in Group A. In Group B mean of the ranks of morning stiffness before starting the treatment was 2.20 ± 0.61 while after treatment mean rank was $.77\pm0.43$. The difference of 1.5 was statistically tested by ranked sign test, sum of ranks was 465, Z was 4.77, P<0.0001. It highlighted that the Vaitaran Basti in Group A and Kshara Basti in Group B exhibited very highly significant reduction in the morning stiffness. In the same manner the therapy in Group A and Group B also showed benifitial effect on ranks of fatigue, pain, general functions, grip power, spread in joints, physician estimate and patient estimate which were very highly significant in respective groups.

Effect on Hemoglobin Rank:

It is to be highlighted that observations made with respect to the mean rank of hemoglobin gm% In case of Group B sum of ranks were 30 which statistically evaluated by ranked

signed test and Z=-3.40, P<0.4240 but not significant because P>0.05. in Group A was 1.77±0.97 before starting the treatment. After treatment the haemoglobin remained same. It was 1.77±0.86. The results were insignificant as sum of ranks was 0.0, Z=4.58, P>0.9999.

Effect on ESR Rank:

The mean of difference between before and after value of ranks of ESR of Group A and Group B were respectively 0.5 and1.5. These differences were statistically tested by ranked sign test. The Z was-1.97, P<0.0018 in Group A and 0.06, P<0.0012 . The results were very highly significant in both the groups.

Physician and Patients Estimation:

As presentd in Table physician‟s estimation and patient‟s estimation were very highly significant. Favourable effect of therapy in both the groups was noted by physican and patient itself.

Degree of Disease Activity:

The mean of difference between before and after value of ranks of Disease Activity of Group A and Group B were respectively 1.03 and 1.0. These differences were statistically tested by ranked sign test. The Z was 4.77, P< 0.0001 in Group A and Group B. The results were very highly significant in both the groups.

Disability Index:

The mean of difference between before and after value of ranks of Disability Index of Group A and Group B were respectively 8.9 and 1.0. These differences were statistically tested by ranked sign test. The Z was 4.77, P< 0.0001 in Group A and Group B. The results were very highly significant in both the groups.

Table 10: Showing Comparison between Two Groups of Amavata with respect to Degree of Disease Activity and Disability Index by Mann-Whitney Test

SN	Symptom	Mean ± SD of A	Mean ± SD of B	T1	T2	U″	U stat	Z	P
1	Morning stiffness	1.50±0.57	1.43±0.50	878.5	951.5	486.5	413.5	0.5322	<0.6058
2	Fatigue	1.27±0.52	1.53±0.51	1027	803	562	338	1.6484	<0.0833
3	Pain	1.33±0.55	1.47±0.51	968	862	503	397	0.7762	<0.4610

4	General function	1.23±0.50	1.33±0.48	955	875	490	410	0.5840	<0.5977
5	Grip strength in mmHg	0.80±0.41	0.70±0.70	888	942	477	423	0.3918	<0.6220
6	Spread in joints	1.23±0.57	1.27±0.45	922	908	457	443	0.0961	>0.9999
7	Hbgm%	0.13±0.68	0.00±0.45	861	969	504	396	0.7910	<0.2779
8	ESR in mm/Hr	0.50±0.73	0.63±0.89	967	863	502	398	0.7614	<0.4179
9	Physician"s estimate	1.10±0.31	1.33±0.43	931.5	898.5	466.5	433.5	0.2366	<0.7065
10	Patient"s estimate	1.37±0.56	1.37±0.49	909.5	920.5	455.5	444.5	0.0739	>0.9999
11	Disease Activty	1.03±0.25	1.10±0.19	976	854	511	389	0.8944	<0.3657
12	Disability Index	0.79±0.31	0.89±0.27	1010	820.5	544.5	355.5	1.3897	<0.1662

Comparison between Two Groups with Respect to Degree of Disease Activity and Disability Index: Effect on Morning Stiffness:

The mean of difference in Group A for Morning Stiffness was 1.50 ± 0.57 and in case of Group B it was 1.43 ± 0.50. Statistical analysis was further carried out by Mann-Whitney U test for the comparison of two independent quantitative data. T1 and T2 were 878.5 and 951.5 respectively. U" and U stat were 486.5 and 413.5 respectively. Z   was 0.532, $P<0.6058$. The result showed insignificant result in case of morning stiffness.

Effect on other Criteria of Degree of Disease Activity:

As explained above, the mean of difference of fatigue, pain, general function, grip power, spread in joints, haemoglobin, ESR, physician estimate, patient estimate and disability index were analysed by Mann-Whitney test for the comparison of two independent quantitative data. However, when this increase was statistically tested by Mann- Whitney Test, the results were insignificant.

Table 11: Showing Effect of Therapy on Hematologicals Parameters of 60 Patients of Amavata by Paired t test

Sr. No	Hematological Parameter	Gr	Mean ± SD	Mean ± SD	Diff. of Mean ± SD	SEd	„t"	P
			BT	AT				
		A	9.62±1.09	9.76±0.91	0.14±0.44	0.08	1.7500	<0.0967

1	Hemoglobin (gm%)	B	9.91±1.43	9.83±1.22	0.09±0.54	0.10	0.0900	<0.3898
2	ESR (mm/hr)	A	42.97±16.89	31.80±15.19	11.17±12.32	2.25	4.9644	<0.0001
		B	46.23±13.79	31.60±16.02	14.63±17.47	3.19	4.5862	<0.0001
3	WBC (/cumm)	A	7590±1992	6810±1538	780±1337	244.1	3.1954	<0.0005
		B	7513±1957	6617±1687	896.7±1244	227.2	3.9467	<0.0005

Table 12: Showing   Comparison   between   Hematological Parameters of Two Groups of Amavata Before Treatment on The Basis of F-Ratio Test

S N	Parameter	Before Treatment		F = $\frac{(SD1)^2}{(SD2)^2}$	F at 5% level (Tabulated F=1.89
		Gr A mean ± SD	Gr B mean ± SD		
1	Hb%	-----------------	------------------	--------	----------------
2	ESR	42.97±16.89	46.23±13.79	1.5001	P <
3	WBC	7590±1992	7513±1957	1.0361	P <

Table 12: Showing   Comparison   between   Hematological Parameters of Two Groups After Treatment on The Basis of F-Ratio Test

S N	Parameter	After Treatment		F = $\frac{(SD1)^2}{(SD2)^2}$	F at 5% level (Tabulated F=1.96
		Gr A mean ± SD	Gr B mean ± SD		
1	Hemoglobin (gm%)	-----------------	------------------	---------	----------------
2	ESR (mm/hr)	31.80±15.19	31.60±16.02	1.1123	P <
3	WBC (/cumm)	6810±1538	6617±1687	1.2031	P <

Table 13: Showing Comparison between Two Groups WRT Foot Power, ESR and WBC by Unpaired "t" test

S N	Parameter respective unit	Mean of diff. ± SD		Mean of diff. Bet Two Groups ± SeD	Sed	"t"	P
		Gr A	Gr B				
1	Foot Power Kg	11.67±6.34	8.37±6.33	3.33±1.64	1.64	2.0121	<0.0484
2	ESR (mm/hr)	11.17±12.32	14.63±17.47	3.467±3.903	3.903	0.8882	<0.3781

3	WBC/cumm	780±1337	896.7±1244	116.7±333.4	333.4	0.3499	<0.7277

Table 14: Showing Effect of Therapyon Dosha Vriddhi Lakshan Score of 60 Patients of Amavata

S.N.	Symptoms	Group	Symptoms Score			Percentage of Relief %
			BT	AT	Diff	
1	Vata	Group A Group B	96 101	60 43	36 58	37.5 57.43
2	Pitta	Group A Group B	11 11	3 0	8 11	72.73 100
3	Kapha	Group A Group B	216 216	162 110	54 106	25 49.07

Table 15: Showing Effect of Therapy on the Basis of Wilcoxon-Signed-Rank Test on Dosha Vriddhi Lakshan (DVL) Score of 60 Patients of Amavata

SN	DVL	Groups	W	T+	T-	Median	Mean ± SD		SD	Z	P
							BT	AT			
1	Vata Dosha	A	465	465	0	2	3.20+0.41	2.0+0.0	48.62	4.77	<0.0001
		B	465	465	0	1	3.37+0.49	1.43+0.50	48.62	4.77	<0.00011
2	Pitta Dosha	A	36	36	0	0	0.37+0.67	0.10+0.31	48.62	-4.05	<0.0078
		B	36	36	0	0	0.37+0.67	0.0+0.0	48.62	-4.05	<0.0078
3	Kapha Dosha	A	465	465	0	2	7.20+1.35	5.40+0.89	48.62	4.77	<0.0001
		B	465	465	0	3.5	7.2+1.35	3.67+1.37	48.62	4.77	<0.0001

Table 16: Showing Comparison between Two Groups WRT Dosha Vriddhi Lakshana (DVL) Score on the Basis of Mann- Whitney Test of 60 Patients of Amavata

SN	DVL	Mean ± SD of Group A	Mean ± SD of Group B	T1	T2	U"	U stat	Z	P
1	Vata Dosha	1.20±0.41	1.93±0.69	657	1173	192	708	3.8069	<0.0001
2	Pitta Dosha	0.27±0.45	0.37±0.67	903	927	438	462	0.1700	<0.8168
3	Kapha Dosha	1.80±0.55	3.53±0.57	480	1350	15	885	6.4237	<0.0001

Table 17: Showing Effect of Therapy on Srotodushti Lakshan Score of 60 Patients of Amavata

S.N.	Srotasa	Group	Symptoms Score			Percentage % of Relief
			BT	AT	Diff	
1	Annavaha	Group A	196	106	90	45.92
		Group B	207	83	124	59.90
2	Rasavaha	Group A	618	288	330	53.40
		Group B	621	270	351	56.52
3	Majjavaha	Group A	92	41	51	55.4370.65
		Group B	92	27	65	

Table 17: Showing Effect of Therapy on the Basis of Wilcoxon-Signed-Rank Test on Srotodushti Lakshan Score of 60 Patients of Amavata

SN	Srotasa	Group	W	T+	T-	Median	Mean ± SD		SD	Z	P
							BT	AT			
1	Annavaha	A	406	406	0	3	6.53±1.55	3.53±1.40	48.62	3.56	<0.0001
		B	465	465	0	4	6.90±1.58	2.77±1.28	48.62	4.77	<0.0001
2	Rasavaha	A	465	465	0	12	20.60±1.90	9.60±1.52	48.62	4.77	<0.0078
		B	465	465	0	12	20.70±1.88	9.00±1.64	48.62	4.77	<0.0078
3	Majjavaha	A	406	406	0	2	3.07±1.023	1.37±0.	3.07±1.02 48.62	3.56	<0.0
		B	465	465	0	2	3.07±1.02	9.00±1.64	48.62	4.77	<0.0001

Table 18: Showing Comparison between Two Groups WRT Srotodushti Lakshan Score on the Basis of Mann-Whitney Test of 60 Patients of Amavata

SN	Srotasa	Mean ± SD of Group A	Mean ± SD of Group B	T1	T2	U"	U stat	Z	P
1	Annavaha	3.00±1.31	4.13±0.86	689	1141	224	676	3.3338	<0.0004
2	Rasavaha	11.00±2.15	11.70±1.15	855.5	974.5	390.5	509.5	0.8723	<0.3397
3	Majjavaha	1.70±0.79	2.17±0.87	789	1041	324	576	1.8554	<0.0453

Total Effect of Therapy:

Table 19: Showing Total Effect of Therapy on Total 60 Patients of Amavata

S N	Criteria For Total Effect of Therapy	Groups	Total No. of Patients	Percentage %
1	Complete remission	A	00	00
		B	00	00
2	Markedly Relieved	A	02	6.67
		B	10	33.33
3	Moderately Relieved	A	21	70
		B	16	53.34
4	Unchanged	A	07	23.33
		B	04	13.33
5	LAM A	A	00	00
		B	00	00

Table 20: Showing Comparison between Two Group of Amavata WRT to Total Effect of Therapy by Chi Square Test

S.N.	Total Effect		Group A No. of Patients		Group B No. of Patients	Total No. of Patients
1	Completely Relieved	Observed	00	Observed	00	00
		Expected	00	Expected	00	
		Chi Sq. of Cell	00	Chi Sq. of Cell	00	
2	Moderately Relieved	Observed	02	Observed	10	12
		Expected	06	Expected	06	
		Chi Sq. of Cell	2.67	Chi Sq. of Cell	2.67	
3	Mild Relieved	Observed	21	Observed	16	37
		Expected	18.5	Expected	18.5	
		Chi Sq. of Cell	0.34	Chi Sq. of Cell	0.34	
4	Unchanged	Observed	07	Observed	04	11
		Expected	5.5	Expected	5.5	
		Chi Sq. of Cell	0.41	Chi Sq. of Cell	0.41	
Total No. of Patients			30		30	60

Total Chi Square = 2.67+2.67+0.34+0.34+0.41+0.41 = 6.84

Calculated Chi Square was 6.84 which was compared with tabulated Chi Square at 5% level at said degree of freedom [(C-1) (R-1)] = 1 is 5.99 (tabulated), calculated Chi Square is more than tabulated. The results are significant at 0.05% level. This test suggested that one of the groups is better than the other i.e Group B is better than Group A.

Summary

This dissertation titled "Comparative Clinical Efficacy of Vaitarana Basti and Kshar Basti in the Management of Aamvata W.S.R to Rheumatoid Arthritis" explores the effectiveness of Ayurvedic treatments for Rheumatoid Arthritis. The dissertation is divided into sections, including aims and objectives, review of literature, materials and methods, observations and results, discussion, conclusion, and summary.

The introduction provides a detailed explanation of the study's title, discussing concepts such as Ama and Vata, the role of autoimmunity in Rheumatoid Arthritis, challenges in its management, and the role of Ayurveda. The aims and objectives of the clinical trial are outlined in the first section.

The review of literature section encompasses chapters on the etymology of Amavata, historical glimpses, a review of Ayurvedic and modern literature, and the drug under trial. The materials and methods section describes the patients and drug used in the study, diagnostic criteria, inclusion and exclusion criteria, assessment parameters, and the treatment protocol.

The patients were randomly assigned to two study groups (Group A and Group B) receiving Vaitarana Basti and Kshar Basti, respectively, for 15 consecutive days. The observations and results obtained from the study data are presented in the fourth section.

The discussion section provides a detailed analysis and interpretation of the observations and results. The conclusion section summarizes the findings, and the summary section provides a brief overview of the entire dissertation.

Overall, this dissertation contributes to the understanding of the comparative clinical efficacy of Vaitarana Basti and Kshar Basti in the management of Aamvata (Rheumatoid Arthritis) through a comprehensive exploration of literature, methodology, and results.

Conclusion of Experimental & Clinical study

Hence, from the studies made both clinical & experimental cases, it can be speculated that, the Vaitarana Basti and Kshar Basti posses sufficient efficacy in "Aamvata" without producing any adverse effects. The drug preparation shown better effect in clinical studies.but on comparison between two groups kshar basti is better than vaitarana basti in all aspect.Hence, this study goes to show that administration of Vaitarana Basti and Kshara Basti helps in Rheumatoid Arthritis.

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