J.R.A.S. Vol. XXV, No. 3-4, (2004) pp. 22-32

A CLINICAL STUDY ON THE EFFECT OF *SUNTHI, GUGGULU* AND *GODANTI* ON *AMAVATA* (RHEUMATOID ARTHRITIS)

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(Received on 17.3.2005)

A total of 20 established cases of Amavata were selected for the study. Sunthi, Guggulu and Godanti combined in ratio of 1:2:1 was administered to the patients in a dose of 2gms three times daily with warm water. The improvement was assessed in terms of subjective and objective parameters and it was observed that there was significant improvement in walking time after 15 days of treatment but it was highly significant after 30 & 45 days of treatment. Regarding Grip strength there was no statistically significant effect obtained after 15 days of treatment but result was found significant after 30 days of treatment. The highly significant result was obtained only in right hand after 45 days of treatment. Regarding the pressing power the highly significant result was obtained after 45 days of treatment. In this parameter both hands got same type of improvement. No side effects were found during this treatment.

Introduction

The disease *'Amavata'* a poly-articular joint disease described in Ayurved has high resemblance with Rheumatoid Arthritis of modern medicine. This disease entity has been lately recognized first by Madhav Kar in 9th century. The disease draws attention for the consideration of research firstly due to the gravity of the problem and secondly due to lack of suitable known modern drugs for the treatment. This forms a major problem for the practicing physicians today.

As far as its etiopathogenesis is concerned suggestions have been advanced

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that gastro-intestinal changes are primary and fundamental. The first event in the series of pathogenesis of *Amavata* is the formation of *Ama* due to hypo functioning of digestive mechanism that is impaired digestion power. Specific factor known as *'Agni'* is described to be responsible for the specific changes occurring in the entire course of digestion and metabolism. Impairment of *Agni* may lead to the formation of *'Ama'* or component of incompletely processed food, which is absorbed in the body and are taken up by *Slaismika* tissues where they are further modified to a great extent and are again thrown into the circulation.

Now it affects the target organs and produces articular symptoms along with the systemic, gastro-intestinal, cardiac and renal manifestations.

Regarding the treatment of *Amavata*, it is more or less etiologically oriented. Since the gastro-intestinal sluggishness leads to indigestion and malabsorption that are attributed to the cause of this disease, the correction of gastro-intestinal function is more important to reduce the further damage to the tissues. Since Pain and inflammation both are predominant among other symptoms, a combination of *Ama pacaka* along with the anti-inflammatory and analgesic drugs is required to relieve the symptoms. Earlier, Prem kishore *et al.* carried out clinical trial on the combination of *Sunthi* and *Guggulu* and the result was found promising. But to potentiate further analgesic action of this combination, *Godanti* was added to the earlier combination. So a combination of *Sunthi, Guggulu and Godanti* was undertaken for trial, which is likely to achieve all the above functions.

Materials and Methods

1. Selection of Patients

A total of 20 established cases of *Amavata* were selected for this study from the OPD of the Maharao Shekhaji Central Research Institute (Ayurveda), Jaipur.

2. Criteria for Selection

The patients were selected on the basis of two sets of criteria.

(I) Age & Chronicity

(a) Age between 12 to 60 years.

(b) Chronicity between 6 weeks to 5 yrs.

(II) Diagnostic Criteria: The patients were diagnosed by following the symptoms described in Ayurvedic texts as well as the criteria laid down by American College of Rheumatology for Rheumatoid Arthritis

a) Morning stiffness -Stiffness in and around the joints for one hour or more in the morning.

b) Arthritis of 3 or more joints.

c) Arthritis of hand joints - At least one form proximal interphalangeal joints.

metacarpo-phalangeal joints or wrist joints.

d) Symmetrical Arthritis - Bilateral involvement of PIPS, MCP, or MTP is acceptable without absolute symmetry.

e) Rheumatoid nodules - Subcutaneous nodules over bony prominences, extensor surface or juxta articular regions observed by a physician.

f) Serum Rheumatoid factor - Demonstration of abnormal amounts of serum RF by any method.

g) Radiographic changes: Typical changes of R.A. on hand & wrist radiographs which must include erosions or unequivocal body decalcification localized in or most marked adjacent to the involved joints.

Note: Criteria 1 to 4 must be present for at least 6 weeks. A physician must observe criteria 2 to 5. The patient should satisfy at least 5 of these criteria.

3. Criteria of Exclusion

1. Age below 12 yrs & more than 60 yrs.
2. Chronicity less than 6 weeks & more than 5 yrs.
3. Gout.
4. Osteoarthritis.
5. Psoriatic arthritis.
6. Rheumatic fever.
7. Arthritis with Diabetes.

4. Laboratory Investigations

All the patients were subjected for the following investigations.

1. Routine blood examination-DC,TLC Hb%, ESR.
2. Blood Sugar.
3. S. Uric acid.
4. Serum R.A factor.
5. C.R.P.
6. Urine (Routine & Microscopic).
7. X-Ray of involved joints.

The routine examination of blood, serum RA factor and CRP were done in every follow up.

5. Selection of Drugs

Sunthi, Guggulu and *Godanti* were selected for this study as a part of CCRAS project. These drugs were combined in the ratio of 1:2:1 and were prepared as 500-mg. tablets. This drug is prepared and supplied by the pharmacy of Central Research Institute (Ayurveda), Patiala, Punjab.

6. Dose and Administration

This drug was given in the dose of 2 gms. (4 tablets) three times daily with warm water.

7. Follow up

All the cases were recorded in a proforma designed for this study. The cases were followed up at every 15 days up to 45 days to assess the improvement in subjective and objective parameters.

8. Criteria for Assessment of Result

The assessment was done in respect of subjective and objective improvement in every follow - up. The subjective improvement was observed in 10 cardinal symptoms for which a scoring system was followed. The objective improvement was observed in respect of walking time, grip strength and pressing power.

I. Subjective Assessment

a) Morning stiffness

i. Severe- Patient can not rise from bed for few hours (6)

ii. Moderate - Patient can not rise from bed for few minutes (4)

iii. Mild - Patient can rise from bed but feels difficulty to rise due to stiffness (2)

b) Pain at rest/motion

i. Severe - Excruciating pain with painful cries (9)

ii. Moderate - Frequently complaints of pain without painful look (6)

iii. Mild - Complained by patient after asking (3)

c) Swelling

i. Severe - Considerably above the land marks may be with positive fluctuation (15)

ii. Moderate - Just covering the bony prominences (10)

iii. Mild - Just covering the bony land marks of joints (5)

d) Tenderness (To be examined by digital pressure)

i. Grade - 4 - The patient will not allow to touch the joint (20)

ii. Grade - 3 - The patient winces and withdraws the affected part (15)

iii. Grade - 2 - The patient winces (10)

iv. Grade - 1 - The patient says the joint is tender

e) Restriction of joint movements (Movable joint)

i. Fully restricted (6)

ii. Partially restricted (3)

iii. No restriction (0)

f) Fever

i. Present (2)

ii. Absent (0)

g) Constipation

i. Regularly (3)

ii. Frequently (2)

iii. Occasionally (1)

iv. No constipation (0)

h) Loss of Appetite

i. Appetite lost (2)

ii. Poor appetite (1)

iii. Normal appetite (0)

i) Anorexia

i. No inclination for diet (2)

ii. Less inclination for diet (1)

iii. No anorexia (0)

II Objective Assessment

In this parameter the walking time, grip strength and pressing power of both hands were noted in every follow-up assess the improvement.

i) Walking time: The patient was asked to cover 20 meters of distance by walking according to his capacity and the time taken to cover the distance was noted in seconds.

ii) Grip strength: This is done with the help of a sphygmomanometer. By adjusting the mercury at 10 mm Hg level, the patient was asked to grip the sphygmomanometer cuff without support to his arms. A mean of 3 attempts is recorded separately of both the hands to ascertain muscle strength, articular or periarticular stiffness, joint pain etc.

iii) Pressing power: This is tested with similar process as above but by pressing the sphygmomanometer cuff with flat palms instead of gripping.

Observations and Result

Table - I

Incidence of Age and Sex

Age group (In yrs.)	Sex		Total
	Male	Female	
12-20	0	2	2
21-30	0	5	5
31-40	1	4	5
41-50	0	3	3
51-60	2	3	5
Total	**3**	**17**	**20**

In the present study the above table shows that the disease affects the individual in every range of age. Though the sex wise distribution reveals more number of females in comparison to males but the final conclusion regarding predominance of the disease in sexes could not be drawn from this limited number of samples.

Table - 2

Incidence of Educational Status

Educational Status	No. of patients
Iliterate	10
Read and write	01
Primary school	02
Middle school	02
High school	02
College	03
Total	**20**

In this study all the cases were somewhat educated except 10 cases that were completely illiterate and the findings are attributed to this study only.

Table - 3

Incidence of Occupation

Occupation	No. of patient
House work	14
Desk work	04
Field work with physical labour	02
Total	**20**

Since there are more no. of females in this study, the highest patients were having the housework occupation.

Table - 4

Incidence of Income Per Capita Per Month

Income per capita Per month (in Rs.)	No. of patients
Below 500	05
501-2000	12
2001-4000	03
4001-6000	00
6001 & above	00
Total	**20**

In this study the maximum cases belong to lower income group but this does not mean that this disease affects the lower income group only. It may affect all income groups.

Table - 5

Incidence of Duration of Illness

Duration of illness (In yrs.)	No. of patients
Upto 2	06
2-3	03
3-4	02
4-5	09
Total	**20**

In the present study maximum cases were having chronicity between 4 to 5 years and 6 cases having the duration within 2 yrs.

Table - 6

Incidence of Treatment Prior to the Study

Type of Treatment	No. of patients
Modern Medicine	09
Modern Medicine + Ayurveda/Unani	06
Modern Medicine + Homeopathy	01
Ayurvedic	01
Mixed	03
Total	**20**

This table shows that the maximum cases were undergone Modern Medicine treatment prior to this study and only 3 cases have undergone mixed treatment before this study.

Table - 7

Incidence of RA Factor

R.A Factor	No. of patients
Positive	17
Negative	03
Total	**20**

All the cases were subjected to RA factor test. Except 3 cases all the cases were found positive.

Table - 8

Incidence of Symptoms

Symptoms	No. of patients
Morning stiffness	20
Pain at Rest	20
Pain on motion	20
Swelling	19
Tenderness	20
Restriction of Joint movements	12
Fever	11
Loss of appetite	13
Constipation	15
Anorexia	11

The most 5 cardinal symptoms like morning stiffness, pain at rest, pain on motion, swelling and tenderness were present in all cases.

Result
Table - 9

Symptoms		BT	AT_1	AT_2	AT_3
Morning stiffness	Mean	4.9	3.35	2.35	1.85
	t		7.38	9.07	10.16
			(P<0.001)	(P<0.001)	(P<0.001)
Pain at rest	mean	6.1	3.88	2.70	2.06
	t		8.22	8.29	9.60
			(P<0.001)	(P<0.001)	(P<0.001)
Pain on motion	Mean	6.18	4.14	2.83	2.43
	t		7.04	9.32	8.94
			(P<0.001)	(P<0.001)	(P<0.001)
Swelling	Mean	7.08	4.68	3.64	3.01
	t			4.98	5.46 6.66
			(P<0.001)	(P<0.001)	(P<0.001)
Tenderness	Mean	7.57	4.62	2.76	1.35
	t			4.09	5.53 7.32
			(P<0.001)	(P<0.001)	(P<0.001)
Restriction of Joint movement	Mean	2.03	1.26	0.81	0.83
	t		2.85	3.19	3.06
			(P<0.001)	(P<0.001)	(P<0.001)
Fever	Mean	1.00	0.35	0.16	0.05
	t		3.42	4.25	4.52
			(P<0.001)	(P<0.001)	(P<0.001)
Constipation	Mean	1.40	0.70	0.35	0.25
	t		5.00	5.25	6.05
			(P<0.001)	(P<0.001)	(P<0.001)
Loss of Appetite	Mean	0.95	0.5	0.3	0.15
	t		2.81	3.42	4.00
			(P<0.001)	(P<0.001)	(P<0.001)
Anorexia	Mean	0.8	0.45	0.15	0.05
	t		2.18	3.42	3.94
			(P<0.05)	(P<0.01)	(P<0.001)

After the analysis of the above data it was found that the improvement was highly significant in all symptoms except restriction of joint movement, loss of appetite and anorexia. But after 30 days of treatment all the improvements were highly significant which is also constant after 45 days of treatment.

Table - 10
Improvement In Objective Parameters

Parameters		BT	AT_1	AT_2	AT_3
Walking time	mean	33.25	24.8	20.8	19.15
	t		2.12	2.93	3.12
			(P<0.025)	(P<0.01)	(P<0.01)
Grip strength (Right hand)	Mean	34.8	38.95	43.2	48.45
	t		1.70	2.47	3.37
			(P>0.10)	(P<0.05)	(P<0.01)
Grip strength (Left hand)	Mean	30.7	35.65	41.25	45.05
	t		1.55	1.97	2.42
			(P>0.10)	(P>0.05)	(P<0.05)
Pressing power (Right hand)	Mean	33.87	44.3	49.70	49.65
	t		2.16	2.78	3.49
			(P<0.05)	(P<0.02)	(P<0.01)

The above table shows that there are significant improvement in walking time after 15 days of treatment but it was highly significant after 30 & 45 days of treatment. Regarding Grip strength there was no statistically significant result obtained after 15 days of treatment but result was found significant after 30 days of treatment. The highly significant result was obtained only in right hand after 45 days of treatment. The possible explanation may be that since the right hand is used in daily work it gets more mobilization in comparison to left hand, so the improvement was found comparatively more. Regarding the pressing power the highly significant result obtained after 45 days of treatment. In this parameter both hand got same type of improvement.

If we compare the improvement in subjective and objective parameters, the highly significant result was obtained in subjective parameters after 15 days of treatment but the same is not true in objective parameters. The possible but true explanation to such difference may be that the subjective scores depend upon what the patient says during the scoring. There may be some bias in statement of patients while scoring. But the effect of drugs may be attributed to the objective parameters in this study. No side effects were found during this treatment.

Conclusion

On the basis of above observations one may conclude that this drug has significant effect on *Amavata* without any side effects. Since this disease has frequent exacerbation and self-remission, to find out whether this drug has a real relieving effect, a control study is needed to draw the final conclusion.

Acknowledgement

The authors are thankful to the Director, Central Council for Research in Ayurveda and Siddha, New Delhi for the facility, co-operation and encouragement rendered by him. We are also very grateful to the patients who have given consent and cooperated during this study.

Abbreviations Used

BT = before treatment

AT_1 = after 15 days of treatment

AT_2 = after 30 days of treatment

AT_3 = after 45 days of treatment

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हिन्दी सारांश

आमवात (रयूमेटॉयड अर्थराइटिस) पर शुण्ठी, गुग्गुलु और गोदन्ती का चिकित्सात्मक अध्ययन

अनुकूल चंद्र कर, के.वी.काले, आर.डी. प्रसाद, रतन मिश्रा एवं के.सी. औदिच्य

अध्ययन के लिए कुल २० रोगियों को चुना गया। शुण्ठी, गुग्गुलु और गोदन्ती १:२:१ के अनुपात में मिश्रण की २ ग्राम की मात्रा को गरम जल के साथ दिन में ३ बार रोगियों को दिया गया। व्यक्ति परक एवं वस्तु परक मानदण्डों के आधार पर सुधार का निर्धारण किया गया तथा १५ दिन के उपचार के बाद चलने के समय में महत्वपूर्ण सुधार पाया गया परन्तु ३० और ४५ दिन के उपचार के बाद बहुत अधिक सुधार पाया गया।

१५ दिन के उपचार के बाद पकड़ने की क्षमता में सांख्यिकी तौर पर कोई महत्वपूर्ण अन्तर प्राप्त नहीं हुए परन्तु ३० दिन की चिकित्सा के बाद महत्वपूर्ण परिणाम पाये गये। ४५ दिन के चिकित्सा के बाद दायें हाथ में महत्वपूर्ण सुधार पाया गया। ४५ दिन की चिकित्सा के बाद दबाने की शक्ति में महत्वपूर्ण सुधार पाया गया एवं इस प्रकार के मानदण्डों के अनुसार दोनों हाथों में समान प्रकार का सुधार पाया गया। चिकित्सा के दौरान कोई दुष्प्रभाव नहीं पाया गया।