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Clinical Study of *Nirgundi Ghana Vati* with *Nirgundi Patra Pinda Sweda* in the management on *Amavata*

Shakuntala Sundi¹, V. D. Shukla², Rajan Nelson Munzri³, Sushma Khalkho⁴

¹Senior Medical Officer, Govt. Of Jharkhand, ²EX-HOD, Department of Panchakarma, IPGT and RA, GAU, Jamnagar, ³Associate Professor, Dept. of Panchakarma (In-charge), G.A.S.A.C.H., Begusarai (Bihar), ⁴MD, Department of Shalya Tantra, NIA, Jaipur, Rajasthan, INDIA.

ABSTRACT

Today as man is climbing the step of success, he is moving away from health abnormal food habits, style of living, greed, anger have become a part of his life. The sedentary life style has given birth to number of diseases. *Amavata* is one of the challenging diseases for the physicians due to its chronicity, incurability, complications and morbidity. *Amavata* (Rheumatoid arthritis) the term desires from the words as "Ama " and "Vata" the word *Ama* is the condition which in various ailments in system due to its toxic effect. The *Ama* when combines with *Vatadosha* and occupies in *Shleshmasthan* (*Asthi Sandhi*) results painful disease '*Amavata*'. The disease is characterized by various features like *Sandhishoola* in the nature of *Toda*, swelling inability of joints movements etc. In this research work 16 patients were registered, these patients were given *Nirgundi Ghana Vati* in the doses of 500gm two *Vati* three times a day for 30 days, along with *Nirgundi Patra Pinda Sweda* in 28 days. Results show that significant decrease in the symptoms of *Amavata* after treatment regimen.

Key words: *Nirgundi Patra Pinda Sweda*, *Nirgundi Ghana Vati*, *Amavata*, *Rheumatoid arthritis*.

INTRODUCTION

The improperly formed *Annarasa* is *Ama* and it causes vitiation of *Vata*, which is known as *Amavata*.^[1] *Amavata* is a condition where *Stabdhat* of the body occurs due to lodging of vitiated *Ama* and *Vata* in the *Trika Sandhi*. Commenting on the word "*Yugapat*" *Madhukoshakara* explains it as simultaneously *Vata* and *Kapha* while in *Atanka Darpana*, it is explained as *Ama* and *Vata* as both are held responsible for its pathogenesis.^[2] The clinical presentation of *Amavata*

closely mimics with the special variety of Rheumatological disorders called rheumatoid arthritis, in accordance with their similarities on clinical features, like pain, swelling, stiffness, fever, redness, general debility are almost identical to that of *Amavata* treatment provides the symptomatic relief but the underlined pathology goes on unchecked due to the absence of effective therapy.^[3]

Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of the joints. Rheumatoid arthritis can also cause inflammation of the tissue around the joints, as well as other organs in the body. Autoimmune diseases are illnesses which occur when the body tissues are mistakenly attacked by its own immune system.^[4] A joint is where two bones meet to allow movement of body parts. Arthritis means joint inflammation. The joint inflammation of rheumatoid arthritis causes swelling, pain, stiffness, and redness in the joints. The inflammation of rheumatoid disease can also occur in tissues around the joints, such as the tendons, ligaments, and muscles.

Address for correspondence:

Dr. Shakuntala Sundi

MD, Department of Kayachikitsa, IPGT and RA, GAU, Jamnagar, Gujarat, INDIA.

E-mail: drchetanayu@gmail.com

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Among studies that reported a prevalence of RA for total study populations, the prevalence ranged from 0.28% to 0.7%.^[5] Among studies reporting a prevalence of RA or rheumatic symptoms for specific populations of patients, the prevalence ranged from 1.4% to 5.2%. In the Pune study previously referenced, there was a prevalence of 3.5% of RA among those with rheumatic musculo-skeletal diseases (RMSD).^[6] In the present clinical study effect of selected drugs *Nirgundi Ghan Vati* and *Nirgundi Patra Pinda Sweda* were evaluated. In *Shamana* drug *Nirgundi* has been selected for making *Nirgundi Ghan Vati* because *Nirgundi* is used traditionally and very effective and its *Vedanasthapaka*, *Vatashamaka* and *Amapachana* properties^[7] will help to disrupt the *Samprapti Vighatana of Amavata*. In *shodhana* therapy, *Bashpasweda* with *Nirgundi Patra* has been chosen for this study because it is easy to prepare and easily available. Effect of *Snehana* and *Swedana* both can be achieved by *Nirgundi Patra Pinda Sweda* is an effective procedure to reduce the *Sandhishoola*, *Sandnistabdhata*.^[8]

AIMS AND OBJECTIVES

1. To evaluate the role of *Nirgundi Ghanvati* with *Nirgundi Patra Pinda Sweda* on *Amavata*.
2. To review the disease *Amavata* in Ayurvedic classics.

MATERIALS AND METHODS

Raw drug *Nirgundi* is collected from pharmacy of IPGT & RA, GAU Jamnagar, and authenticated by Dravyaguna department, *Nirgundi Ghan Vati* prepared according to the prescribed method in the pharmacy.

Selection of Criteria

Patients having classical features of *Amavata* like *Angamarda*, *Aruchi*, *Gaurava*, *Trishna*, *Jwara*, *Shula*, *Shotha* etc. were taken for the present work. The detailed research proforma was prepared incorporating all the signs and symptoms seen in the disease.

- Patients were selected from the age group of 18-60 years, irrespective of sex, religion and occupation etc.

- The base of criteria led down by American Rheumatism Association (ARA) was also taken into consideration as follows.
 - Morning stiffness lasting for >1 hour.
 - Arthritis of 3 or more joint areas.
 - Arthritis of hand joints.
 - Symmetrical arthritis.
 - Presence of rheumatoid nodules.
 - Presence of rheumatoid factor.
 - Radiological changes.

*First 4 criteria must be present for the duration of 6 weeks or more.

**Diagnosis of Rheumatoid arthritis is made with 4 or more criteria.

Exclusion Criteria

- Chronicity for more than 10 years.
- Having severe crippling deformity.
- Having cardiac disease, Pulmonary T.B, Diabetes mellitus etc.
- Age less than 18 yrs and more than 60 years.

Investigations

For the purpose of assessing the general condition of the patient and to exclude other pathologies the following investigations were carried out.

- **Rheumatoid factor**
- **Hematological Investigations:** total leucocytes count, differential count, Haemoglobin percent, packed cell volume and erythrocyte sedimentation rate.
- **Biochemical Investigations:** In the biochemical investigations Random blood sugar, serum cholesterol, blood urea and serum uric acid were carried out.

Study design

Total 16 patients were registered in *Nirgundi Ghanavati* group, amongst them 14 patients had

completed the treatment and 02 left against medical advice. The patients of this group were given *Nirgundi Ghan Vati* in the doses of 500gm two *Vati* three times a day for 30 days, along with *Nirgundi Patra Pinda Sweda* in 28 days.

Criteria for Assessment

In this study an effort has been made to follow the guideline laid down by the classical texts of Ayurveda as well as American Rheumatism Association (1988).

Table 1: Degree of disease activity [to be assessed on the basis of American Rheumatism Association criteria] (modified)

Grade	0	1	2	3
Fatigue	Not there	Work full time despite fatigue	Patient must interrupt work to rest	Fatigued at rest
Grip strength	200 mmHg or more	198 to 120mmHg	118 to 70 mmHg	Under 70mmHg
Spread of joints	Not there	0 to 50	51 to 100	Over 100
Westergren ESR (in 1 st hour)	0 to 20	21 to 50	50 to 100	Above 100
Haemoglobin (gm %)	12.5 or more	12.4 to 11	10.9 to 9.5	<9.5
General function	All activity without difficulty	Most activity but with difficulty	Few activity cares for self	Little self care mainly on chair & bed
Patients estimate	Fine	Almost well	Pretty good	Pretty bad
Physicians estimate	Inactive	Minimally active	Moderately active	Severely active

Apart from this criterion of ARA (1987) two other criteria were added here.

Foot pressure	36-40 kg	31-35 kg	26-30 kg	<20 kg
Walking time (for 25 feet)	15-20 sec.	21-30 sec.	31-40 sec.	>40 sec.

Assessment of cardinal symptoms like

a) *Sandhishoola* (Pain in joints)

- No pain - 0
- Mild pain - 1
- Moderate pain, but no difficulty in moving - 2
- Slight difficulty in moving due to pain - 3
- Much difficulty in moving the bodily parts - 4

b) *Sandhishotha* (Swelling in joints)

- No swelling - 0
- Slight swelling - 1
- Moderate swelling - 2
- Severe swelling - 3

c) *Sparshasahyata* (Tenderness in joints)

- No tenderness - 0
- Subjective experience of tenderness - 1
- Wincing of face on pressure - 2
- Wincing of face and withdrawal of the affected part on pressure - 3
- Resist touching - 4

d) *Sandhigraha* (Stiffness in joints)

- No Stiffness or Stiffness lasting for 5 mins. - 0
- 5 min to 2 hrs - 1
- 2 to 8 hrs - 2
- More than 8 hrs - 3

Assessment Associated symptoms like

Jwara, Alasya, Gaurava, Asyavairasya, Daurbalya, Akarmanyata, Utsahahani, Angamarda, Daha, Trishna were scored as mentioned below;

- Symptoms observed before treatment - 10
- Some relief after treatment - 05

- Complete relief after treatment - 00
- No improvement after treatment - 10

OBSERVATIONS AND RESULTS

Table 1: Effect of therapy on Sandhishula in joints

Cardinal Features	n	Mean score		% of Relief	X	SD ±	SE ±	't'
		BT	AT					
Prox. Int. Phal.(H)	11	1.81	0.72	60	1.09	0.53	0.16	6.70
Dis.Int. Phal(H)	5	1.42	0.42	70	1	-	-	-
Wrist	3	1.33	0.66	50	0.66	0.57	0.33	2
Elbow	5	1.2	0.2	83.33	1	-	-	-
Shoulder	6	1.16	0.66	50	0.66	0.57	0.33	2
Hip	1	2	1	50	0.66	0.57	0.33	2
Knee	3	1.33	0.33	75	1			
Prox.Int. Phal.(L)	10	1.5	0.7	53.33	0.8	0.42	0.13	6
Dis.Int. Phal(L)	7	1.2	0.6	50	0.6	0.54	0.24	2.4

The relief from pain in Knee & Ankle joints were found to be statistically significant ($P<0.05$; $P<0.001$).

Table 2: Effect of therapy on Sandhishotha in joints.

Cardinal Features	n	Mean score		% of Relief	X	SD ±	SE ±	't'
		BT	AT					
Prox.Int. Phal.(H)	11	1.8	0.72	60	1.09	0.53	0.16	6.7

Dis.Int.Phil. (H)	7	1.42	0.42	70	1	-	-	-
Wrist	3	1.36	0.66	50	66.66	0.57	0.33	2
Elbow	5	1.2	0.2	83.33	1	-	-	-
Shoulder	6	1.16	0.66	42.85	0.5	0.54	0.22	2.23
Hip	1	2	1	50	1	-	-	-
Knee	3	1.33	0.33	75	1	-	-	-
ProxInt.Phil (L)	10	1.5	0.7	53.33	0.8	0.42	0.13	6
Dis.Int.Phil (L)	5	1.2	0.6	50	0.6	0.54	0.24	2.4

Elbow the relief from Sandhishotha in all the joints were found to be statistically significant. ($P<0.05$; $P<0.01$; $P<0.001$).

Table 3: Effect of therapy on Sandhigraha in joints.

Cardinal Features	n	Mean score		% of Relief	X	SD ±	SE ±	't'
		BT	AT					
Prox.Int. Phal.(H)	11	1.8	0.72	60	1.09	0.53	0.16	6.7
Dis.Int.Phil. (H)	10	1.5	0.7	53.33	0.8	0.42	0.13	6
Wrist	3	1.33	0.66	50	66.66	0.57	0.33	2
Elbow	5	1.2	0.2	83.33		-	-	-
Shoulder	6	1.16	0.66	42.85	0.5	0.54	0.22	2.23
Hip	1	2	1	50	1	-	-	-
Knee	3	1.33	0.33	75	1	-	-	-
Prox. Int.Phil(L)	-	-	-	-	-	-	-	-

Dis.Int.Phal(L)	5	1.2	0.6	50	0.6	0.54	0.24	2.4
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The relief from *Sandhigraha* in Wrist, shoulder, Knee & Ankle joints were observed as statistically significant ($P<0.05$; $P<0.001$).

Table 4: Effect of therapy on *Sparsa-Ashayata* in joints.

Cardinal Features	n	Mean score		% of Relief	X	SD ±	SE ±	't'
		BT	AT					
Prox.Int. Phal.(H)	11	1.8	0.72	60	1.09	0.53	0.16	6.7
Dis.Int.Phal. (H)	7	1.4	0.4	70	1	-	-	-
Wrist	33	1.3	0.66	50	66.66	0.57	0.33	2
Elbow	5	1.2	0.2	83.33		-	-	-
Shoulder	66	1.1	0.66	42.85	0.5	0.54	0.22	2.23
Hip	1	2	1	50	1	-	-	-
Knee	33	1.3	0.33	75	1	-	-	-
ProxInt.Phal (L)	10	1.5	0.7	53.33	0.8	0.42	0.13	6
Dis.Int.Phal(L)	5	1.2	0.6	50	0.6	0.54	0.24	2.4

The relief from *Sparsa-Ashayata* in all the joints were found to be statistically significant ($P<0.05$; $P<0.001$).

Table 5: Assessment Associated symptoms.

Symptoms	n	Mean score		% of Relief	X	SD ±	SE ±	't'	P
		BT	AT						
<i>Angamarda</i>	14	1.92	0.78	59.25	1.14	0.36	0.09	11.77	<0.001
<i>Trishna</i>	13	1.23	0.23	81.25	1	0.40	0.11	8.8	<0.05
<i>Aruchi</i>	13	1.84	0.69	62.5	1.15	0.37	0.10	11.07	<0.001

<i>Alasya</i>	11	1.45	0.09	93.75	1.36	0.50	0.15	8.96	<0.001
<i>Gaurava</i>	14	1	1.78	52	0.78	0.26	0.07	13	<0.001
<i>Jwara</i>	14	1.28	0.14	83.76	1.07	0.75	0.21	5.11	<0.001
<i>Apaka</i>	14	1.78	0.71	60	1.07	0.26	0.07	15	<0.001
<i>Sunta-Angama</i>	7	1.2	0.14	88.88	1.14	0.37	0.14	8	<0.001

Table 6: Effect on other symptoms.

Symptoms	n	Mean score		% of Relief	X	SD ±	SE ±	't'	P
		BT	AT						
Grip strength	11	1.27	0.63	50	0.63	0.50	0.15	4.18	<0.01
Walking time	8	1.25	0.87	30	-	-	-	-	-
Foot pressure	11	1.36	0.90	33.33	0.45	0.52	0.15	2.88	<0.05
Functional capacity	14	1.42	0.71	50	0.71	0.61	0.16	4.37	<0.001
Degree of disease activity	14	1.64	0.78	52.17	0.85	0.36	0.09	8.83	<0.001

Table 7: Effect of haematological investigation

Symptoms	n	Mean score		% of Relief	X	SD ±	SE ±	't'	P
		BT	AT						
E.S.R.	14	39.57	30.42	23.10	9.14	18.24	4.87	1.87	<0.05
Hbmg%	14	13.52	12.81	5.27	0.71	0.90	0.24	2.94	<0.05

T.L.C. Cu mm	14	7464	7214	3.34	-	-	-	-	-
Neutrophil %	14	60.50	57.14	5.54	-	-	-	-	-
Lymphocytes %	14	33.07	36	-8.85	-	-	-	-	-
Eisisionophil %	14	3.50	3.78	-8.16	-	-	-	-	-
Monocyte %	14	2.92	3.07	-4.87	-	-	-	-	-
PCV	14	40.79	38.59	5.39	2.2	3.16	0.84	2.60	<0.05

Table 8: Effect on Biochemical value

Investigation	n	Mean score		% of Relief	X	S D ±	S E ±	't	P
		BT	AT						
S.Uric acid	14	4.68	4.72	-0.76	-0.03	-	-	-	-
S.Cholesterol	14	199.64	187.42	6.11	12.21	-	-	-	-
Blood Urea	11	18.53	18.01	2.79	0.51	-	-	-	-
Total Protien	14	7.19	7.01	2.48	0.17	-	-	-	-
S.Albumin	14	4.29	3.92	8.48	0.36	-	-	-	-
S.Glubulin	14	3.05	3.08	-1.17	0.03	-	-	-	-
A/G Ratio	14	1.34	1.26	5.85	0.07	-	-	-	-
Blood Sugar	14	94.25	100.56	-6.69	6.31	-	-	-	-

DISCUSSION

Ama and *Vata* are the main pathogenic factors in the disease *Amavata*.^[9] The aetiopathogenesis of *Amavata* based on the disturbance of *Agni* and *Vata* dominant *Tridosha*. It is well known that *Amavata* is a disease of *Madhyantara Rogamarga* also involved in

this disease. The disease was similarity with *Lakshana* very much as *Asthimajagata Vata*. Involvement of *Tridosha* with dominance of *Vata* & *Asthi-majjavaha Srotas* provides the severity and crippling nature of the disease.^[10] The symptoms of RA mentioned in modern medical science resembles with the *Amavata*. The aetiology RA is uncertain, but it is thought to be multifactorial, there are several popular theories established regarding the cause, widely the disease is famous as an auto-immune disorder. The management of *Amavata* is still in enigma for modern science. An Ayurvedic classic provides a clear therapeutic guideline for the treatment of *Amavata*. Namely *Langhana*, *Swedana*, *Tikta-Katu-Deepana* drugs, *Virechana* etc. the treatment is based on *Amapachana* and amelioration of vitiated *Vata*.^[11] The prepared *Shamana Yoga (Nirgundi Ghan Vati)* is well known and popular drug which has possess *Sothahara* and *Shoolaprashaman* qualities and gives desired Rasayana effect. The drug suitably acts one vitiated *Vata* & *Kapha* and produces the ultimate effect.

Probable mode of action of Nirgundi Patra Pinda Sweda

Three phenomenon takes place which are valuable from the scientific point of view:

Advocating of heat in the form of warm *Pottali* repeatedly on affected surface. Lastly the light massage on the fomented parts.

A. By the above procedure the affect of therapy can be assumed in two ways:

- By the Physical manipulation.
- By the chosen drug.

Physical Manipulation

1. To help relieving the pain by increased blood circulation is that area.
2. Relaxing adjacent structure.
3. Checking the further process of the disease.
4. And also enhance the absorption of the drug material advocated during the process.

Effect of the therapeutic Drug

The effect of the chosen drug with the heat had administration may produce the analgesic effect by diverted stimuli. The thermo-stimulation applied above the site of region may possibly replace the already existing pain sensation there by producing the hypo-analgesic effect. In this course of *Nirgundi Patra Pinda Sweda* the administration of the drug is made in two ways:

- A. Oleation by the *Nirgundi* leaves tied in the form of *Pottali*.
- B. The fried *Nirgundi* leaves tried in the form of *Pottali*

The drug *Nirgundi* here administered in the form of oil and cell membrane is lipid in Nature, the higher the lipid solubility of the drug the super the concentration gradient within the membrane and thus greater will be the driving force for the diffusion of the substance across the membrane.

- Due to *Vedanasthapaana*, *Vishaghanna*, properties of *Nirgundi* helps in reducing the symptoms like *Shoola*, *Shootha Jwara* and also increases the immunity of the individual.^[12]
- Also better relief was observed in *Shoola*, *Gaurava*, *Sthabdata*, *Shootha by Nirgundi Patra Pinda Sweda* in both the groups due to above mention properties.

CONCLUSION

The symptoms of RA mentioned in modern medical science resembles with the *Amavata*. The aetiology RA is uncertain. *Balya*, *Rasayana*, *Jwaraghna*, *Shothghna*, *Vedanasthapanana*, properties of *Nirgundi* helps in reducing the symptoms like *Shoola*, *Shooha*, *Jwara* & also increases the immunity of the individual in the patient of *Amavata*. *Nirgundi Patra Pinda Sweda* local *Swedana* therapy used in mostly in practice was very effective. Better relief was observed in symptoms like *Shoola*, *Gaurava*, *Stabdhata*, *Shootha* by treatment regimen at significant level.

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