

## Clinical Research

Clinical efficacy of *Shiva Guggulu* and *Simhanada Guggulu* in *Amavata* (Rheumatoid Arthritis)Shweta A. Pandey, Nayan P. Joshi<sup>1</sup>, Dilip M. Pandya<sup>2</sup>PG Scholar, <sup>1</sup>I/C Head and Reader, <sup>2</sup>Ex-Professor, Department of Post Graduate Teaching and Research in Kayachikitsa and Panchakarma, Government Akhandanand Ayurved College, Ahmedabad, Gujarat, India

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## Abstract

*Amavata* is the second most common joint disorders. Nowadays erroneous dietary habits, lifestyle and environment have led to various autoimmune disorders i.e. *Amavisajanya Vikaara* and *Amavata* is one among them. Rheumatoid arthritis can be correlated with *Amavata* in view of its clinical features. Many research studies have been done to solve this clinical enigma, but an effective, safe, less complicated treatment is still required for the management of *Amavata*. In the present study, 24 patients of *Amavata* were registered and randomly grouped into two. In group A, *Shiva Guggulu* 6 g/day in divided doses and in group B, *Simhanada Guggulu* 6 g/day in divided doses were given for 8 weeks. On analysis of the results, it was found that *Simhanada Guggulu* provided better results as compared to *Shiva Guggulu* in the management of *Amavata*.

**Key words:** Agni, Ama, *Amavata*, rheumatoid arthritis, *Shiva Guggulu*, *Simhanada Guggulu*

## Introduction

*Amavata* (Rheumatoid Arthritis) is a challenge to the physician owing to its chronicity, incurability, complications, morbidity and crippling nature. The word *Amavata* is made up of a combination of two words, *Ama* and *Vata*.<sup>[1]</sup> The disease is mainly due to derangement of *Agni*, resulting in the production of *Ama* which circulates in the body and gets located in the *Sandhis* (joints) causing pain, stiffness, and swelling over the joints.<sup>[2]</sup> According to modern medicine, it can be correlated with Rheumatoid Arthritis (RA),<sup>[3]</sup> which is a chronic autoimmune disease that causes inflammation and deformity of the joints. RA can also cause inflammation of the tissues around the joints as well as other organs in the body. It is a common disorder, with varied clinical signs and symptoms related to multiple anatomical sites, both articular and extra-articular.

Allopathic system of medicine has got an important role to play in overcoming symptoms of articular diseases. Drugs<sup>[4]</sup> are available to ameliorate the symptoms due to inflammation, in the form of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), and the long-term suppression is achieved by the Disease-Modifying Antirheumatic Drugs (DMARDs).<sup>[5]</sup> But most of the NSAIDs<sup>[6]</sup> have gastrointestinal side effects, whereas

DMARDs have marrow, renal, and hepatic suppression. Hence, the management of this disease is merely insufficient in other systems of medicine and patients are continuously looking with a hope towards Ayurveda to overcome this challenge.

Many research works have been done to solve this clinical enigma, but an effective, safe, less complicated treatment is still required in the management of *Amavata*. In this clinical study, two drugs *Shiva Guggulu*<sup>[7]</sup> and *Simhanada Guggulu*<sup>[8]</sup> have been attempted to evaluate their comparative efficacy in *Amavata*.

## Materials and Methods

## Selection criteria

Patients between 18-60 yrs of age with classical features of *Amavata*<sup>[9]</sup> from OPD and IPD of Government Akhandanand and Maniben Ayurvedic Hospital were selected for the present work; irrespective of their sex, religion, education, etc. Detailed research proforma was prepared incorporating all the signs and symptoms of the disease.

## Inclusion criteria

The criteria laid down by American Rheumatism Association (ARA) - 1988<sup>[10]</sup> were also taken into consideration as follows:

1. Morning stiffness lasting for >1 h,
2. Arthritis of three or more joints
3. Arthritis of hand joints
4. Symmetrical arthritis
5. Presence of rheumatoid nodules
6. Presence of rheumatoid factor (RA factor)
7. Radiological changes.

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\*First four criteria must be present for duration of 6 weeks or more.

\*\*Diagnosis of RA is made with four or more criteria.

### Exclusion criteria

1. Chronicity for more than 10 years
2. Having severe crippling deformity
3. Patients suffering with cardiac disease, pulmonary TB, Diabetes Mellitus, etc.

### Investigations

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

1. RA factor
2. Hematological investigations: The routine hematological examination was carried out which included total leukocyte count, differential count, hemoglobin, packed cell volume, and Erythrocyte Sedimentation Rate (ESR).
3. Urine analysis: Routine urine analysis was carried out to detect the involvement of kidneys and to exclude the urinary tract infections and conditions like gonorrhea.

### Follow-up

A follow-up study was carried out for 8 weeks after completion of treatment.

### Dietary restrictions

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

### Criteria for assessment

The results of the therapy were assessed on the basis of clinical signs and symptoms mentioned in *Ayurvedic* classics as well as by ARA (1988). Functional capacity was also assessed and laboratory investigations were repeated at the end of the treatment. The scoring pattern adopted for the assessment is as follows:

(1) Pain in joint	Score
• Occasional	0
• Mild pain of bearable nature	1
• Frequent moderate pain, but no difficulty in joint movement	2
• Slight difficulty in joint movements due to severe pain, requires medication, and may remain throughout the day	3
• Severe pain with more difficulty in moving the joints, disturbing sleep and requires strong analgesics	4
(2) Swelling of the joint	
• No swelling	0
• Slight swelling	1
• Moderate swelling	2
• Severe swelling	3
(3) Stiffness of the joints	
• No stiffness or stiffness lasting for 5 min	0
• Stiffness lasting from 5 min to 2 h	1
• Stiffness lasting from 2 to 8 h	2
• Stiffness lasting for more than 8 h	3

(4) Tenderness of joints	
• No tenderness	0
• Subjective experience of tenderness	1
• Wincing of face on pressure	2
• Wincing of face with withdrawal of affected parts on pressure	3
• Resists touching	4
(5) Warmth of joint	
• Raised temperature when compared to the normal body surface	0
• Fall in local warmth	1
• Normal temperature	2
• No change after treatment	3
(6) General symptoms: General symptoms of <i>Amavata</i> like <i>Aruchi</i> , <i>Agnimandya</i> , <i>Apaka</i> , <i>Angamarda</i> , <i>Trishna</i> , <i>Gaurava</i> , <i>Alasya</i> , <i>Jwara</i> , <i>Praseka</i> , <i>Daha</i> , <i>Anaha</i> , <i>Bahumutrata</i> , <i>Kukshishula</i> , <i>Nidraviparyaya</i> , <i>Chhardi</i> , <i>Bhrama</i> , <i>Hritgraha</i> , <i>Vibandha</i> , <i>Antrakujan</i> , and <i>Daurbalya</i> were scored as mentioned below:	
• Symptom observed before treatment	2
• Some relief after treatment	1
• Complete relief after treatment	0
• No improvement after treatment	2
(7) <i>Dosha</i> and <i>Srotodusti</i>	
• Presence of symptoms before treatment	2
• Improvement in symptoms	1
• Absence of symptoms after treatment	0
• No change	2

### Functional assessment

The following periodical functional tests were carried out for objective assessment of the improvement of *Amavata* patients.

- (1) *Walking time*: The patients were asked to walk a distance of 25 feet and the time taken was recorded before and after the treatment by using stop watch.
- (2) *Grip strength*: To find out the functional capacity of the affected upper limb, the patient's ability to compress an inflated ordinary sphygmomanometer cuff under standard conditions was recorded before and after the treatment.
- (3) *Foot pressure*: To have an objective view of the functional capacity of the legs, foot pressure was recorded by the ability of the patients to press a weighing machine.
- (4) General functional capacity:
 

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

### Degree of disease activity

For diagnostic as well as for assessment purpose, the degree of disease activity was estimated on the basis of criteria laid down by ARA (1967) [Table 1].

**Table 1: ARA criteria for RA**

Grade	0	1	2	3
Fatigue	Not there	Works full time despite fatigue	Pt. must interrupt work to rest	Fatigued at rest
Grip strength	200 mmHg or more	199–120 mmHg	119–70 mmHg	Under 70 mmHg
ESR (in 1st hour)	0–20	21–35	36–50	Above 50
Hemoglobin (gm%)	12.5 or more	12.4–11	10.9–9.5	<9.5
General function	All activities without difficulty	Most of the activities, but with difficulty	Few activity cares for self	Little self-care mainly on chair and bed
Patients' estimate	Fine	Almost well	Pretty good	Pretty bad
Physicians' estimate	Inactive	Minimally active	Moderately active	Severely active
Apart from the above criteria of ARA (1967), two other criteria were added here				
Foot pressure	25–21 kg	20–16 kg	15–10 kg	<10 kg
Walking time(for 25 feet)	15–20 s	21–30 s	31–40 s	>40 s

**Table 2: Composition of Shiva Guggulu**

Drug	Latin name	Proportion
Shiva	<i>Terminalia chebula</i>	1 part
Vibhitaki	<i>Terminalia bellirica</i>	1 part
Amalaki	<i>Emblica officinalis</i>	1 part
Erandmoolachurna	<i>Ricinus communis</i>	4 parts
Shuddhagandhaka	-	2 parts
Shuddhaguggulu	<i>Commiphora mukul</i>	1 part
Rasna	<i>Pluchea lanceolata</i>	1 part
Vidanga	<i>Embelia ribes</i>	1 part
Maricha	<i>Piper nigrum</i>	1 part
Pippali	<i>Piper longam</i>	1 part
Dantimoola	<i>Baliospermum montanum</i>	1 part
Jatamansi	<i>Nordostachys jatamansi</i>	1 part
Shunthi	<i>Zingiber officinale</i>	1 part
Devdaru	<i>Cedrus deodara</i>	1 part

**Table 3: Composition of Simhanada Guggulu**

Drug	Latin name	Proportion
Shiva	<i>Terminalia chebula</i>	1 part
Vibhitaki	<i>Terminalia bellerica</i>	1 part
Amalaki	<i>Emblica officinalis</i>	1 part
Shuddhagandhaka	-	2 parts
Shuddhaguggulu	<i>Commiphora mukul</i>	4 parts
Erandmoola	<i>Ricinus communis</i>	4 parts

In the criteria given above, the maximum score is 30, which represents an average of grade 3 (severely active). By dividing the total score by 10, the grade of disease is obtained and denoted by figures from 0 to 3.

Total effect of therapy was assessed on the basis of the criteria given as below

Complete remission	100% relief
Marked improvement	75% - 99% relief
Moderate improvement	50 -74% relief
Mild improvement	25- 49% relief
Unchanged	<24%

## Statistical analysis

The obtained information was analyzed statistically. Paired *t*-test was carried out to evaluate statistical significance of the therapy. *P* <0.01 is considered as significant and *P* < 0.001 is considered as highly significant.

**Trial Drug and Posology:** Both the trial drugs were prepared at Govt. Ayurvedic Pharmacy, Gujarat. The composition is provided at Tables 2 and 3.

**Shiva Guggulu (group A):** The patients of this group were treated with Shiva Guggulu at a dose of 6 g/day for 8 weeks with Luke warm water.

**Simhanada Guggulu (group B):** The patients of this group were treated with Simhanada Guggulu at a dose of 6 g/day for 8 weeks with Luke warm water.

## Results and Observations

Maximum number of patients (41.66%) belonged to the age group of 41–50 years. Majority of the patients were females (91.66%), 75% patients were Hindus, and 91.66% were married. 66.66% patients were housewives, 50% were from middle class, and 33.33% were uneducated patients. Maximum numbers of patients were of Vata-Kapha Prakriti (45.83%), Mandagni (62.5%), Madhyama Sara (54.16%), Madhyama Sattva (50%) and Madhyama Samhanana (58.33%) were found in majority of the patients. 50% of patients had negative family history, 58% patients had a gradual onset and 37.5% patients had chronicity of 2–4 years. Most of the patients were found to be indulged in Viruddha Ahara (66.66%), Snigdha Ahara (45.83%), Vishamashana (62.5%), Bhojanottara Vyayama, Adhyasana (54.16%), and Diwasvapa (50%). It was observed that maximum (41.6%) patients had Atichinta, followed by 33.33% with Manodvega and 25% with Shoka as Manasika Nidana. It was observed that maximum numbers of patients (100%) have Sandhishoola followed by Sandhishotha (91.66%), Sparshasahyata (75%), and Sandhigraha (87.50%). Among the general symptoms, Angamarda was observed in 79.16%, Aruchi in 70.83%, Gaurva in 83.33%, Apaka in 62.50%, Sunata-Anganama in 54.16%, Alasya in 37.5%, Trishna in 41.66%, and Jwara in 37.5% of patients. Majority of the patients (83.33%) had Vibandha and

75% had *Ushnata* around the joints and *Anaha*, followed by 70.83% with *Daurbalya*, 66.66% with *Agnimandya*, 58.33% with *Nidraviparyaya*, 45.83% with *Bahumutrata*, 29.16% with *Daha*, 25.00% had *Kandu* and *Bhrama* each, 20.83% had *Kukshishula*, *Hridgraha*, *Chhardi* each, while 12.5% had *Praseka* and 4.16% had *Antrakujana*.

In majority of patients, Proximal Inter Phalangeal (PIP) joint was involved (91.66%), followed by involvement of wrist in 83.33%, knee in 79.16%, elbow in 62.50%, hip in 58.33%, shoulder in 54.16%, ankle in 50%, neck joint in 45.83%, Distal Inter Phalangeal (DIP) joint and Meta-Carpals (MC) each in 41.66%, inter-phalangeal joint of foot in 37.50%, and jaw in 4.16% of the patients.

### Comparative effect of Shiva Guggulu and Simhanada Guggulu on cardinal symptoms of Amavata

Effect of therapy on *Sandhishoola*, *Sandhishotha*, *Sandhigraha*

**Table 4: Effect of group A in *Sandhishoola***

Cardinal features	n	Mean score		% of relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	5	1.8	0.6	66.66	1.2	0.45	0.2	6	<0.01
Rt.	6	1.33	0.5	62.5	0.83	0.41	0.17	5	<0.01
PIP									
Lt.	7	1.43	0.57	60	0.86	0.38	0.14	6	<0.001
Rt.	8	1.63	0.38	70.33	1.14	0.38	0.14	8	<0.001
MC									
Lt.	4	2.75	1	63.63	1.75	0.5	0.25	7	<0.01
Rt.	4	2.25	1.5	33.33	0.75	0.5	0.25	3	>0.05
MT									
Lt.	2	1.5	0	100	1.5	0.70	0.25	3	<0.05
Rt.	1	2	1	50	1	-	-	-	-
Wrist									
Lt.	6	1	0.17	83.33	0.83	0.40	0.17	5	<0.01
Rt.	6	1	0.17	83.33	0.83	0.40	0.17	5	<0.01
Elbow									
Lt.	2	1.5	0.5	66.66	1	1.4	1	1	>0.05
Rt.	2	1	0.5	50	0.5	0.70	0.5	1	>0.05
Shl.									
Lt.	4	1.25	0.5	30	0.38	0.52	0.18	2.04	>0.05
Rt.	3	1.33	0.67	50	0.67	0.58	0.33	2	>0.05
Ankle									
Lt.	6	1.67	0.67	60	1	0	0	-	-
Rt.	5	1.6	0.6	62.5	1	0.71	0.32	3.16	<0.05
Knee									
Lt.	8	2	0.75	62.5	1.25	0.46	0.16	7.64	<0.001
Rt.	8	2	0.75	62.5	1.25	0.46	0.16	7.64	<0.001
Hip									
Lt.	3	1.67	0.67	60	1	1	0.58	1.7	>0.05
Rt.	2	1	0.5	50	0.5	0.71	0.5	1	>0.05
Neck									
Lt.	3	1.33	0.67	50	0.67	0.58	0.33	2	>0.05
Jaw									
Lt.	1	1	0	100	-	-	-	-	-

and *Sparshasahyata* with the treatment of trial drugs is provided at Tables 4-14.

### Functional assessments

In group A, the mean score of grip strength was 1.14 before treatment, which was reduced to 0.57 after treatment, with 50% relief. It was statistically insignificant. The mean score of grip strength in group B was 2.4 before treatment, which was reduced to 1.5 after treatment, with 37.5% relief. It was statistically highly significant.

Before treatment the mean score of walking time in group A was 2, which was reduced to 1 after treatment, with 50% relief. It was statistically insignificant. The mean score of walking time in group B was 1.75 before treatment, which was reduced to 0.75 after treatment, with 45.71% relief. It was statistically significant.

In group A, the mean score of foot pressure was 1 before treatment, which was decreased to 0.66 after treatment, with 33.33% relief. It was statistically insignificant. The mean score of foot pressure in group B was 2.3 before treatment, which

**Table 5: Effect of group A in *Sandhishotha***

Cardinal features	n	Mean score		% of relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	6	1.5	0.5	66.67	1	0.63	0.25	3.87	<0.05
Rt.	4	1.25	0.5	60	0.75	0.5	0.25	3	>0.05
PIP									
Lt.	5	1.6	0.6	62.5	1	0.70	0.31	3.16	<0.05
Rt.	5	1.6	0.6	62.5	1	0	0	-	-
MC									
Lt.	2	1.5	1	33.33	0.5	0.70	0.5	1	>0.05
Rt.	2	1.5	0.5	66.66	1	0	0	-	-
MT									
Lt.	2	2	1	50	1	0	-	-	-
Rt.	2	1.5	0.5	66.66	1	0	0	-	-
Wrist									
Lt.	5	1.6	0.6	62.5	1	0.70	0.31	3.16	<0.05
Rt.	3	1	0.33	66.66	0.66	0.57	0.33	2	>0.05
Elbow									
Lt.	4	1.5	0.5	66.66	1	0	0	-	-
Rt.	3	1.33	0.33	75	1	0	0	-	-
Shl.									
Rt.	2	1	0.5	50	0.5	0.70	0.5	1	>0.05
Ankle									
Lt.	5	1	0.4	60	0.6	0.54	0.24	2.44	>0.05
Rt.	3	1	0.33	66.66	0.66	0.57	0.33	2	>0.05
Knee									
Lt.	8	1.75	0.37	78.57	1.4	0.51	0.18	7.51	<0.001
Rt.	7	1.71	0.57	66.66	1.14	0.37	0.14	8	<0.001
Hip									
Lt.	8	1.75	.37	78.57	1.37	0.51	0.18	7.51	<0.001
Rt.	4	1.75	0.5	71.42	1.25	0.96	0.48	2.61	>0.05
Jaw									
Lt.	1	1	0	100	1	-	-	-	-

**Table 6: Effect of group A in *sandhigraha***

Cardinal features	n	Mean score		% of relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	5	1.4	0.6	57.14	0.8	0.45	0.2	4	>0.05
Rt.	3	1.66	0.66	60	1	1	0.57	1.73	>0.05
PIP									
Lt.	7	1.43	0.43	70	1	0	0	-	-
Rt.	7	1.43	0.43	70	1	0	0	-	-
MC									
Lt.	1	2	1	50	1	-	-	-	-
Rt.	1	2	1	50	1	-	-	-	-
Wrist									
Lt.	5	1.2	0.4	66.67	0.8	0.45	0.2	4	<0.05
Rt.	5	1.2	0.4	66.66	0.8	0.84	0.37	2.13	=0.10
Elbow									
Lt.	2	1.5	0.5	66.67	1	0	0	-	-
Rt.	2	1	0.5	50	0.5	0.70	0.5	1	>0.05
Shl.									
Lt.	2	1	0.5	50	0.50	0.70	0.5	1	>0.05
Rt.	2	1	0	100	1	0	0	-	-
Ankle									
Lt.	4	1.25	0.5	60	0.75	0.5	0.25	3	>0.05
Rt.	3	1.33	0.33	75	1	0	0	-	-
Knee									
Lt.	7	1.7	0.57	66.67	1.14	0.69	0.26	4.38	<0.01
Rt.	7	1.58	0.58	63.64	1	0.57	0.21	4.58	<0.01
Hip									
Lt.	3	2	1	50	1	1	0.57	1.73	>0.05
Neck									
Lt.	2	1	0.5	50	0.4	0.70	0.5	1	>0.05

was decreased to 1.4 after treatment with, 39.13% relief. It was statistically highly significant.

In group A, the mean score of general functional capacity was 1.33 before treatment, which was reduced to 0.66 after treatment, with 50% relief. It was statistically highly significant. The mean score of general functional capacity in group B was 1.66 before treatment, which was reduced to 0.66 after treatment, with 60% relief and was statistically insignificant.

In group A, the mean score of degree of disease activity was 1.75 before treatment, which was reduced to 1 after treatment, with 42.85% relief. It was statistically highly significant. The mean score of degree of disease activity in group B was 1.5 before treatment, which was reduced to 0.75 after treatment, with 50% relief. It was statistically significant.

Regarding ESR value, the mean scores before treatment in A and B groups were 54.5 and 55.2, respectively, and they were reduced to 45.3 and 40.1, respectively, after treatment. Group A percentage relief was 16.88%, while in group B it was 27.35%.

An apparent difference in improvement of all the cardinal symptoms was observed with the treatment. On comparing Group B proved to be better than Group A. Statistically

**Table 7: Effect of group A in *sparshasahyata***

Cardinal features	n	Mean score		% of relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	4	1.25	0.5	60	0.75	0.5	0.25	3	>0.05
Rt.	10	2.3	0.8	65.22	1.5	0.71	0.22	6.71	<0.001
PIP									
Lt.	5	1	0.4	60	0.6	0.54	0.24	2.45	>0.05
Rt.	5	1	0.4	60	0.6	0.54	0.24	2.45	>0.05
MC									
Lt.	2	1.5	0.5	66.67	1	0	0	-	-
Rt.	2	1.5	0.5	66.66	1	0	0	-	-
Wrist									
Lt.	2	1.5	0.5	66.67	1	0	0	-	-
Rt.	2	1.5	0.5	66.67	1	0	0	-	-
Elbow									
Lt.	2	1.5	0.5	66.67	1	0	0	-	-
Rt.	1	1	1	0	-	-	-	-	-
Ankle									
Lt.	5	1.4	0.6	57.14	0.8	0.45	0.2	4	<0.05
Rt.	4	1.5	0.75	50	0.75	0.5	0.25	3	>0.05
Knee									
Lt.	7	1.4	0.42	70	1	0	0	-	-
Rt.	7	1.4	0.43	70	1	0	0	-	-
Jaw									
Lt.	1	2	0	100	2	0	0	-	-

highly significant difference was found in the improvement of *Sandhigraha* and statistically significant difference was found in the improvement of *Sandhishoola* and *Sparshasahyata* by *Simhanada Guggulu* than *Shiva Guggulu*, whereas insignificant difference was observed in the improvement of *Sandhishotha*. So, from the obtained data it may be inferred that group B is more effective than group A.

## Discussion

Maximum numbers of patients had involvement of *Kaphavridhhi* and *Prakopa*, followed by *Vata Vriddhi* and *Prakopa*, *Dosha* and *Dushti* of *Rasavaha*, *Asthivaha*, *Majjavaha*, *Purishvaha* and *Annavaha Srotas*, which is in accordance with the main *Srotas* involved in the *Amavata Roga Samprapti*. Maximum number of patients (41.66%) belonged to the age group of 41–50 years, which shows its predominance in middle-age group. In this stage of life, *Vyadhikshmatwa* gradually decreases and accumulation of *Dosha* occurs, particularly *Vata Dosha* which acts as the major predisposing factor for this disease process. Thus, this age group is more prone for this disease. This data is slightly in accordance with the modern findings that the onset is most frequent during the fourth and fifth decades of life, with 80% of all patients developing the disease of age between 35 and 50 years. Majority of the patients (91.66%) were females, which clearly shows the predominance of the disease in females. Textual reference also reflects the predominance of rheumatoid arthritis in females. The nature of

**Table 8: Effect of group B in *sandhishoola***

Cardinal features	n	Mean score		% of relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	5	1.8	0.6	66.67	1.2	0.44	0.2	6	<0.01
Rt.	5	2	0.8	60	1.2	0.83	0.37	3.2	<0.05
PIP									
Lt.	10	2.1	0.8	61.90	1.3	0.67	0.21	6.09	<0.001
Rt.	10	1.9	0.7	63.15	1.2	0.78	0.24	4.8	<0.001
Wrist									
Lt.	7	2.14	0.85	60	1.28	0.48	0.18	6.9	<0.001
Rt.	7	2.14	0.85	60	1.28	0.48	0.18	6.9	<0.001
Elbow									
Lt.	3	1.67	0.66	60	1	0	0	-	-
Rt.	3	1.66	0.33	80	1.33	0.57	0.33	4	>0.05
Shl.									
Lt.	3	2	0.33	83.33	1.67	0.57	0.33	5	<0.05
Rt.	3	1.66	0.33	80	1.33	0.57	0.33	4	>0.05
Ankle									
Lt.	7	2.28	0.71	68.75	1.57	0.53	0.20	7.77	<0.001
Rt.	7	2.14	0.57	73.33	1.57	0.53	0.20	7.77	<0.001
Knee									
Lt.	9	1.77	0.55	56.24	1	0.70	0.23	4.24	<0.01
Rt.	9	2	0.77	61.11	1.22	0.66	0.22	5.5	<0.01
Hip									
Lt.	5	1.8	0.6	66.66	1.2	0.44	0.2	6	<0.01
Rt.	2	2	1	50	1	0	0	-	-
Neck									
Lt.	4	1.25	0	100	1.25	0.5	0.25	5	<0.05

**Table 9: Effect of group B in *sandhishotha***

Cardinal symptoms	n	Mean score		% of relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	5	1.6	0.6	62.5	1	0.70	0.31	3.16	<0.05
Rt.	6	1.33	0.5	62.5	0.83	0.40	0.16	5	<0.01
PIP									
Lt.	9	1.66	0.55	66.6	1.11	0.33	0.11	10	<0.001
Rt.	9	1.66	0.66	60	1	0	0	-	-
Wrist									
Lt.	4	2.75	1.5	45.45	1.25	0.5	0.25	5	<0.05
Rt.	4	2.75	1.25	54.54	1.5	0.57	0.28	5.19	<0.05
Elbow									
Lt.	2	1	0	100	1	0	0	-	-
Rt.	3	1	0	100	1	0	0	-	-
Ankle									
Lt.	7	2.28	0.71	68.75	1.31	0.53	0.20	7.78	<0.001
Rt.	7	2.14	0.85	60	1.28	0.48	0.18	6.97	<0.001
Knee									
Lt.	10	2	0.8	60	1.2	0.63	0.2	6	<0.001
Rt.	10	1.9	0.8	57.89	1.1	0.31	0.1	11.	<0.001

**Table 10: Effect of group B in *sandhigraha***

Cardinal features	n	Mean score		% of relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	4	1.5	0.5	66.66	1	0	0	-	-
Rt.	4	1.5	0.5	66.66	1	0	0	-	-
PIP									
Lt.	10	2	0.8	60	1.2	0.42	0.13	9	<0.001
Rt.	10	1.9	0.7	63.15	1.2	0.42	0.13	9	<0.001
Wrist									
Lt.	7	1.85	0.71	61.53	1.14	0.69	0.26	4.38	<0.01
Rt.	7	1.85	0.71	61.53	1.14	0.377	0.14	8	<0.001
Elbow									
Lt.	3	1.33	0.33	75	1	0	0	-	-
Rt.	3	1	0.33	66.66	0.66	0.577	0.33	2	>0.05
Shl.									
Lt.	3	1.66	0	100	1.66	0.57	0.33	5	<0.05
Rt.	3	1.33	0	100	1.33	0.57	0.33	4	>0.05
Ankle									
Lt.	7	2.14	0.85	60	1.28	0.75	0.28	4.5	<0.01
Rt.	6	2.33	1	57.14	1.33	0.81	0.33	4	<0.05
Knee									
Lt.	10	2	0.8	60	1.2	0.42	0.13	9	<0.001
Rt.	10	2	0.9	55	1.1	0.31	0.1	11	<0.001
Hip									
Lt.	5	1.8	0.8	55.55	1	0	0	-	-
Neck									
Lt.	2	1	0	100	1	0	0	-	-
Rt.	1	1	0	100	1	-	-	-	-

**Table 11: Effect of group B in *sparshashayata***

Cardinal features	n	Mean score		% of Relief	X	SD	SE	t	P
		BT	AT						
DIP									
Lt.	4	2	0.75	62.5	1.25	0.5	0.25	5	<0.05
Rt.	4	1.5	0.5	66.66	1	0	0	-	-
PIP									
Lt.	7	2	0.71	64.28	1.28	0.48	0.18	6.97	<0.001
Rt.	7	1.71	0.57	66.67	1.14	0.37	0.14	8	<0.001
Wrist									
Lt.	4	2.5	1.25	50	1.25	0.5	0.25	5	<0.05
Rt.	4	2.5	1	60	1.5	0.57	0.28	5.19	<0.05
Elbow									
Lt.	2	1.5	0.5	66.66	1	0	0	-	-
Shl.									
Rt.	1	1	0	100	-	-	-	-	-
Ankle									
Lt.	7	2.14	0.71	66.66	1.42	0.53	0.20	7.07	<0.001
Rt.	6	2.33	0.83	64.28	1.5	0.54	0.22	6.70	<0.001
Knee									
Lt.	10	1.8	0.9	50	0.9	0.56	0.17	5.01	<0.001
Rt.	10	1.8	0.7	61.11	1.1	0.31	0.1	11	<0.001



**Table 12: Percentage effect of therapy on cardinal symptoms**

Symptoms	Shiva guggulu % relief	Simhanada guggulu % relief
Sandhishoola	68.53	71.23
Sandhishotha	68.35	71.00
Sandhigraha	68.11	70.87
Sparshasahyata	66.02	68.01

**Table 14: Comparative effect of both groups in patients of Amavata (by unpaired t-test)**

Chief complaints	Mean±SEM		%	t	P
	Group A	Group B	change		
Sandhishoola	0.675± 0.070	1.067± 0.088	36.32↓	3.45	<0.01
Sandhishotha	0.517± 0.059	0.717± 0.086	27.89↓	1.91	>0.05
Sandhigraha	0.508± 0.066	0.908± 0.070	44.05↓	4.12	<0.001
Sparshasahyata	0.358± 0.059	0.658± 0.108	45.59↓	2.43	<0.05

↓-Decrease

the household work especially after taking meal, which is one of the causative factors mentioned in Ayurvedic text, may be the responsible factor of Amavata. In this present study, data show that maximum (70.83%) patients were RA negative and 29.16% were RA positive. The presence of RA factor does not establish the diagnosis for RA, but it can be of prognostic significance because patients with high titers tend to have more severe and progressive disease with extra-articular manifestation.

Regarding the joint wise relief, Simhanada Guggulu showed better results than Shiva Guggulu. In both the groups, none of the patients were found to be completely cured because of the short duration course of therapy as well as chronic nature of the disease. In group A, marked improvement in 30% and moderate improvement in 70% of patients was observed, whereas in group B, 40% of patients showed marked improvement and moderate improvement was seen in 60%.

### Probable mode of action of Simhanada Guggulu in Amavata

Both the trial drugs have Katu, Tikta Rasa, Laghu, Ruksha Guna, Ushna Virya, Katu Vipaka Vedanasthapana, Deepana-Pachana, Rasayana and Medhya Karma hence, it has Vatakaphashamaka, Amapachaka, Srotoshodhaka properties which helps in breaking the pathogenesis of Amavata. Specially Tikta and Katu Rasa present in Simhanada Guggulu possess the antagonistic properties to that of Ama and Kapha which are the chief causative factors in this disease. Because of their Agniriddhikara property, they increase digestive power, which also digests Amarasa and reduces the excessive production of Kapha and also removes the obstruction of the Srotas. Because of Ushna Virya, it also alleviates vitiated Vata. Katu Rasa helps in Agni Deepana Pachana Karma of Ushna Virya, Katu Rasa and Kaphahara Karma of Ruksha, Laghu Guna, and Ushna Virya Amadosha Pachana occurs. Lekhana Karma of Laghu

**Table 13: Overall effects of Shiva Guggulu and Simhanada Guggulu in patients of Amavata**

Effects	Group A		Group B	
	No. of patients	Percentage	No. of patients	Percentage
Complete remission (100%)	0	0	0	0
Marked improvement (76–99%)	3	30	4	40
Moderate improvement (51–75%)	7	70	6	60
Mild improvement (25–50%)	0	0	0	0
Unchanged (<25%)	0	0	0	0

Guna and Tikta Rasa removes the adhered Dosha from the Dushita Srotas. The Ushna properties of Simhanada Guggulu do not allow the Ama to linger at the site of pathogenesis and to create Srotorodha. It reduces Srotorodha and pain. It has also the antagonistic action of Sheeta and Ruksha Guna of Vata. Thus, it controls Ama and Vata together and minimizes the process of pathogenesis. After Srotovivronoti Karma of Katu Rasa and Agnideepana, Srotovishodhana Karma by Tikta Rasa, Lekhana action Srotosodhana occurs. This leads to assimilation of undigested and immature Amarasa. By virtue of Shoshana and Pachana property of Katu, Tikta Rasa, and Ushna Virya, it absorbs excessive Dravta which leads to Samyaka Yuktamagni. Due to Ushna Virya and Katu Vipaka of Simhanad Guggulu, Vatasamana occurs. After Samyaka Yuktamagni and Vatasamana Amavata, Vyadhi Shamana occurs.

### Conclusion

It was observed from the treatment that Simhanada Guggulu provided comparatively better relief in cardinal signs and symptoms of Amavata.

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## हिन्दी सारांश

# आमवात पर शिवा गुग्गुलु तथा सिंहनाद गुग्गुलु के प्रभाव का चिकित्सकीय अध्ययन

श्वेता ए. पाण्डेय, नयन पी. जोशी, दिलीप एम. पण्ड्या

आमवात रोग संधिगत विकारों में दूसरा स्थान रखता है। आजकल मिथ्या आहार विहार का प्रचलन बढ़ता जा रहा है जो विभिन्न प्रकार के आमविषजन्य विकारों का कारणस्वरूप है, आमवात उन रोगों में से एक है। आमवात रोग में आम, अग्नि की विकृति के कारण उत्पन्न होकर विकृत वात की सहायता से कफस्थान में संचित हो जाता है और संधिशूल, शोथ, स्तब्धता एवं स्पर्शासह्यता उत्पन्न करता है। इसके लिये अनेक शोध हो चुके हैं किन्तु अभी भी एक सुरक्षित एवं सुलभ चिकित्सा की आवश्यकता आमवात रोग में है। इसलिये इस गवेषणा में कुल २४ रोगी पंजीकृत किये गये एवं उन्हें दो वर्गों में बांटा गया। वर्ग 'अ' में शिवा गुग्गुलु ६ ग्राम प्रतिदिन विभाजित मात्रा में तथा वर्ग 'ब' में सिंहनाद गुग्गुलु ६ ग्राम प्रतिदिन विभाजित मात्रा में, ८ सप्ताह तक दिया गया। रोग के कारण लक्षण, व्याधि की प्रवृत्ति का सावधानीपूर्वक अध्ययन किया गया जिससे व्याधि की संप्राप्ति का सही आंकलन किया जा सके। दोनों वर्गों में औषधियों के प्रभाव का विशेष रूप से तैयार रुग्णपत्रक द्वारा निरीक्षण किया गया। इस परीक्षण में आमवात के लक्षणों में सिंहनाद गुग्गुलु का चिकित्सकीय प्रभाव शिवा गुग्गुलु से बेहतर पाया गया।

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