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COMPARATIVE CLINICAL EVALUATION OF BHĀVITA ŚIGRU MŪLA CŪRṆA AND SIṂHANĀDA GUGGULU IN THE MANAGEMENT OF ĀMAVĀTA (RHEUMATOID ARTHRITIS)

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Abstract- Āmavāta is a chronic disorder described in Āyurveda, characterized by pain, swelling and stiffness of joints due to the formation and accumulation of Āma. It closely resembles Rheumatoid Arthritis in its clinical presentation and poses challenges in long-term management. The present study was designed to evaluate the effect of Bhāvita Śigru Mūla Cūrṇa (*Moringa oleifera* Lam.) and to compare its efficacy with Siṃhanāda Guggulu. A total of 60 patients were selected and divided into two groups, where Group A received Bhāvita Śigru Mūla Cūrṇa and Group B received Siṃhanāda Guggulu. The therapy was assessed based on changes in clinical symptoms and laboratory parameters. Both groups showed significant improvement after treatment; however, better results were observed in Group A in terms of reduction in pain, swelling, stiffness and improvement in joint mobility. The enhanced effect of Bhāvita Śigru Mūla Cūrṇa may be due to its ability to improve digestion, reduce Āma and restore functional balance, which is further potentiated by the Bhāvana process. The study suggests that Bhāvita Śigru Mūla Cūrṇa can be considered an effective option in the management of Āmavāta.

KEYWORDS: Āmavāta, Bhāvana Saṃskāra, Śigru Mūla Cūrṇa, *Moringa oleifera* Lam., Siṃhanāda Guggulu, Rheumatoid Arthritis, Randomized Controlled Trial, Ayurvedic management.

I. INTRODUCTION

Āmavāta is a well-described disease in Āyurveda, primarily caused by the formation of *Āma*, which results from *Agnimāndya*, leading to the production of improperly digested *Rasa Dhātu*. This *Āma* circulates throughout the body and gets localized in the *Sandhi-s* (joints), producing symptoms such as pain, stiffness, and swelling. The condition was first elaborated by Mādhavakara, who described its nidāna, samprāpti, lakṣaṇa, and bheda in detail. Clinically, Āmavāta can be correlated with Rheumatoid Arthritis, a chronic inflammatory autoimmune disorder involving multiple joints and systemic manifestations.

Rheumatoid Arthritis is one of the most common inflammatory arthritides, affecting approximately 0.5–1% of the adult population worldwide. Despite advances in modern medicine, including the use of non-steroidal anti-inflammatory drugs and immunomodulators, long-term management remains challenging due to associated adverse effects. Hence, there is a need for safer and effective therapeutic alternatives.

In Āyurveda, the management of Āmavāta involves principles such as *Laṅghana*, *Svedana*, *Dīpana*, *Pācana*, *Virecana* and *Basti*. Among the various drugs described, Śigru (*Moringa oleifera*) is considered highly effective due to its properties like *Tikta* and *Kaṭu Rasa*, *Laghu* and *Rūkṣa Guṇa*, *Uṣṇa Vīrya* and *Kaṭu Vipāka*, along with *Dīpana*, *Pācana*, *Śothahara* and *Śūlahara* actions. Bhāvana Saṃskāra is an important

pharmaceutical process which enhances the potency and therapeutic efficacy of drugs by facilitating transformation and better assimilation of active constituents.

Hence, the present study was planned to evaluate the efficacy of Bhāvita Śigru Mūla Cūrṇa in the management of Āmavāta and to compare its effect with a classical formulation, Simhanāda Guggulu. A total of 60 patients were selected and randomly divided into two groups, each comprising 30 patients. Group A was administered Bhāvita Śigru Mūla Cūrṇa, while Group B received Simhanāda Guggulu. The study aimed to assess and compare their therapeutic effects on the clinical manifestations of Āmavāta.

MATERIALS AND METHODS:

Randomized Controlled Prospective Single Blind Clinical study of BHĀVITA ŚIGRU MŪLA **(*Moringa oleifera* Lam.)** was done in P.G. Dravyaguṇa OPD at S.V. Ayurvedic College & Hospital, Tirupati.

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Selection of subjects: A total of 74 patients were assessed for eligibility. Out of these, 14 patients were dropped out due to reasons such as; Not meeting inclusion criteria (n = 5), unwillingness to participate (n = 3), presence of associated systemic illnesses (n = 2), severe disease requiring immediate intervention (n = 2), irregular follow-up (n = 1) and personal reasons (n = 1).

The remaining 60 patients were enrolled in the study, and all participants completed the trial. The patients were divided into 2 groups. Each group contained 30 patients. Medicine was given for Oral administration.

- **Group A** treated with Bhāvita Śigru Mūla Cūrṇa; 5gms; BID; After food (Test Group) orally with lukewarm water.
- **Group B** treated with Siṃhanāda Guggulu; 250mg; BID; After food (Control Group) orally with lukewarm water.

Inclusive Criteria: The patients presenting with signs and symptoms as per Madhava Nidana were preferentially considered. The criteria set up by the ARA 1988 were also taken into consideration as follows Morning stiffness lasting for >1 hour, Arthritis of three or more joints, Arthritis of hand joints, Swelling, Stiffness, Tenderness, Range of motion affected, Symmetrical Arthritis, Presence of CRP Levels, ESR Levels and Rheumatoid factors (RA factor)

Exclusive Criteria: Patients suffering from Psoriatic Arthritis, Syphilitic Arthritis, Systemic Lupus Erythematosus (SLE), Tuberculosis, Chronic Alcoholism, Pregnant Women, Other Major Systemic Diseases, Chronicity for more than 10 years, having severe crippling deformity and Irregular follow up were excluded.

INVESTIGATIONS:

All the patients were screened for investigations like ESR, RA factor, CRP Levels before and after treatment. Observations were recorded in the tabular form and thereafter results were worked out.

PREPARATION OF TRIAL DRUG: (BHĀVITA ŚIGRU MŪLA CŪRṆA)

1. **Cūrṇa Preparation:** Śigru Mūla were collected, thoroughly washed under water to remove the impurities and made into pieces and dried under Tray dryer at T.T.D's Sri Srinivasa Ayurveda Pharmacy at Srinivasamangapuram for 3 days. After proper drying, the roots were weighed and it was noticed that the weight of the Roots was reduced from 98 kgs to 27.35 kgs. The reduction in weight would be mainly because of moisture content which got evaporated on drying. Later dried Roots of Śigru samples are pulverized. The obtained coarse powder was sieved with mesh no. 100 to obtain fine powder of Śigru Mūla. Around 27 kgs of the fine powder was obtained from the sample after sieving due to more fiber content in the Śigru.

2. **Trituration process:** After preparation of drug in Cūrṇa form, Kvātha of the Mūla Cūrṇa was prepared. Then, 5 Bhāvanās were given to the Śigru Mūla Cūrṇa with Śigru Mūla Kvātha to potentiate the drug and later after drying, Cūrṇa was stored in air tight containers to prevent contamination. After this process, around 13 kgs of the fine powder was obtained.

The above mentioned processes were carried out at P.G. Department of Dravyaguṇa, S.V. Ayurvedic College, Tirupati and T.T.D's Sri Srinivasa Ayurveda Pharmacy at Srinivasamangapuram, at Tirupati.

PROCUREMENT OF CONTROL DRUG: (SIMHANĀDA GUGGULU) Simhanāda Guggulu tablets used in the study were procured from a GMP-certified Ayurvedic pharmacy (Baidyanatha), ensuring quality and standardization.

PARAMETERS OF ASSESSMENTS

Criteria to assess the effect of the test drug

All the selected subjects were advised to come for follow up at every 15 days interval upto three months.

Assessment was done under the headings Subjective and Objective parameters.

Subjective Parameters:

For the purpose of perfect diagnosis and assessment, a special research proforma was utilized to study Āmavāta.

- Vṛścikadaṃśavat Vedanā (Pain in affected Joints)
- Aṅgamarda (Pain in all over the body)
- Apāka (Indigestion)
- Śūnāṅgatā (Swelling of Joints)
- Aruci (Anorexia)
- Aṅgastabddhatā (Stiffness)

Objective Parameters:

- Sparśa Asahyatā (Tenderness)
- Śūnāṅgatā (Swelling of Joints)

The effect of therapy was assessed with regards to the laboratory investigations.

Clinical assessment: The assessment of the patients was done before and after the treatment.

Table No. 1: Pain in the joint

Score Symptoms

GRADE	CRITERIA OF SYMPTOMS
0	No pain
1	Mild pain of bearable nature, comes occasionally
2	Moderate pain but no difficulty in movement of joint, appears frequently and requires some upaśaya measures for relief
3	Slight difficulty in joint movements due to moderate pain or severe pain, requires medication
4	More difficulty in moving joints, pain is severe disturbing sleep and requires strong medication

Table No. 2: Swelling

GRADE	SEVERITY OF SWELLING
0	No Swelling
1	Slight Swelling
2	Moderate Swelling
3	Severe Swelling

Table No. 3: Stiffness

GRADE	CRITERIA OF SYMPTOMS
0	No stiffness or stiffness lasting for 5 minutes
1	Stiffness lasting for less than 30 minutes
2	Stiffness lasting for 30 minutes to 1 hours
3	Stiffness lasting for more than for 1 hour to 2 hours
4	Stiffness lasting for more than for 2 hours to 4 hours
5	Stiffness lasting for more than 4 hours

Table No. 4: Tenderness

GRADE	CRITERIA OF SYMPTOMS
0	No tenderness
1	Tender but bearable
2	Tender and winced
3	Tender, winced and withdraw

Table No. 5: Range of motion

GRADE	CRITERIA OF SYMPTOMS
0	Normal flexion
1	<135º - 100º
2	<100º - 75º
3	<75º

OBJECTIVE PARAMETERS

Table No. 6: ESR

GRADE	ESR mm/1st hour
0	<20
1	21 - 40
2	41 - 60
3	61 - 80
4	>80

Table No. 7: R.F Test

GRADE	Rheumatoid factor
0	<20
1	21 - 40
2	41 - 60

Table No. 8: CRP: This test is performed to detect the acute or chronic inflammation

GRADE	INTERPRETATION OF CRP LEVELS
0.3 mg/L	Normal
>0.3 to 1 mg/L	Mild
>1 to 10 mg/L	Moderate
>10 mg/L	Marked
>50 mg/L	Severe

This numbering was graded for statistical purpose and the data was collected every 15 days. Every patient data has been documented in a special case sheet prepared extensively for Āmavāta patients. After the

collection of data, it was subjected to statistical analysis by calculating the Mean, Standard Deviation, Standard Error and t-value. Then, the results were assessed on the above values.

STATISTICAL METHODS USED: The obtained information was analyzed statistically. Student's paired 't' test was applied to assess the statistical significance of results of different therapies before and after treatment. The level of statistical significance
was judged as per the 'p' values as given below:

- Insignificant: P > 0.05
- Significant: P < 0.01
- Extremely significant: P < 0.001, P < 0.0001

RESULTS:

It was observed that Group A exhibited slightly better improvement in most parameters compared to Group B. Relief in Vedanā was 75.2% in Group A and 74.06% in Group B. In Śotha, Group A showed 50.2% improvement compared to 49% in Group B. Stiffness was reduced by 50.6% in Group A, whereas Group B showed 44.4% relief. Tenderness improved by 59.4% in Group A and 51.7% in Group B. Similarly, improvement in range of motion was higher in Group A (45.11%) as compared to Group B (42.1%). Overall, Group A demonstrated comparatively better results across all subjective parameters.

DISCUSSION BASED ON RESULTS:

The assessment of Subjective, Objective and Associated Parameters were made by adopting the standard methods of Grading/Scoring methods. The Results of above said parameters were statistically assessed by using Paired 't' test.

Subjective parameters:

1. **Vedanā:** After treatment, Vedanā decreased significantly in both groups: Group A showed 75.2% relief and Group B 74.06%, both with extremely statistically significant results (P < 0.0001).
2. **Śotha:** After treatment, Śotha reduced in both groups: Group A showed 50.2% relief and Group B 49%, both with extremely statistically significant results (P < 0.0001)
3. **Stiffness:** After treatment, stiffness reduced in both groups: Group A showed 50.6% relief and Group B 44.4%, both with extremely statistically significant results (P < 0.0001).
4. **Tenderness:** After treatment, tenderness reduced in both groups: Group A showed 59.4% relief and Group B 51.7%, both with extremely statistically significant results (P < 0.0001).
5. **Range of motion:** After treatment, range of motion improved in both groups: Group A showed 45.11% relief and Group B 42.1%, both with extremely statistically significant results (P < 0.0001).

Objective Parameters

1. **ESR:** After treatment, ESR reduced in both groups: Group A showed 62.3% relief and Group B 60.7%, both with extremely statistically significant results (P < 0.0001)
2. **CRP:** After treatment, CRP reduced in both groups: Group A showed 51.4% relief and Group B 51.5%, both with extremely statistically significant results (P < 0.0001).
3. **RF Test:** After treatment, RF test reduced in both groups: Group A showed 69.28% relief and Group B 55.88%, both with extremely statistically significant results (P < 0.0001).

ASSOCIATED SYMPTOMS

- **Apāka:** After treatment, Apāka reduced in both groups: Group A showed 74.55% relief and Group B 69.81%, both with extremely statistically significant results (P < 0.0001). As a main symptom of Āma, Apāka is relieved by Tikta rasa through Āmapācana, improving Agni.
- **Gaurava:** After treatment, Gaurava reduced in both groups: Group A showed 66.54% relief and Group B 60.42%, both with extremely statistically significant results (P < 0.0001). As Āma causes Gaurava, Kaṭu, Tikta rasa and Laghu Rūkṣa guṇa aid Āmapācana and relieve the symptom.

DISCUSSION ON OVERALL EFFECT OF DRUG ON EACH GROUP

In Group A, 16.7% of subjects had Complete improvement, 56.7% of subjects had Marked improvement, 26.7% were Moderately improved and unchanged were nil.

In Group B, 13.3% of subjects had Complete improvement, 50% of subjects had Marked improvement, 36.7% were Moderately improved and unchanged were nil.

The overall outcome is calculated in terms of percentage of benefits in relieving symptoms (or) improvement of Subjective and Objective parameters.

The Group - B showing almost nearing results with **Group - A**. Above data clearly shows that **Group - A** gave Statistically Extremely Significant relief in all the symptoms ($p<0.0001$).

It was observed **in Group A** that there was complete relief in 05 cases i.e., 16.7%, Marked improvement in 17 cases i.e., 56.7%, Moderately improved in 08 case i.e., 26.7% and Unchanged were Nil.

Whereas in **Group - B** Complete relief was seen in 04 cases i.e., 13.3%, Marked improvement in 15 cases i.e., 50%, Moderately improved in 11 cases i.e., 36.7% and Unchanged were Nil.

In Group A, 56.7% of subjects had marked improvement, 26.7% were moderately improved, 16.7% were completely improved and unchanged were nil. In Group B, 50% of subjects had marked improvement, 26.7% were moderately improved, 13.3% were completely improved and unchanged were nil.

CONCLUSION:

The overall results of the present study indicate that both Group A and Group B showed significant improvement in the management of Āmavāta; however, Group A (Bhāvita Śigru Mūla Cūrṇa) demonstrated comparatively better outcomes. Statistically extremely significant relief ($p<0.0001$) was observed in Group A across all parameters. In Group A, complete relief was seen in 16.7% of patients, marked improvement in 56.7%, and moderate improvement in 26.7%, whereas in Group B, complete relief was observed in fewer patients with comparatively lower marked improvement and higher moderate improvement.

Bhāvita Śigru Mūla Cūrṇa showed superior efficacy in reducing Vedanā, Śotha, Āpāka, Gaurava, Stiffness, Tenderness and improving Range of Motion. This effect may be attributed to its *Āmapācana*, *Dīpana*, and *Pācana* karma, along with properties such as *Kaṭu-Tikta Rasa*, *Laghu* and *Rūkṣa Guṇa*, *Uṣṇa Vīrya*, and *Kaṭu Vipāka*, which help in pacifying Āma, enhancing Agni, and alleviating Vāta-Kapha Doṣa. The repeated Bhāvana process (five Bhāvanās with Mūla Kvātha) likely enhances the potency and bioavailability of the drug.

The *Uṣṇa Vīrya* contributes to Agnivardhana, thereby preventing Vātaprakopa, while *Kaṭu-Tikta Rasa* and *Rūkṣa Guṇa* aid in the absorption of excess fluid, reducing Śotha and improving joint mobility. Additionally, the *Rasāyana* effect of the drug may help in controlling disease progression.

Thus, it can be concluded that Bhāvita Śigru Mūla Cūrṇa is more effective than Siṃhanāda Guggulu in managing the signs and symptoms of Āmavāta and may serve as a safe and effective alternative. The drug primarily acts through its *Guṇa–Karma–Prabhāva*, validating its therapeutic potential.

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