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A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF DHANYA NAGARA KWATHA WITH KARISHA PINDA SWEDA AND RASONADI KWATHA WITH KARISHA PINDA SWEDA IN THE MANAGEMENT OF AMAVATA W.S.R TO RHEUMATOID ARTHRITIS

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Amavata is a disease caused due to the vitiation of vata and ama. Vitiated vata propels ama throughout the body through Dhamanis and takes ashraya in the shleshma sthana especially in sandhis. Rheumatoid Arthritis is one among the disease which can be brought under the umbrella of Amavata due to the prevalence and predominance in the signs and symptoms. The treatment should be planned in such a way that both samprapthi vighatana and symptomic relief can be achieved. Keeping this in mind, the present study was planned a comparative evaluation of Dhanya Nagara Kwatha and Rasonadi Kwatha internally with Karisha Pinda sweda as bahya kriya. The study was directed towards evaluation on the efficacy of above both drugs with Karisha pinda sweda both as amapachana and Vatahara and thereby Vyadhihara.

A comparative clinical study done on 40 patients of Amavata w.s.r to Rheumatoid Arthritis selected from OPD and IPD of SKAMCH&RC Bengaluru and made into two groups. In both groups patients were given *Sarvanga Karisha Pinda Sweda* for first 7 consecutive days along with *Dhanya Nagara Kwatha* in Group A and *Rasonadi Kwatha* in Group B. 24ml of each *kashaya* was administered internally in the morning and evening before food for 17 days followed by follow up after 7days. Total of 24days study was taken up.

The effect of treatment has showed statistically highly significant results in both the groups with p value <0.001 in almost all the parameters. On comparison between the groups, Group B had shown statistically better result than Group A which can be concluded that $Rasonadi\ Kwatha$ with $Karisha\ Pinda\ Sweda$ has shown better effect in reducing the symptoms of Amavata.

KEYWORDS: Amavata, Rheumatoid Arthritis, Dhanya Nagara Kwatha, Rasonadi Kwatha, Karisha Pinda Sweda.

INTRODUCTION

Ayurveda, the science of life emphasize mainly on two goals such as maintenance of health and the curing of the ailment. A systemized daily routine i.e. Dinacharya, Ritucharya and Pathya ahara viharas helps one to achieve the above mentioned goals. The fight for existence and the need for survival has taken a toll in human life to such a greater extent that health is coming as secondary for him. Prior importance should be given to our *Shareera* as it is the vital factor in carrying out the pursuits of life. Abnormal food habits, style of living and emotional stress has paved way to the development of numerous disease affecting various aspects of life. Amavata is one of the challenging diseases thus developed due to the unhealthy habits and unawareness of the importance of maintaining health, equilibrium of Agni and Doshas. Amavata is the prime disease which

makes the person crippled and unfit for an independent life. *Amavata* possess a challenge to the physicians due to its chronic nature, difficulty, complications.

The term *Amavata* is originated from the words '*Ama*' and '*Vata*'. The hallmark of *Amavata* is the progressive pathological influence of *Ama* and *Vata* in the synovial joints and the resultant degeneration of joints. The sign and symptoms of *Amavata* are more or less resembling with Rheumatoid Arthritis.

Rheumatoid Arthritis is a chronic inflammatory disease of unknown etiology marked by a symmetric, peripheral polyarthritis. It is the most common form of chronic inflammatory arthritis and often results in joint damage and physical disability. ^[1] The prevalence of Rheumatoid arthritis is approximately 1% of the global population

and in Indian population it is around 0.9%; Women are affected 3 times more often than men. The incidence of Rheumatoid Arthritis increases between 25 and 55 yrs of age; hence it hampers with the creative years of life. Despite the awareness of the disease, proper explanation for the cause and source of Rheumatoid Arthritis are still obscure in modern science. Hence no rational curative measures are known. Anti-inflammatory analgesics and Disease Modifying Anti Rheumatic Drugs are the drugs of choice in contemporary system of medicine. The Ayurvedic line of treatment defends a good deal on the pathogenesis and the stage of disease. Ayurveda emphasizes Shodhana and Shamana treatments in Among Shamana oushadhis, preparations are with easily available and cost effective ingredients which is an important factor considering the chronicity in the disease pathogenesis and hence need for a prolonged duration of the treatment. Here a sincere attempt has been made to provide a better management of Amavata. considering the need of the the present study entitled, "A comparative clinical study to evaluate the effect of Dhanya Nagara Kwatha with Karisha Pinda sweda and Rasonadi Kwatha with Karisha pinda sweda in the management of Amavata w.s.r to Rheumatoid Arthritis" is found beneficial in alleviating the signs and symptoms of the above condition.

Objuctives of the study

- To evaluate the effect of Dhanya Nagara Kwatha along with Karisha Pinda Sweda in the management of Amayata.
- To evaluate the effect of Rasonadi Kwatha along with Karisha Pinda Sweda in the management of Amayata
- To compare the effects of *Dhanya Nagara Kwatha* along with *Karisha Pinda Sweda* and *Rasonadi Kwatha* along with *Karisha Pinda Sweda* in the management of *Amavata*.

MATERIAL AND METHODS

• 40 Patients presenting with clinical features of *Amavata* (Rheumatoid Arthritis) coming under the inclusion criteria approaching the OPD and IPD of Sri Kalabyraveshwaraswamy Ayurvedic Medical College, Hospital & Research Centre, Bengaluru were selected for the study.

The sample collection was initiated with post approval from the Institutional Ethics Committee.

Inclusion criteria

- Patients presenting with lakshanas of Amavata were selected.
- Patients presenting with the signs and symptoms of Rheumatoid Arthritis were selected.
- Patients of age group 16-70 years irrespective of gender, religion and occupation.

Exclusion criteria

- Patients with other systemic or metabolic disorder such as hypertension and diabetes which interfere with the treatment.
- Patients presenting with complications of Rheumatoid Arthritis such as Rheumatoid Nodules and joint deformity (Swan neck deformity and Boutonniere deformity).
- All connective tissue disorder (Osteoarthritis, SLE etc.) other than Rheumatoid Arthritis.

Investigations

Blood for Hb %, Total Count, Differential Count, Erythrocyte Sedimentation Rate, Rheumatoid factor, Creactive Protein, RBS

Intervention

The study was intervened for a duration of 24 days which is divided into Treatment 17 days and Follow up study comprising 7days.

Administration of drug Group-A

• In this group patients were given *Sarvanga Karisha Pinda Sweda* for first 7 consecutive days along with *Dhanya Nagara Kwatha* 24ml was administered internally in the morning and evening before food for 17 days.

Group-B

In this group patients were given *Sarvanga Karisha Pinda Sweda* for first 7 consecutive days along with *Rasonadi Kwatha* 24ml was administered internally in the morning and evening before food for 17 days.

Total duration of study: 24 Days.

Assessment criteria

The clinical findings were noted in specially designed case proforma and assessment was done on Day 1 (Before Treatment), Day7 (Mid Treatment- After Karisha Pinda Sweda along with oral medication), Day18 (After Treatment- After oral Medication alone) and Day 25 (After Follow Up-After the completion of the course of Treatment).

The assessment was done based on Subjective and Objective parameters.

Statistical analysis

Statistical Analysis was done using SPSS VER.20.

Observations

In the present study maximum 15(37.5%) patients belong to age group of 51-60 years, 35(87.5%) patients were female, 28(70%) were homemaker, 25(62.5%) were having mixed diet, 25(62.5%) patients had *mandagni*, 35(87.5%) were having *nidraviparyaya*, 20(50%) patients were having *virudhasana*, 18(45%) were doing *vishamashana*, 16(40%) patients were doing *adhyashana*, 26(65%) patients were having *snigdha ahara*, 25(62.5%) patients were having *ati-guru*,

19(47.5%) were having ati madhura and 31(77.5%) patients were having dadhisewana, 21(52.5%) patients were doing ati shrama, 25(62.5%) were doing diwaswapna, 17(42.5%) were doing ratrijagarana and 18(45%) patients were doing *vegadharana*. 11(27.5%) patients were having shoka and 9(22.5%) were having chinta, 40(100%) patients were giving complaints of Angamarda, 36(90%) were having Aruchi, 28(70%) were having Trushna, 36(90%) were having Jwara, 40(100%) were having Alasya, 36(90%) were having Apaka and 40(100%) were having Gaurava, shoonagata and stabdhata. 40(100%) patients were complaining Hasta sandhi shula, 40(100%) patients of Janu sandhi shula, 33(82.5%) patients of Gulpha sandhi shula 27(67.5%) patients were complaining *Pada sandhi shula*, and 20(50%) patients of trika shoola, Sandhishotha and sandhishoola was found in all 40(100%) patients.

RESULTS

The subjective parameters like Sandhishoola, Sparshaasahishnutha, Sandhigraha, Sandhishotha, Angamarda, Aruchi, Trushna, Alasya, Gaurava, Jwara and Apaka were subjected to Wilcoxon test to compare the Mean Rank within the group and Mann Whitney test to compare the Mean Rank difference between the groups. The objective parameters like grip strength and RAPID3 were subjected to statistical test paired't' test and Unpaired 't' test for within the group and in between the groups analysis respectively. The differences in the mean values were considered Highly significant at p<0.001 and p<0.01, Significant at p<0.05 and Nonsignificant at p>0.05.

Effect of Treatment on Sandhishoola in between the Groups.

Sandhi	Group A		Gro	oup B	Mann Whitney U	Z Value	P Value	Remark
shoola	MR	SR	MR	SR				
MT	21.88	437.50	19.12	382.50	172.000	-1.025	0.305	NS
AT	24.80	496.00	16.20	324.00	114.000	-2.984	0.003	NS
AF	24.62	492.50	16.38	327.50	117.500	-2.430	0.015	S

No Significant difference in between the groups statistically at MT, AT (>0.05) and Significant difference in between the group at AF (<0.05), However the mean

rank of Group B is smaller than that of Group A, hence the reduction in the *Sandhishoola* is comparatively better in Group B.

Effect of Treatment on Sandhishotha in between the Groups.

Sandhi	Gro	up A	Group B		Mann Whitney U	Z Value	P Value	Remark
shotha	MR	SR	MR	SR				
MT	23.00	460.00	18.00	360.00	150.000	-1.869	0.062	NS
AT	23.58	471.50	17.42	348.50	138.500	-2.001	0.045	S
AF	22.50	450.00	18.50	370.00	160.00	-1.275	0.202	NS

No Significant difference in between the group statistically at MT, AF (>0.05) and Significant difference in between the group at AT (<0.05), However the mean

rank of Group B is smaller than that of Group A, hence the reduction in the *Sandhishotha* is comparatively better in Group B.

Effect of Treatment on Sparsha asahishnuta in between the Groups.

Sparsha asahishnuta	Group A		Group B		Mann Whitney U	Z Value	P Value	Remark
asanisnnuia	MR	SR	MR	SR				
MT	20.80	416.00	20.20	404.00	194.000	-0.182	0.855	NS
AT	21.40	428.00	19.60	392.00	182.000	-0.527	0.598	NS
AF	21.82	436.50	19.18	383.50	173.500	-0.788	0.430	NS

No Significant difference in between the group statistically at MT, AT, AF (>0.05), However the mean rank of Group B is smaller than that of Group A, hence

the reduction in the *Sparsha asahishnuta* is comparatively better in Group B.

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Effect of Treatment on sandhigraha in between the Groups.

Sandhi	Gro	Group A Group B		Mann Whitney U	Z value	P value	Remark	
graha	MR	SR	MR	SR				
MT	25.20	504.00	15.80	316.00	106.000	-3.082	0.002	HS
AT	23.58	471.50	17.42	348.50	138.500	-2.125	0.034	S
AF	24.40	488.00	16.60	332.00	122.000	-2.391	0.017	S

Highly Significant difference in between the groups statistically at MT (<0.01) and significant difference in between the groups at AT and AF (<0.05). However the

mean rank of Group B is smaller than that of Group A, hence the reduction in the *Sandhigraha* is comparatively better in Group B.

Effect of treatment on Angamarada in between the Groups.

Angamarda	Group A		Group B		Mann Whitney U	Z value	P value	Remark
	MR	SR	MR	SR				
MT	23.52	470.50	17.48	349.50	139.500	-1.827	0.068	NS
AT	23.98	479.50	17.02	340.50	130.500	-2.099	0.036	S
AF	23.62	472.50	17.38	347.50	137.500	-1.796	0.073	NS

No Significant difference in between the group statistically at MT and AF (>0.05), significant difference in between the group at AT (<0.05). However the mean rank of Group B is smaller than that of Group A, hence the reduction in the *Angamarda* is comparatively better in Group B.

Effect of treatment on Aruchi in between the Groups.

Aruchi	Group A		Group B		Mann Whitney U	Z value	P value	Remark
	MR	SR	MR	SR				
MT	20.95	419.00	20.05	401.00	191.000	-0.282	0.778	NS
AT	23.18	463.50	17.82	356.50	146.500	-1598	0.110	NS
AF	22.18	443.50	18.82	376.50	166.500	-0.958	0.338	NS

No Significant difference in between the group statistically at MT, AT and AF (>0.05). However the mean rank of Group B is smaller than that of Group A, hence the reduction in the *Aruch*i is comparatively better in Group B.

Effect of treatment on Trushna in between the Groups.

Trushna	Trushna Group A		Group B		Mann Whitney U	Z value	P value	Remark
	MR	SR	MR	SR				
MT	21.40	428.00	19.60	392.00	182.000	-0.541	0.589	NS
AT	22.15	443.00	18.85	377.00	167.000	-0.997	0.319	NS
AF	20.62	412.50	20.38	407.50	197.500	-0.073	0.942	NS

No Significant difference in between the group statistically at MT, AT and AF (>0.05).. However the mean rank of Group B is smaller than that of Group A,

hence the reduction in the *Trushna* is comparatively better in Group B.

Effect of treatment on Alasya in between the Groups.

Alasya	Gro	up A	Group B		Mann Whitney U	Z value	P value	Remark
	MR	SR	MR	SR				
MT	18.75	375.00	22.25	445.00	165.000	-1.007	0.314	NS
AT	18.92	378.50	22.08	441.50	168.500	-0.922	0.357	NS
AF	17.42	348.50	23.58	471.50	138.500	-1.812	0.070	NS

No Significant difference in between the group statistically at MT, AT and AF (>0.05). However the mean rank of Group A is smaller than that of Group B,

hence the reduction in the *Alasya* is comparatively better in Group A.

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Effect of treatment on Gaurava in between the Groups.

Gaurava	Gro	oup A	Gro	oup B	Mann Whitney U	Z value	P value	Remark
	MR	SR	MR	SR				
MT	24.00	480.00	17.00	340.00	130.000	-2.128	0.033	S
AT	24.30	486.00	16.70	334.00	124.000	-2.319	0.020	S
AF	24.45	489.00	16.55	331.00	121.000	-2.267	0.023	S

Significant difference in between the group statistically at MT, AT and AF (<0.05). However the mean rank of Group B is smaller than that of Group A, hence the

reduction in the *Gaurava* is comparatively better in Group B.

Effect of treatment on Jwara in between the Groups.

Jwara	Gro	Group A		oup B	Mann Whitney U	Z value	P value	Remark
	MR	SR	MR	SR				
MT	22.75	455.00	18.25	365.00	155.000	-1.335	0.182	NS
AT	22.38	447.50	18.62	372.50	162.500	-1.112	0.266	NS
AF	22.95	459.00	18.05	361.00	151.000	-1.463	0.143	NS

Non-significant difference in between the group statistically at MT, AT and AF (>0.05). However the mean rank of Group B is smaller than that of Group A,

hence the reduction in the *Jwara* is comparatively better in Group B.

Effect of treatment on Apaka in between the Groups.

Apaka	Gro	Group A Group		ир В	Mann Whitney U	Z value	P value	Remark
_	MR	SR	MR	SR				
MT	19.08	381.50	21.92	428.50	171.500	-0.839	0.401	NS
AT	19.98	399.50	21.02	420.50	189.500	-0.308	0.758	NS
AF	19.15	383.00	21.85	437.00	173.000	-0.779	0.436	NS

Non-Significant difference in between the group statistically at MT, AT and AF (>0.05). However the mean rank of Group A is smaller than that of Group B,

hence the reduction in the *Apaka* is comparatively better in Group A.

Effect of treatment on RAPID3 in between the Groups.

RAPID3		Mean	SD	SE	MD	PSE	t-value	P value	Remarks
MT	Group A	15.125	1.207	0.269	-1.350	0.663	-2.034	0.049	NS
	Group B	13.775	2.712	0.606					
AT	Group A	14.720	1.077	0.241	-1.055	0.643	-1.640	0.109	NS
	Group B	13.665	2.668	0.596					
AF	Group A	14.725	1.233	0.275	-0.890	0.663	-1.342	0.187	NS
	Group B	13.835	2.696	0.602	-0.890				

No Significant difference in between the group statistically at MT, AT, AF (>0.05). However the mean of Group B is smaller than that of Group A, hence the

reduction in the RAPID3 is comparatively better in Group B.

Effect of treatment on Grip Strength in between the Groups.

Grip strength		Mean	SD	SE	MD	PSE	t-value	P value	remarks
MT	Group A	63.60	5.374	1.202	3.500	1.824	1.919	0.063	NS
	Group B	60.10	6.138	1.372					
AT	Group A	64.70	5.202	1.163	4.000	1.838	2.176	0.036	S
	Group B	60.70	6.367	1.424					
AF	Group A	63.10	5.046	1.128	3.700	1.780	2.078	0.045	S
	Group B	59.40	6.159	1.377					

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No significant difference in between the groups statistically at MT (>0.05) and significant difference in between the groups at AT and AF (<0.05), however the mean of Group B is smaller than that of Group A. Hence the improvement in Grip Strength is comparatively better in the Group B.

DISCUSSION

Amavata manifested due to Viruddha Ahara-chesta, Mandagni, Nischalatha and doing Vyayama immediately after the intake of Snigdha Bhojana. [2] These are important factors for the initiation of disease process as these will lead to the production of *Ama*. For the persons who have proper Agni will not be affected by these Nidanas. In the presence of sedentary life style and Mandagni if a person involve himself in Viruddha Ahara and Cheshta and does exercise immediately after Snigdha ahara leads to the manifestation of the disease *Amavata*. This could be because normally, the circulation of Rasa and Rakta is more towards Koshta for the digestion of meal. But, when a person indulges in any type of *Vyayama* just after consuming meal, circulation is deviated from Koshta to the Shakha resulting in a relative decrease of supply to the *Koshta*. By this act, the process of digestion and absorption get hampered. Therefore improper digestion leads to formation of Ama presenting with Sama Lakshana similar to the prodromal of Rheumatoid Arthritis like fatigue, weakness, joint stiffness, vague arthralgia and myalgia.

Sandhi Shula, Sandhishotha, Sandhistabdhata are the cardinal clinical features of this disease, apart from this many general symptoms like Angamarda, Aruchi, Trishna, Alasya, Gourava, Jwara, Apaka [3] are seen in this disease. Though Ama and Vata are chief pathogenic factors, Kapha and Pitta are also invariably involved in the pathogenesis of Amavata.

Samanya Lakshanas can be compared with the prolonged Pre-articular phase of Rheumatoid Arthritis: Aruchi - anorexia, Alasya -fatigue, Jwara- fever, Angamarda - malaise.

Lakshanas with symptoms of Rheumatoid arthritis: Shula- pain in the joints, Shotha - swelling, Stabdhagatrata-early morning stiffness, Jwara -fever, Shula and Shotha of Hasta (Pain and swelling in IPJ), Pada (MTJ), Gulpha (Ankle joint), Trika.

Angamardha is caused due to the Samarasa and Vata Prakopa. Aruchi manifests due to the vitiation of the Bhodaka Kapha by the Ama. Alasya is due to the Ama and Dooshitha Kapha and Rasa. Jwara due to Ama, Agni along with the Doshas is expelled from Amashaya leading to Jwara. Sandhi Shula is produced due to the deposition of the Ama in the joints and Prakupitha Vata. Sandhi Vakratha due to the improper nourishment of the Sthanika Dhatus and Upadhatus due to Ama.

Probable mode of action of dhanyanagara kwatha, rasonadi kwatha & karisha pinda sweda

Probable mode of action of *Dhanyanagara Kwatha*^[4] Dhanya Nagara Kwatha contains Dhanyaka which has Deepana-Pachana Karma, Nagara has Deepana and Kapha-vatahara Karma, Erandamoola has Vatakaphahara, Shoolahara, Shophahara and Rechana Karma. Due to these properties it does amapachana, removes abhishyandata in srotas. In Phalashruthi of Dhanya Nagara Kwatha has mentioned "Jayedamaanilavyatha"

Probable mode of action of Rasonadi Kwatha^[5]

Rasonadi Kwatha contains Rasona, Shunti and Nirgundi. Rasona has Ushana, Teekshan Guna and katu Vipaka which acts on ama, vata and kapha. Nagara is having Katu rasa, ushna veerya Deepana Pachana properties. Nagara is Katu-tikta Rasa it has soola and shothahara properties. The combination of whole is Katu pradhana tikta, Ruksha and Teekshna guna, ushna veerya, Katu vipaka, Deepana and kapha Vatahara. It acts against the snigdha Picchila pradhana guna of ama and it reduces the sarvadaihika ama lakshanas.

Probable mode of action of Karisha pinda Sweda^[6]

In Karisha Pinda Sweda, Karisha is having Laghu, Ruksha, Teekshna Guna and Ushna Veerya which mainly acts on the Ama, due to Ushna guna, Sheetashoola Vyuparame Sthamba Gourava Nigraha, Agnerdeepti, Bhaktashraddha, srotasam nirmaltvam, Sandhi Sthabda Hanti properties acted on most of lakshanas of Amavata.

CONCLUSION

- ❖ Amavata is characterized by both Samanya Lakshanas and Pravruddha Lakshanas.
- Many Auto immune disorders are coming under the umbrella of Amavata among them one of the prominent and prevalent is Rheumatoid Arthritis in which the signs and symptoms of Amavata can be correlated.
- Samprapthi Vighatana in Amavata is achieved by administering drugs having Gunas like Ushna, Teekshna, Sookshma, Vishadha, Laghu and with Pachana, Deepana and Shodhna dravyas.
- The present study is a comparative clinical study where in 40 patients of either gender diagnosed with Amavata w.s.r to Rheumatoid Arthritis were randomly assigned into two groups comprising of 20 patients in each. The patients of Group A were given Sarvanga Karisha Pinda Sweda for 7consecutive days along with Dhanya Nagara Kwatha 24ml was administered in the morning and evening before food for 17days and The patients of Group B were given Sarvanga Karisha Pinda Sweda for first 7 consecutive days along with Rasonadi Kwatha 24ml was administered in the morning and evening before food for 17days.

- The overall observation in the study revealed that the maximum number of patients were females, within the age group of 41 – 50 years, belonging to middle class, Hindu religion, married, having mixed diet, disturbed sleep and studied up to Graduate presenting with maximum *lakshanas* of *Amavata* for the duration of >1 years - ≤4 year.
- The parameters like Angamarda, Aruchi, Trushna, Gourava Jwara, RAPID3, Grip-Strength revealed Statistically better results in Group B than Group A
- * The parameter like *Alasya*, *Apaka* revealed statistically better results in Group A than Group B. The effect of treatment has showed statistically highly significant results in both the groups with *p* value <0.001 in almost all the parameters. On comparison between the groups, Group B had shown statistically better result than Group A which can be concluded that *Rasonadi Kwatha* with *Karisha Pinda Sweda* has shown better effect in reducing the symptoms of *Amavata*.

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