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## Effect of *Dashamooladi Basti* in the Short Term Management of *Amavata* w.s.r. to Rheumatoid Arthritis

Anjali V. Makodiya,<sup>1</sup>Akanksha Sharma,<sup>2</sup> Ram B. Shukla,<sup>3</sup> Hetal Ramani<sup>4</sup>

- 1- Consultant, Panchkarma Department, Merchant Ayurved hospital, Basna, Mehsana, Gujarat.
- 2- M.D. Panchakarma, Ayurvedic Medical Officer at department of AYUSH, Govt. of J&K.
- 3- Assistant Professor, Govt. Akhandanand Ayurved college, Ahmedabad, Gujarat.
- 4- Assistant Professor, B. G. Garaiya Ayurved college & hospital, Rajkot, Gujarat.

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#### Corresponding author-

Anjali V. Makodiya, Consultant  
Panchkarma Department, Merchant  
Ayurved hospital, Basna, Mehsana,  
Gujarat.

Email : [anjalimakodiya91@gmail.com](mailto:anjalimakodiya91@gmail.com)

### ABSTRACT:

**Context:** Bad dietary habits and sedentary lifestyles affect *Agni*. Weakness of *Agni* leads to formation of *Ama*. *Ama* is indigested *Aadya Rasa Dhatu*. This *Ama* produces various *Amaprodoshaja Vikara*. Among these, *Amavata* is most challenging for physician. In *Amavata* *Ama* gets lodged in *Kapha Sthan* with the help of vitiated *Vyana Vayu*. Thus *Prakupita Ama* and *Vata* both lodged in *Kostha, Trika* and *Sandhi* produces *Shotha, Shoola* and *Stabdhatu*. Due to their similar mode of presentation, a disease, rheumatoid arthritis can be broadly grouped under the heading *Amavata*.

**Aim:** To evaluate the role of *Dashmooladi Basti* in short term management of *Amavata* w.s.r. to Rheumatoid arthritis.

**Material and Method:** To emphasize the effect of *Basti Karma* on *Amavata*, 30 patients having classical sign and Symptoms of *Amavata* (R.A.) were selected for present study. *Dashamooladi Basti* was given indose of 240-320 ml (320 ml for 1<sup>st</sup> day and 240 ml for 2<sup>nd</sup> & 3<sup>rd</sup> day) at *Natibubhukshita Kala* for 3 days to patients. The subjects for the study were patients who were between the age group of 16 and 60 years.

**Results:** Wilcoxon sign rank test was used to access the effect of therapy on subjective criteria of thesis. Statistically highly significant relief was achieved in all the cardinal & some associated features. Functional parameters were observed to be highly significant, highly significant changes were found on ESR and CRP but changes in RA factor were found insignificant. 40.0 % of the patients showed mild improvement and unimproved in rest as an overall effect.

**Conclusion:** *Dashamooladi Basti* is effective in the management of *Amavata*. Most of patients had recurrence immediately after omitted treatment, so it can be said that, in *Amavata* long term treatment is required.

**Keywords:** *Amavata, Rheumatoid Arthritis, Dashamooladi Basti Karma*

### INTRODUCTION

Today is the era of modernization and fast life; everybody is busy and living stressful life. Bad dietary habits and

sedentary lifestyles affect *Agni*. Weakness of *Agni* leads to formation of *Ama*. *Ama* is indigested *Aadya Rasa Dhatu*. This *Ama* produces various *Amaprodoshaja Vikara*. Among these, *Amavata* is most challenging for physician.



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In *Amavata* *Ama* gets lodged in *Kapha Sthanas* with the help of vitiated *Vyana Vayu*. Thus *Prakupita Ama* and *Vata* both lodged in *Kostha, Trika* and *Sandhi* produces *Shotha*, *Shoola* and *Stabdhatata*.

Due to their similar mode of presentation, a disease, rheumatoid arthritis can be broadly grouped under the heading *Amavata*. Rheumatoid arthritis is characterized by inflammation of synovial membrane of the joints. It is a systemic disease. The R.A. exists all over the world & affects women more than men of all races. In India, the prevalence of R.A. is 0.75%.<sup>1</sup> The aetiology of R.A. is still unknown but most theories today either advocate autoimmune mechanism or an infectious agent which is indirectly caused by erroneous life style. Onset is in the fourth and fifth decades of life. Rheumatoid arthritis is painful condition in which pain may persist for years. These lead to difficulty in routine work and make the person crippled and unfit for an independent life. International Association for the study of pains has defined pain as “Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.”<sup>2</sup> It is a major symptom and can interfere with a person’s quality of life, one’s job, general functioning, relationships and ultimately independence. *Amavata* is one such disease where in, our *Aacharya Madhav* categorized the pain as *Vrischika Damshavata Vedana*.<sup>3</sup>

So relieving pain is the first step of treatment along with principle of treatment according to Ayurveda. There are many medications for rheumatoid arthritis, but painful flare-ups are still a fact of life. Modern management includes analgesics, NSAIDS, immunomodulator drugs and surgical treatment. These drugs have adverse effects on GI tract, Renal and Cardiovascular system. They also have negative impact on immune system and gives only temporary relief. Day to day patients get habitual to NSAIDS. So here Ayurveda especially *Panchkarma* plays good role as a safe and effective management. Among them *Basti Karma* is considered as *Ardha Chikitsa* in Ayurvedic texts<sup>4</sup> and has been specified in the management of *Vatvyadhis*. Control of *Vata* by *BastiKarma* cures majority of disease. In the present research work *Dashamooladi Basti* mentioned by *Acharya Bhavamishra*<sup>5</sup> is selected for the short term management of *Amavata*. It has effect on *VataDosh* as well as *Ama*.

In this research work 30 patients were registered and *Dashamooladi Basti* was given for 3 days as short term management. In this work aim is to evaluate the role of

*Dashamooladi Basti* in short term management of *Amavata* w.s.r. to Rheumatoid arthritis.

## MATERIALS AND METHODS:

### Patients:

For the clinical study, Patients fulfilling the criteria & attending OPD & IPD of Govt. Akhandanand Ayurveda College & Hospital, Ahmedabad and Govt. Maniben Ayurved Hospital, Ahmedabad; were integrated into the study irrespective of caste, religion etc.

### Research Design:

1. It was a single arm and randomized clinical trial.
2. Special Research proforma was prepared.

### Study design: Interventional

### Inclusion Criteria:

1. Patient having classical signs & symptoms of *Amavata* were selected.
2. Patients were selected between 16 to 60 years of age.
3. Patients fulfilling criteria of ARA (**American Rheumatism Association**) were selected.

### Exclusion Criteria:

1. The patients who are suffering from systemic disorders like Cardiac disease, DM, HTN, Cancer, Tuberculosis, Respiratory Diseases and other diseases which may lead to fatal condition for the patient at any time.
2. Patients not having pain were excluded.
3. Patients of Chronic condition (more than 10 years) were excluded.
4. Patient having severe deformity were excluded.
5. Patient suffering with *Asadhya Lakshana* as “*Sarva DehcharaShotha*” given in *Ayurvedic* classics.

### Investigations:

Relevant laboratory investigations were undertaken to assess the present condition of the patient.

- 1- Hematological investigations – T.L.C., D.L.C., E.S.R. and R.B.C. count
- 2- Urine: Routine and microscopic examinations
- 3-Biochemical tests: R.A. test
- 4-Serum C.R.P., Serum Uric acid (If possible)
- 5-Radiological investigations (If necessary)
- 6-E.C.G. (If necessary)

Essential investigations were done before and after

treatment and after follow up if possible.

**Method Of Research:**

As this was a clinical research, Institutional Ethics Committee (IEC) approval was taken prior to initiation of research vide its letter No.46, DATED 25/06/2016. Total 30 patients were registered in this study. This trial is also registered at Clinical Trial Registry of India, ICMR, New Delhi, vide **CTRI/2017/02/007910**[Registered on: 17/02/2017].

**Informed Consent:**

Written consent of the patient was taken before starting the intervention.

**Drugs And Grouping:**

**No. of patients:30 Table 1:**

**Basti contents:**

*Niruha Basti* comprises of following *Dravyas*<sup>6</sup>. **Table 2:**

**Criteria For Assessment:**

**Subjective:** Improvement in classical symptoms of *Amavata*.

**Objective:** Changes in investigations

**Scoring Pattern**<sup>7</sup>

**Cardinal symptoms Table 3**

**Functional assessment:**

Functional assessment was carried out before and after treatment for improvement in function of affected joints. Functional tests include hand grip in mm of Hg, foot pressure in kg and walking time.

- **Walking time:** patients were asked to walk a distance of 100 ft. And time taken has been recorded before and after treatment by using stop watch.
- **Grip strength:** To find out the functional capacity of the affected upper limb, patients were asked to squeeze the inflated cuff of the sphygmomanometer and the grip strength has been recorded in mm of Hg.
- **Foot pressure:** To have an objective view of the functional capacity of the legs, foot pressure was recorded by using a weighing machine.

**VAS Scale Assessment:**<sup>8,9</sup> (Table 4)

No pain	0-4 mm
Mild pain	5-44 mm
Moderate pain	45-74 mm

Severe pain

75-100 mm

The obtained results were measured according to the grades given below,

1. Complete remission: 100% relief in signs and symptoms
2. Markedly improved: 99%-75%
3. Moderately improved: 74%-50%
4. Mild improved: 49%-25%
5. Unchanged: < 25%

The information gathered on the basis of the above-mentioned observations was subjected to statistical analysis in terms of mean difference (df), Percentage in relief and W value. The Wilcoxon sign rank test was carried out at P < 0.05, P < 0.01, and P < 0.001 levels. The obtained results were interpreted as:

Insignificant	P > 0.05
Significant	P < 0.05 or P < 0.01
Highly significant	P < 0.001

**OBSERVATION AND RESULT:**

**Table 5 :-Effect on cardinal symptom:** Improvement in *Sandhi Shoola* was observed in 34.44% of the patients, improvement in *Sandhigraha*, relief observed in 48.97% of the patients. Improvement in *Sandhishoth* was observed in 41.86% and in the symptom *Sparshasahtha* relief was noted in 42.59% of patients. Here the result was highly significant.(Table 2)

**Table 6:- Effect of therapy on associated symptom:**

Improvement in feeling of feverishness (*Jwara*), *Angamarda*, *Alasya* and feeling of *Gaurava* observed 58.33%, 42.5%, 34.78 % and 34.04% respectively which were statistically highly significant. Analyzed data shows that the change occurred in *Apaka*, *Aruchi* and *Trushna* with the treatment was statistically insignificant. (Table 3)

**Table 7 ;-Effect of therapy on Rasavaha, Annavaha and Asthivahasrotasa:**

Depicted data shows that Relief in *Rasavaha Srotodushti Lakshana* was 26.66% and in *Asthivaha Srotodushti* observed improvement was 28.86% which was highly significant. Improvement in *Annavaha Srotodushti Lakshana* was 10.34% which insignificant.

**Table 8:- Effect of therapy on investigation:**

After treatment statistically highly significant decrease in E.S.R. where improvement observed was 9.40% which was significant not due to chance. Decrease in CRP where

improvement observed was 34.63% which was also significant not due to chance. After treatment decrease in RA factor was -5.52% which was insignificant, it may be due to chance.

**Table 9 :-Effect of therapy on functional test:**

Improvement in foot pressure (Right) after treatment was 13.88% which was highly significant. On other side (left) 11.79% improvement noted which was highly significant. For grip strength on right side 20.40% improvement was noted which was highly significant. On Left side 18.67% improvement was noted which was highly significant. Improvement in walking time was 9.77% which was highly significant change after treatment. The depicted data shows the changes in DAS 28 Scale was 9.15% which was highly significant. Improvement in Disability Index was 27.09% which was highly significant. The depicted data shows improvement in VAS scale was 31.84% which was highly significant.

**Overall effect as Basti :**

By acting on *Vata Dosha* -*Ushna Veerya*(76%), *Laghu Guna*(76%),*Tikta Rasa*(80%), *Katu Rasa*(52%) *Deepana Karma* (56%) all will help in *Agnisthapna*. *Vata rapkopa* occurs simultaneously- *Dashamoola*, *Tila Taila*,*Ushna Veerya drugs*(76%) all will counter act *Vata Dosha*.

By acting on *Agnimandya* & *Ama*- *Kanji*, *Saindhava*, *Gomutra*, *Musta*,*Ushna Veerya*(72%), *TiktaRasa*(68%), *KatuRasa*(52%) *Pachana Karma*(32%) *Laghu Guna*(76%),*Ruksha Guna*(54%) all will help in *Amapachana*.

3) *Khavaigunyata* is produced in *Shleshma Sthanas*- *Kanji*, *Gomutra*, *Madanaphala*, *Ushna Veerya*(76%) all will help in correcting *Srotoshuddhi*.

**Overall effect of therapy: Table 10-** The depicted data shows that the improvement of overall effect of therapy, 60% of the patients showed unimproved, while 40% patients showed mild improvement after treatment.

**DISCUSSION**

*Ama* is produced in *Annavaha Srotasa* due to *Agnimandya* & later on involves the *Madhyama Roga Marga* as *Sandhis* are the *Sthana Samshraya* of *Vyadhi*. *Rasavaha Srotasa* & *Rasa Dhatu* are mainly affected initially. *Ashudaurbalya* told in the *Samprapti* indicates involvement of *Bala*. Hence Autoimmunity told in Rheumatoid Arthritis could be correlated with *Balabhransha* which is the symptom of *Sama Dosha*. Here *Kapha Dosha* is involved in pathology

and *Acharyas* have described it as *Bala* in its *Prakrut Avastha*.*Bhransha* means not doing its work properly. So, when *Kapha* is in *PrakrutAvastha* then it works as *Bala* which can interpret as Immunity. But when there is *Bala Bhransha* then immune system does not work properly instead. Here *Dushya* is *Rasa Dhatu*, *Asthi Dhatu* which has similarity with involved *Dosha* (*Kapha&Vata*) in disease.

*Amavata* is produced by *Yugpat Prakopa* of *Ama* & *Vata-Basti* is best *Chikitsa* of *Vata* & *Kshara* is best *Amapachaka* ( *Kshara Bastih Prashasyate*).So, *Basti* is best *Chikitsa* for *Vata* &*Kshara* is best *Pachaka*. *Kshara Basti* is best treatment for *Amavata* as described by *Acharya Chakrapani*. Main ingredients of *Dashamooladi Basti* are *Dashamoola* as *Kwath* and *Vacha*, *Madanfala*, *Bala*, *Shatahva*, *Kushtha*, *Pippalee*, *Ativisha*, *Musta*, *Rasna*, *Katfala*, *Pushkara* as *Kalka Dravya*, *Gomutra*, *Kanji* and *Saindhav* .*Dashamoolahave Vedanasthapana* &*Shothaghna* properties. *Dashamoola*, *Ativisha*, *Musta*, *Rasna* and *Pippalee* have *Aampachana* effect.

As *Basti Karma*- Ultimately it is the *Veerya* of *Basti* with which it performed its *Sarvadaihika Karma*, Expelled the vitiated *Dosha* out and cleared the pakwashay aa well as *Sukshma Srotas*. Through this action *Vata Shaman* occurs and *Amadosha* is expelled out and patient got relief in symptoms. As *Basti* works in whole body and this was type of *Shodhan Basti* it gives significant relief in *Shotha*, *Shool* and *Stiffness*. Here *Pakwashay Shuddhi* occurs and due to *Amapachan* drugs some of *Amashay Shuddhi* also occurs. So, *Dashamooladi basti* is effective in *Amavata*.

**CONCLUSION**

“*Amavata*” is a chronic and crippling disease with gradual onset. *Amavata* is the disease having *Vata* and *Kapha* predominance with origin from *Pakvashaya* and *Amashaya*. *Dashamooladi Basti* is proved to be effective in *Amavata* disease. Role of *Dashamoola* upon *VataDosha* &*Kapha Dosha* & role of *Kshara* over *Ama* is established. Ultimately it is the *Veerya* of *Basti* with which it performed its *Sarvadaihika Karma*, Expelled the vitiated *Dosha* out and cleared the *Sukshma Srotas*. So, above mentioned regimen has been found to be an effective in the short term management of uncomplicated cases of *Amavata*. Most of patients had recurrence immediately after omitted treatment, so it can be said that, in *Amavata* long term treatment is required.

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**Conflict of Interest – None**

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**Table 1:**

Sr. No.		Group A
1.	<i>Karma</i>	<i>Dashamooladi Basti</i>
2.	Dose	320ml (1 <sup>st</sup> day)-240ml (2 <sup>nd</sup> & 3 <sup>rd</sup> day)
3.	<i>Kala</i>	<i>Natibubhukshita Kala</i>
4.	Duration	3 days

**Table 2: Niruha Basti comprises of following Dravyas.**

Sr.No	Drugs	Latin name	Proportion	Total Part
	<b><i>Kwathya Dravya</i></b>			20 part
1.	<i>Bilva</i>	Aegle marmelos	Equal part	
2.	<i>Gambhari</i>	Gmelina arborea	Equal part	
3.	<i>Paatala</i>	Stereospermum sauveolens	Equal part	
4.	<i>Agnimantha</i>	Premna mucronata	Equal part	
5.	<i>Shyonaka</i>	Oroxylum indicum	Equal part	
6.	<i>Shaliparni</i>	Desmodium gangaticum	Equal part	
7.	<i>Prushniparni</i>	Uraria picta	Equal part	
8.	<i>Bruhati</i>	Solanum indicum	Equal part	
9.	<i>Kantakari</i>	Solanum xanthocarpum	Equal part	
10.	<i>Gokshura</i>	Tribulus terrestris	Equal part	
	<b><i>Kalka Dravya</i></b>			1 part
1.	<i>Vacha</i>	Acorus calamus	Equal part	
2.	<i>Madanafala</i>	Randia dumetorum	Equal part	
3.	<i>Vatya (Bala)</i>	Sida cordifolia	Equal part	
4.	<i>Shatahva</i>	Anethum sowa	Equal part	
5.	<i>Kushtha</i>	Saussurea lappa	Equal part	
6.	<i>Saindhava</i>	-	Equal part	
7.	<i>Pippalee</i>	Piper longum	Equal part	
8.	<i>Ativisha</i>	Aconitum heterophyllum	Equal part	
9.	<i>Musta</i>	Cyperus rotundus	Equal part	
10.	<i>Rasna</i>	Pluchea lanceolata	Equal part	
11.	<i>Katafala</i>	Myrica nagi	Equal part	
12.	<i>Pushkara</i>	Iris germanica	Equal part	
	<b><i>Other Dravya</i></b>		-	
1.	<i>Tila Taila</i>	-	-	8 part
2.	<i>Kanji</i>	-	-	16 part
3.	<i>Gomutra</i>	-	-	20 part

**Cardinal symptoms Table 3**

Sr. No.	Severity of pain	Grade
1	No pain	0
2	Mild pain	1
3	Moderate , but no difficulty in moving	2
4	Slight difficulty in moving due to pain	3
5	Much difficulty in moving body parts	4

Sr. No	Severity of swelling	Grade
1	No swelling	0
2	Slight swelling	1
3	Moderate swelling	2
4	Severe swelling	3

Sr. No	<i>Sandhigraha</i> (Stiffness in joints)	Grade
1	No stiffness	0
2	5 min to 2 hours	1
3	2 hours to 8 hours	2
4	More than 8 hours	3

Sr. No	<i>Sparshasahatva</i> (Tenderness)	Grade
1	No Tenderness	0
2	Subjective experience of Tenderness	1
3	Wincing of face on pressure	2
4	Wincing of face on pressure and withdrawal of the affected part on pressure	3
5	Resist to touch	4

**Associated symptoms**

Sr. No	<i>Angamarda</i> ( bodyache)	Grade
1	No Bodyache	0
2	Slight Bodyache	1
3	Moderate Bodyache	2
4	Severe Bodyache	3

Sr. No	<i>Aruchi</i>	Grade
1	No <i>Aruchi</i>	0
2	Willing towards some specific foods	1
3	Willing towards only most liking food and not to others foods	2
4	Totally unwilling for food	3

Sr. No	<i>Trishna</i>	Grade
1	No <i>Trishna</i>	0
2	Occasional <i>Trishna</i>	1
3	Very often <i>Trishna</i>	2
4	Always feeling of <i>Trishna</i>	3

Sr. No	<i>Aalasya</i>	Grade
1	No <i>Aalasya</i>	0
2	Doing work satisfactorily with late initiation	1
3	Doing work unsatisfactorily under mental pressure and takes time	2
4	Not starting any work on his own responsibility and doing little work very slowly	3
5	Does not take any initiation and does not want to work even after pressure	4

Sr. No	<i>Gaurava</i>	Grade
1	No heaviness in the body	0
2	Feels heaviness in the body but it does not hamper routine work	1
3	Feels heaviness in the body which hampers daily routine work	2
4	Feels heaviness in the body which hampers movement of the body	3
5	Does not take any initiation and does not want to work even after pressure	4

Sr. No	<i>Apaka</i>	Grade
1	No <i>Apaka</i>	0
2	Occasionally indigestion related to heavy food	1
3	<i>Apaka</i> occurs daily after each meals and takes 4 to 6 hours for <i>udgarashuddhi</i> ...etc symptoms	2
4	<i>Apaka</i> occurs daily after each meals does not have hunger	3
5	Never gets hungry always heaviness in abd. Followed by vomiting ...etc, symptoms	4

Sr. No	<i>Jwara</i>	Grade
1	No fever	0
2	Occasional fever subsides by itself	1
3	Occasional fever subsides by drug	2
4	Remittent fever	3
5	Continuous fever	4

**Table 4 DAS -28 Score (degree of disease activity)**

Current DAS 28 score	>1.2	>0.6 and <1.2	<0.6
< 3.2 Inactive	Good improvement	Moderate improvement	No improvement
>3.2<5.1 moderate	Moderate improvement	Moderate improvement	No improvement
>5.1 very active	Moderate improvement	Moderate improvement	No improvement

**Disability Index (the health assessment questionnaire)**

Without any difficulty	0
With some difficulty	1
With much difficulty	2
Unable to do	3



**Table 5 Effect on cardinal symptom:**

Sr. No.	Cardinal symptom	N	Mean score			%	W	P	S
			B.T.	A.T.	Diff.				
1	<i>Sandhishoola</i>	30	3	1.96	1.03	34.44	300	<0.001	HS
2	<i>Sandhigraha</i>	30	1.43	0.83	0.6	41.86	171	<0.001	HS
3	<i>Sandhishotha</i>	26	1.88	0.96	0.92	48.97	190	<0.001	HS
4	<i>Sparshasahyata</i>	29	1.86	1.06	0.79	42.59	253	<0.001	HS

**Table 6 Effect of therapy on associated symptom:**

Sr. No.	Associated symptoms	N	Mean score			%	W	P	S
			B.T.	A.T.	Diff.				
1	<i>Angamarda</i>	18	2.22	1.27	0.94	42.5	120	<0.001	HS
2	<i>Aalasya</i>	21	2.19	1.42	0.76	34.78	105	<0.001	HS
3	<i>Gaurava</i>	22	2.13	1.40	0.72	34.04	105	<0.001	HS
4	<i>Jwara</i>	12	1	0.41	0.58	58.33	28	0.0016	HS
5	<i>Apaka</i>	19	2.31	2.10	0.21	9.09	10	0.125	NS
6	<i>Aruchi</i>	17	1.94	1.70	0.23	12.12	10	0.125	NS
7	<i>Trushna</i>	8	1.25	1	0.25	20	3	0.5	NS

**Table 7 Effect of therapy on *Rasavaha*, *Annavaaha* and *Asthivahasrotasa*:**

Sr. No.	<i>Strotasa</i>	N	Mean score			%	W	P	S
			B.T.	A.T.	Diff.				
1	<i>Rasavaha</i>	26	0.98	0.72	0.26	26.66	190	<0.001	HS
2	<i>Annavaaha</i>	20	0.96	0.86	0.1	10.34	15	0.063	NS
3	<i>Asthivaha</i>	30	1.61	1.15	0.46	28.86	300	<0.001	HS

**Table 8 Effect of therapy on investigation:**

Sr. No.	Investigations	N	Mean score			%	SD	SE	T	P
			B.T.	A.T.	Diff.					
1	ESR (after 1 hr in mm )	30	43.93	39.80	4.13	9.40	10.88	1.98	2.079	0.047
2	RA factor	30	77.69	81.98	-4.29	-5.52	36.72	6.70	-0.640	0.527
3	CRP test	30	26.79	17.51	9.28	34.63	25.72	4.69	1.976	0.058

**Table 9 Effect of therapy on functional test:**

Sr no.	Functional test		N	Mean score			%	SD	SE	T	P
				B.T.	A.T.	Diff.					
1	Foot pressure (in kg)	R	30	20.40	23.23	-2.833	13.88	3.63	0.66	-4.27	<0.001
		L	30	21.20	23.70	-2.500	11.79	3.24	0.59	-4.21	<0.001
2	Grip strength (in mm of hg)	R	30	85.26	102.66	-17.40	20.40	21.00	3.83	-4.53	<0.001
		L	30	95.33	113.13	-17.80	18.67	21.89	3.99	-4.45	<0.001
3	Walking time(25 feet/sec)		30	31.70	328.6	3.100	9.77	2.234	0.40	7.601	<0.001
4	DAS 28 Scale		30	5.695	5.174	0.521	9.15	0.528	0.09	5.403	<0.001
5	DI Scale		30	1.267	0.924	0.343	27.09	0.255	0.04	7.362	<0.001
6	VAS Scale		30	6.700	4.567	2.133	31.84	1.592	0.29	7.341	<0.001

**Overall effect of therapy: table 10**

Effect of therapy	No of patients	%
Complete remission (100%)	0	00.00%
Marked improvement (99-75%)	0	00.00%
Moderate improvement (74-50%)	0	00.00%
Mild improvement (49-25%)	12	40%
Unimproved (<24% )	18	60%