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ORIGINAL RESEARCH ARTICLE

COMPARATIVE STUDY OF EFFICACY OF *SHIVA GUGGULU* AND *ALAMBUSHADI GHAN VATI* IN THE MANAGEMENT OF *AMAVATA* WITH SPECIAL REFERENCE TO RHEUMATOID ARTHRITIS

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ABSTRACT

Background- The clinical presentation of *Amavata* closely mimics with the special variety of Rheumatologic disorders called rheumatoid arthritis (R.A.). Prevalence of RA is approx. 0.8 % of the population. Due to wide spectrum of disease, much prevalence in the society and lack of effective medicine, the disease had been chosen for the study. **Aim-** To compare the efficacy of "*Shiva Guggulu"* and *"Alambushadi Ghan Vati"* in the management of *Amavata* (R.A.). **Settings and Design:** Single Centered, Open Labeled, Randomized Clinical Study. **Methods and Material:** 50 clinically diagnosed patients of *Amavata* and who fulfilled the criteria of inclusion and willing to participate in trial were registered for present clinical trial and divided into two groups by simple randomization method (Lottery method). **Group A-** 25 patients of *Amavata* were administered '*Shiva Guggulu'* 2 Tab (each Tab 500 mg.) thrice in a day with lukewarm water, after meal for 30 days **Group B-** 25 patients of *Amavata* were administered *'Alambushadi Ghan Vati'* 2 Tab (each Tab 500 mg) thrice in a day, with lukewarm water, after meal for 30 days. **Statistical analysis used:** In Stat Graph Pad 3 Software was used for statistical analysis. For Nonparametric data Wilcoxon matched-pairs signed ranks test while for Parametric data Paired't' Test and for Inter group comparison, Mann-Whitney Test & Unpaired 't' Test were used. **Conclusion**: On comparing the effect of two therapies it can be concluded that Group B (*Alambushadi Ghana Vati)* provided better relief statistically than Group A (*Shiva Guggulu*) in most of the sign and symptom of the disease. It also considerably prevents the relapse**.**

Key-words: *Amavata, Alambushadi Ghana Vati, Shiva Guggulu,* Rheumatoid arthritis.

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INTRODUCTION:

In the present era, due to modern life style, hectic work schedule, stress and many such reasons, incidence of disease are increasing, one of them is *Amavata*, which can be compared with Rheumatoid Arthritis having similarity with clinical presentation. The disease is being chosen for the study due to its widespread clinical spectrum, increased prevalence and lack of effective medicine. Prevalence of the disease is approx 0.8 % of the population and about 80 % of people developed this disease between the ages of 35 – 50 yrs [1]. The line of treatment described for the disease in *Chakradutta Amavatachikisa Prakarana* is "*Langhanam Swedanam Tiktham*…." [2]. According to the nature of disease, it is essential to work on such therapy which has *Ama* and *Vatahara* properties. Thus, ***'Shiva Guggulu'*** and ***'Alambushadi ghan vati'*** were selected for study of *Samshamana* therapy. Above mentioned drugs are easily available, cost effective and easy to administer in patients.

Aims and objectives:

- To study the comparison of efficacy of ***'Shiva Guggulu"*** and ***"Alambushadi Ghan Vati"*** in the management of *Amavata.*

MATERIALS & METHODS:

Research design:, Open-labeled, randomized and comparative clinical trial.

Study Population: An accessible population of *Amavata* patients in and around Jaipur, who were representative of target population, participated in the study.

Sampling: Simple random sampling technique was followed using lottery method. The case selection was random regardless of sex, occupation and socio-economic conditions.

Study sample: Previously known or freshly identified patients of *amavata* (rheumatoid arthritis) from in and around Jaipur were taken for the study, following the criteria of the diagnosis of rheumatoid arthritis as per modern medicine (EULAR Criteria) [3] and the clinical features of *amavata* described in *Madhava Nidana*. [4].

Sample size: A total of 50 patients of *amavata*, willingly participating in the study from in and around Jaipur after a preliminary screening. **(**25 patients in each group).

Sample size estimation method: We estimated that a total of 23 patients would be needed to detect a difference between groups, with a two-tailed 0.05 α of and a (1 – β) of 0.80, for a comparison of 2 independent proportions if there was an absolute decrease of 18 percent in the composite outcome measure. We expected 10 % drop out in each group and re-adjusted our sample size 25 patients in each group.

Study setting: The study was carried out in *Kayachikitsa* OPD and IPD of National

Institute of Ayurveda, Jaipur (Rajasthan) India, from Dec 2016 to March 2017.

Diagnostic Criteria: The diagnosis was based on following the criteria of the diagnosis of rheumatoid arthritis as per modern medicine (EULAR Criteria) and the clinical features of *Amavata* described in *Madhava Nidana*. .

Inclusion criteria:

The patients between the age group of 18 to 60 years in either sex presenting with clinical features of *Amavata ,* Patient diagnosed for Rheumatoid Arthritis on the basis EULAR criteria, pre-diagnosed patient of *Amavata*.(Rheumatoid Arthritis) (chronicity < 4 years).

Exclusion criteria:

Patients having severe crippling bone deformities, previously diagnosed case of paralysis, any type of arthopathy such as neoplasm of spine, Gout, Ankylosing spondylosis, traumatic arthritis and pyogenic Osteomylitis etc , associated Cardiac disease, Tuberculosis, Diabetes Mellitus, Malignant Hypertension, Renal Function Impairment; Hypothyroidism, RHD etc ,Patients with extremely reduced joint space ,Pregnant women and lactating mother.

Ethical clearance:

This study was approved by Institutional Ethical Committee (IEC) of National Institute of Ayurveda, Jaipur vide letter no. IEC/ ACA/ 2015/ 40; dated 21.05.2015, before starting the clinical trial on clinically diagnosed patients of *Amavata.*

Study Setting: The total study period was 3 months i.e. Dec 2016 to March 2017. The duration of the clinical trial was 1 month.

Technique of Data Collection: After an initial screening, patients fulfilling the diagnostic and inclusion criteria were included in the study with due informed written consent of the participating patients. They were thoroughly interrogated; history and facts were noted in a specialized structured clinical proforma. General vital information about chief complaints, history of present and past illness, family history, personal history to get information on diet, appetite, bladder habits, bowel habits, allergies, addictions if any, along with treatment history was noted. Examinations like anthropometry, general physical examinations, and systemic examinations along with *Dashavidha pareeksha* were included in clinical proforma.

Selection of drug:

Drugs & method of its preparation-

Table no. 1-showing the contents of - *Shiva Guggulu*[5] .

S.no.	Sanskrit name	Botanical name	Part used	Quantity
1.	*Shiva*	*Terminalia chebula Retz.*	Fruit	1 part

2.	*Bibhitaki*	*Terminalia bellerica Roxb.*	Fruit	1 part
3.	*Aamalaki*	*Embelica officinalis Gaertn.*	Fruit	1 part
4.	*Erand taila*	*Riccinus communis Linn.*	Seed oil	1/2 part
5.	*Gandhaka*	Sulphur	Purified S	1/5part
6.	*Guggulu*	*Commiphora mukul Hook*	Purified Exudate	1/2 part
7.	*Rasna*	*Pluchea lanceolata Oliver& Hiern*	Leaf	1/36 part
8.	*Vidanga*	*Embelia ribs Burm.*	Fruit	1/36 part
9.	*Maricha*	*Piper nigrum Linn.*	Fruit	1/36 part
10.	*Pippali*	*Piper longum Linn.*	Fruit	1/36 part
11.	*Dantimoola*	*Baliospermum montanumMuell-Arg.*	Root	1/36 part
12.	*Jatamansi*	*Nordostachys jatamansi DC.*	Root	1/36 part
13.	*Shunthi*	*Zinziber officinale Roscoe.*	Rhizome	1/36 part
14.	*Devdaru*	*Cidrus devdaru Roxb.*	Hard wood	1/36 part

METHOD OF PREPRATION -

Contents of *Shiva Guggulu* were taken in above said ratio and coarse powder was made of all drugs. Then the coarse powder of *Haritaki, Bibhitaki* and *Amalaki* taken and 16 parts of water were added and boiled till 4 parts of water remained. (i.e. *kwatha*) then filter it and the filter decoction was added *Eranda Taila*, *Shuddha Gandhaka* and *Shuddha Guggulu* in given ratio and heat in slow flame, until it become semi solid . After that powder of all remaining drugs was mixed in it in given ratio and tab of 500 mg each were prepared in the pharmacy of NIA Jaipur. The prepared drug batch no. was A0101

Table no. 2- showing the contents of *Alambushadi Ghana Vati*-[6].

SN	**SANSKRIT NAME**	**BOTANICAL NAME**	***PART USED***	***QUANTITY***
1.	*Alambusha*	*Sphaeranthus indicus Linn.*	*Panchanga*	1 part
2.	*Gokshur*	*Tribulus terrestris Retz.*	Root	2 part
3.	*Haritaki*	*Terminalia chebula. . Linn*	Fruit	3 part
4.	*Bibhitaki*	*Terminalia bellerica Roxb.*	Fruit	4 part

5.	*Amalaki*	*Embilica officinalis Gaertn.*	Fruit	5 part
6.	*Shunthi*	*Zingiber officinale Roscoe.*	Rhizome	6 part
7.	*Amrita*	*Tinospora cordifolia Miers*	Stem	7 part
8.	*Trivritta*	*Operculina turpethum Silva Manso.*	Root	28 part

Method of Preparation-

Contents of *Alambushadi Ghana Vati* were taken in above explained ratio and coarse powder was made of all drugs. Then 16 parts of water was added and boiled till 8 parts of water remains (i.e.*Kwatha*). Then after filtering it, and filtered decoction was again boiled for *Rasakriya,* until it became *Ghana.* Then Vati-each of 500mg were made .This drug was prepared in pharmacy of NIA Jaipur The prepared drug batch no. was A0101.

Treatment methodology and schedule: The selected patients as per inclusion criteria were randomly allocated to Group A and Groups B. Methodology of treatment for each group is summarized in table 3.

Table no. 3. Methodology of interventions in both groups

TRIAL DRUG FOR GROUP A	**TRIAL DRUG FOR GROUP B**
Shiva Guggulu 2 Tab (each Tab 500 mg.) three times in a day with lukewarm water, after meal for 30 days.	***Alambushadi ghan vati*** 2 Tab (each Tab 500 mg), three times in a day, after meal for 30 days With lukewarm water.

Assessment-

Criteria for assessment- Both the groups were assessed before and after the study on the basis of subjective and objective parameters.

DAS 28 (DISEASE ACTIVITY SCORE 28) [7] -

- The DAS 28 is a measure of disease activity in rheumatoid arthritis (RA). DAS stands for 'disease activity score' and the number 28 refers to the 28 joints that are examined in this assessment.

a) **Subjective criteria**

The following sign and symptoms of *amavata* were assessed for any improvement before and after the course of therapy-

- *Sandhishoola* (pain in joint)
- *Angamarda* (Bodyache)
- *Aruchi* (Anorexia)
- *Trishna* (Polydipsia)
- *Alasya* (Lassitude)
- *Gaurava* (Heaviness of body)
- *Jwara* (Fever)
- *Apaka* (Indigestion of food)
- *Bahumootrata* (Polyuria)

b) Objective parameters- Laboratory Investigations: (Before and after trial)

- Erythrocyte Sedimentation Rate (ESR)
- C-Reactive Protein (CRP)
- Rheumatoid Arthritis Factor (RA factor)
- Hemoglobin (Hb%)
- Total Leucocytes Count (TLC)

For exclusion – (Before trial)

- Fasting Blood Sugar Level (FBS)
- Serum Uric Acid.
- Anti-streptolysin-O Test (ASL-O Test)
- Urine examination Routine & Microscopic (R/M)
- Radiological investigation- X-ray of appropriate joints (AP& lateral view).

For safety profile- (Before and after trial)

- SGOT ,SGPT Blood Urea & Serum creatinine

Data analysis: Obtained results were analyzed statistically with the help of software IN STAT GRAPH PAD 3. To check the level of significance in the single group, Wilcoxon matched-pairs signed ranks test was used for Non-Parametric data, while Paired 't' Test was used for Parametric Data. To assess the level of significance between two groups, Mann-Whitney Test & Unpaired 't' Test was used for Non-Parametric and parametric data accordingly. The results were interpreted as; Non significant: P >0.05, Significant: P <0.05, Highly significant: P < 0.01, P < 0.001 P<0.0001.

OBSERVATION:

50% patients belong to 3rd to 5th decade of life, Incidence of disease is found notably higher in females (86%) than in males (14%) i.e. (6:1) Majority of the patients **(**74%) belonged to Hindu religion; 92% patients were married. Out of which, maximum 70% of patients were housewives followed by 14% laboros and about 60% patients belong to middle class. Max. 70% patients were of *Vata-Kaphaj Prakriti* which is highly associated with the development of *Amavata,* 52 % patients showed *Avara Ahara Shakti,* 50% patients showed *Avara Vyayama shakti,* 48 % patients showed *Madhyama* nature of *Koshtha* 58% patients were of *Mandagni*. In this type of *Koshtha* & *Agni* there is predominance of *Vata & Kapha Dosha*, which may play important role in developing the pathogenesis of *Amavata.* Maximum 50% patients were Tea addicted, maximum 80% patients were found with duration of illness 2-4 yrs, 52% patients were having positive drug history of Allopathic medicine, maximum patients were found with *Atiguru Ahara* 86% then *Singdha Ahara* 80%, *Ati Madhura* 54%, *Atidrava Ahara* 48%, *Adhyashana* 80%, *Vishamashana* 76%, *Divasvapna* and *Nishchalata* 80%, *Bhojanottara Vyayama & Ratri Jagarana* 60%, *Vishama Shayya* 54 %, *Chinta* 50%, *Bhaya* 09% , *Shoka* 16% . 40% patients had positive family history of the disease, maximum 74% patients

had CRP & 44% patients had RA factor positive before the treatment, 100% patients had pain in joint, stiffness of joint, swelling of joint, tenderness at joint, restriction of movement; 96% *Angamarda, Apaka* and *Aruchi,* 90% *Jwara* and 84% patients had *Bahumootrata, Alasya* and *Gaurava* & 60% patients had *Trishana* before the treatment , maximum 96 % patients were had proximal interphalangeal (hand) joint involvement, 90% Metacarpophalangeal, 68% distal interphalangeal (hand) joint, 84 % wrist joint, 76% elbow joint, 25% shoulder joint, 60% ankle joint, 40% knee joint involvement, 76% joint involvement.

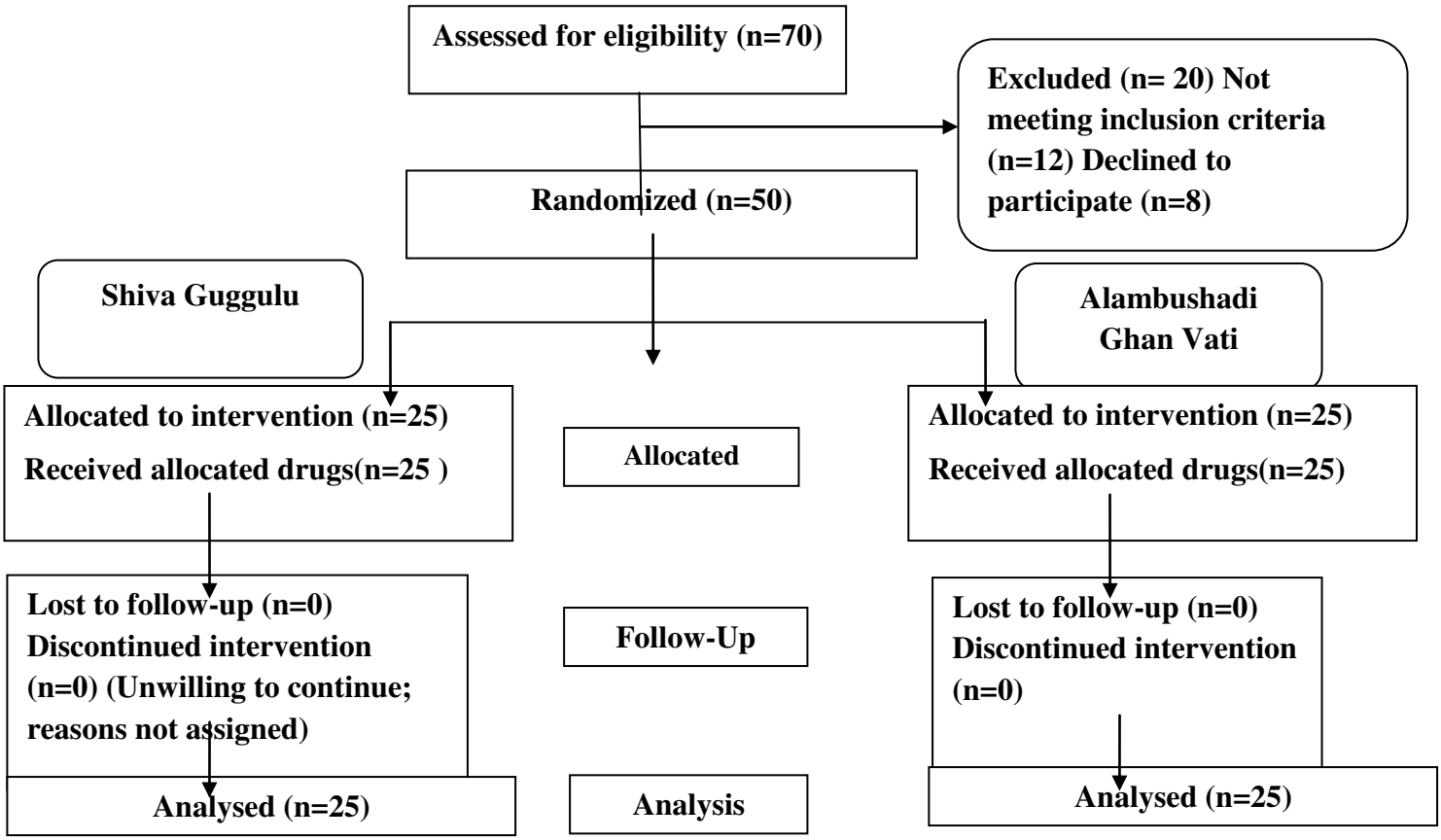

Figure no. 1- Flow chart showing the trial details

RESULTS:

Effect of therapy on subjective Parameters-

Table No.4: Showing Effect of Therapy in Subjective Parameters (Wilcoxon Matched Paired Singed Ranks Test)

Variable	Gr.	Mean		Mean Diff.	% Change	SD±	SE±	P	S
		BT	AT						
Pain in joint	Gr. A	5.24	1.68	3.56↓	67.93	0.7118	0.1424	<0.0001	HS

	Gr. B	5.16	1.32	3.84↓	74.41	0.8961	0.1796	<0.0001	HS
Stiffness of joint	Gr. A	2.12	0.96	1.16↓	54.71	0.5538	0.1108	<0.0001	HS
	Gr. B	2.40	0.84	1.56↓	65.00	0.5831	0.1166	<0.0001	HS
Swelling of joint	Gr. A	1.60	0.48	1.12↓	70.00	0.8327	0.1665	<0.0001	HS
	Gr. B	1.84	0.44	1.40↓	77.70	0.6455	0.1291	<0.0001	HS
Restriction of movement	Gr. A	1.64	0.84	0.80↓	50.00	0.6455	0.1291	<0.0001	HS
	Gr. B	1.50	0.41	1.083↓	72.00	0.5836	0.1191	<0.0001	HS
Tenderness at joint	Gr. A	1.72	0.68	1.04↓	61.17	0.5385	0.1077	<0.0001	HS
	Gr. B	1.76	0.40	1.36↓	80.00	0.4899	0.9798	<0.0001	HS
Angmarda	Gr. A	2.28	0.92	1.36↓	59.64	0.8602	0.1720	<0.0001	HS
	Gr. B	2.48	1.12	1.36↓	56.66	0.5686	0.1137	<0.0001	HS
Aruchi	Gr. A	1.52	0.56	0.96↓	64.00	0.9345	0.1869	<0.0001	HS
	Gr. B	2.00	0.80	1.2 ↓	60.00	0.5774	0.1150	<0.0001	HS
Trishna	Gr. A	0.80	0.40	0.40↓	56.66	0.5000	0.1000	<0.05	S
	Gr. B	1.16	0.84	0.32↓	27.58	0.6904	0.1381	>0.05	NS
Alasya	Gr. A	1.16	0.68	0.48↓	41.37	0.8718	0.1744	<0.05	S
	Gr. B	1.48	0.44	1.04↓	73.30	1.060	0.1705	<0.0001	HS
Gaurava	Gr. A	1.16	0.68	0.48↓	71.42	0.8718	0.1744	<0.05	S
	Gr. B	1.80	0.48	1.04↓	50.00	0.8524	0.1705	<0.0001	HS

(Gr.: Group, BT:Before treatment, AT: After treatment, Diff.: Difference, SD : Standard Deviation, SE: Standard Error, P: P value ,S :Significance level, HS: Highly Significant S: Significant)

Results in the patients of Group A: Group A, showed highly significant results regarding Subjective parameters –pain in joint, stiffness of joint, swelling of joint, restriction of movement, tenderness at joint, *Angamarda, Aruchi, Jwara, Apaka & Bahumootrata* with % relief of 67.93%, 54.71%, 70.00%, 50%, 61.17%, 59.64%, 64.00%, 71.42%, 62.50%, 62.5% respectively. In case of other Subjective parameters i.e. *Trishna, Alasya*, *Gaurava* there was significant result with % relief of 56.66*%,* 41.37*%,* 71.42% respectiviely.

Results in the patients of Group B: In Group B, Showed pain in joint, stiffness of joint, swelling of joint, restriction of movement, tenderness at joint, *Angamarda, Aruchi, Alsaya, Gaurava, Jwara, Apaka & Bahumootrata* with percentage improvement of 74.41%, 65.00%, 77.70%, 72.20%, 80.00%, 56.66%, 60.00%, 57.88%, 73.30%, 50.00%, 50.00%, 77.50%

respectively while in *Trishna* there was non significant result with % relief of 27.58%.

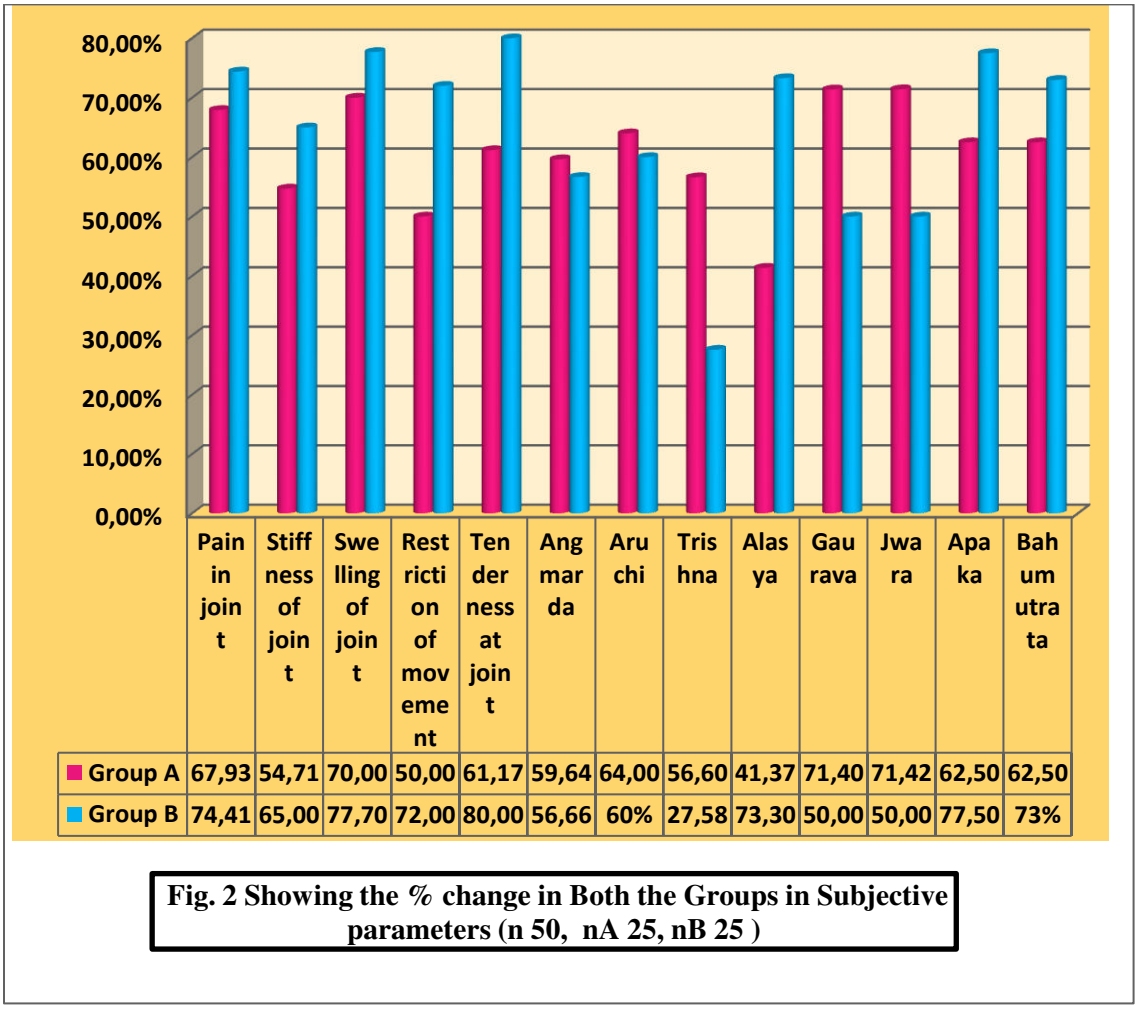

Fig. 2 Showing the % change in Both the Groups in Subjective parameters (n 50, nA 25, nB 25)

Table No.5: Intergroup Comparison of Group A & Group B for Subjective Parameters: (Mann-Whitney Test)

Variable	Groups	Mean	SD±	SE±	P	S
Pain in joint	A	3.56	0.7118	0.1424	>0.05	NS
	B	3.88	0.8813	0.1763		
Stiffness of joint	A	1.16	0.5538	0.1108	<0.05	S
	B	1.56	0.5831	0.1166		
Swelling of joint	A	1.080	0.8622	0.1724	>0.05	NS
	B	1.400	0.6455	0.1291		
Restriction of	A	0.80	0.6455	0.1291	>0.05	NS

movement	B	0.1.08	0.5715	0.1143		
Tenderness at joint	A	1.040	0.5385	0.1077	>0.05	NS
	B	1.160	0.3792	0.07483		
Angmarda	A	1.040	0.8406	0.1681	>0.05	NS
	B	1.360	0.5686	0.1137		
Aruchi	A	1.040	0.8406	0.1681	>0.05	NS
	B	1.120	0.6658	0.1332		
Trishna	A	0.280	0.4583	0.09165	<0.05	S
	B	0.560	0.5066	0.1013		
Alasya	A	0.640	0.6377	0.1275	<0.05	S
	B	0.1.20	0.7000	0.1732		
Gaurava	A	0.64	0.8524	0.1400	<0.05	S
	B	1.32	0.6399	0.1705		
Jwara	A	0.880	0.5260	0.1052	>0.05	NS
	B	0.800	0.7638	0.1528		
Apaka	A	1.000	0.5774	0.1155	>0.05	NS
	B	1.160	0.8000	0.1600		
Bahumootrata	A	1.000	0.7071	0.1414	>0.05	NS
	B	1.320	0.9883	0.1977		

Result in intergroup comparison- there was non significant result in all subjective parameters on intergroup comparison except stiffness of joint ,*trishna ,alasya* and *gaurava* ,in these subjective parameters significant result was found.

Table No.-6 : Showing Effect of Therapy in RA and CRP - (Wilcoxon Matched-Pairs Signed-Ranks Test)

Variable	Group	Mean		Mean Diff.	% change	SD±	SE±	P	S
		BT	AT						
	Gr. A	0.7600	0.7200	0.0400	5.26	0.2000	0.0400	>0.05	NS

CRP	Gr. B	0.7200	0.6400	0.0800	11.1	0.2769	0.05538	>0.05	NS
RA	Gr. A	0.4800	0.4400	0.4000	8.3	0.2000	0.04000	>0.05	NS
	Gr. B	0.4000	0.3600	0.0400	10	0.2000	.04000	>0.05	NS

Table No.7: Showing effect of Therapy on Lab Investigations (Objectives parameters): (Paired 't' Test)

Variable	Group	Mean		Mean Diff.	% Change	SD±	SE±	T	P	S
		BT	AT							
Hb% (gm %)	Gr. A	11.55	11.7	0.148	1.281	0.4718	0.09436	1.568	>0.05	NS
	Gr. B	11.79	11.92	0.128	1.085	0.3361	0.6721	1.904	>0.05	NS
TLC	Gr. A	6892	6796	96.00	1.39	527.1	150.43	.9105	>0.05	NS
	Gr. B	7896	7496	400	5.06	750.56	150.11	2.656	<0.05	S
ESR	Gr. A	45.12	36.2	8.920	19.76	8.86	1.772	5.034	<0.0001	HS
	Gr. B	42.32	31.4	10.92	25.80	7.029	1.406	7.768	<0.0001	HS

(Hb-Haemoglobin; TLC-Total Leucocytes Count; ESR-Erythrocyte Sedimentation Rate)

Result In Objective parameters -In group A ESR shown Highly significant result with percentage decrease of 19.76%, While in Group B 25.80 %. In Hb%, TLC, CRP and RA factor there were non significant results in group A and Group B both. In case of Groub B TLC had shown significant results with percentage decrease of 5.06% .

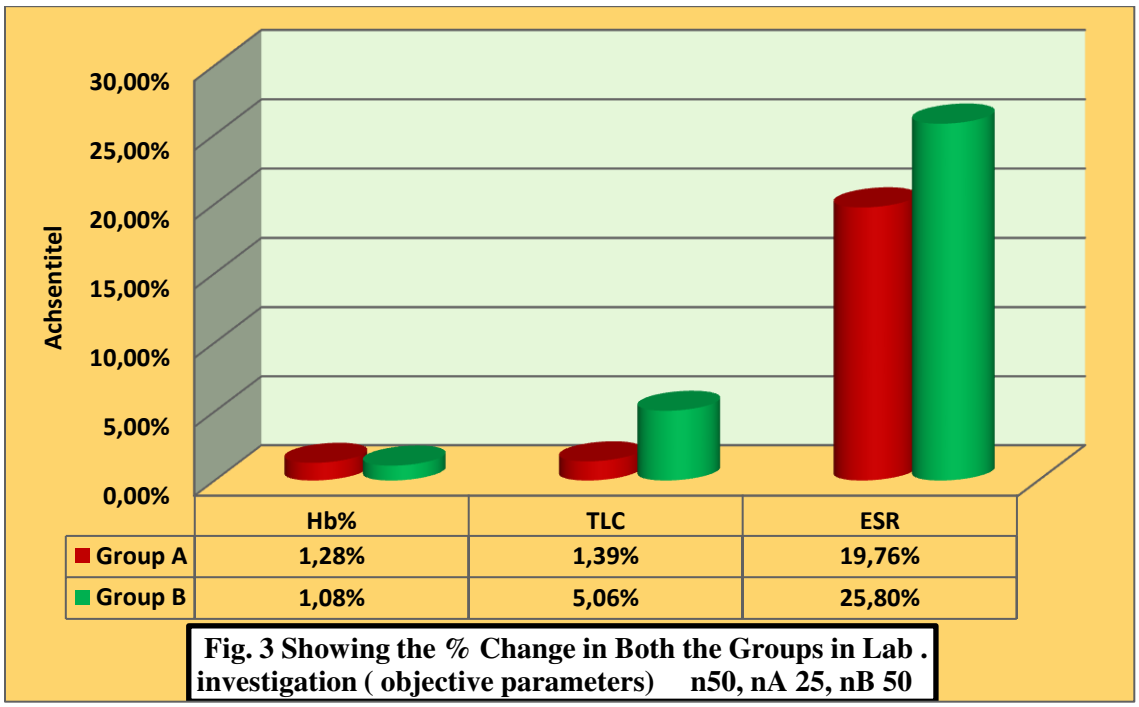

Fig. 3 Showing the % Change in Both the Groups in Lab . investigation (objective parameters) n50, nA 25, nB 50

Table No. 8: Intergroup Comparison of Group A & Group B for Lab investigation (Unpaired t Test)

Variable	Groups	Mean	SD±	SE±	t value	P	S
Hb%	A	0.4240	0.2919	0.05839	1.752	>0.05	NS
	B	0.3000	0.2000	0.04000			
TLC	A	340.00	405.17	81.035	2.233	<0.05	S
	B	644.0	547.02	109.40			
ESR	A	9.640	7.274	1.455	1.201	>0.05	NS
	B	11.960	6.361	1.272			

There was non significant result found in all objective parameters on intergroup comparison except TLC significant result was found.

Table No.9: Showing the DAS 28 SCORE in group A in 25 patients-

DISEASE ACTIVITY SCORE	BT (no. of Pt.)	AT(no.of pt)
DAS28 (>5.1) = high disease activity	12	8
DAS 28 (3.2 to < 5.1)= Moderate disease activity	8	7
DAS28 (2.6 to <3.2) = Mild disease activity	5	8
DAS28 (<2.6) = remission	-	2

Table No.10: Showing the DAS 28 SCORE in group B in 25 patients-

DISEASE ACTIVITY SCORE	BT (No. of Pt.)	AT(No.of pt)

DAS28 (>5.1) = high disease activity	10	8
DAS 28 (3.2 to < 5.1)= Moderate disease activity	9	7
Das28 (2.6 to <3.2) = Mild disease activity	6	7
DAS28 (<2.6) = remission	-	3

DISCUSSION:

In *Shiva Guggulu,* out of 14 drugs 5 drugs having *Tikta Rasa,* 7 drugs having *Katu Rasa* and 3 drugs have *Kashaya Rasa*. It helps in digestion of *Ama* & it has *Ashupaka* property through which it acts quickly at minute channels and in pacifying *Vata Dosha.* Out of 14 drugs 11 drugs have *Laghu Guna* and 6 drugs have *Ruksha Guna* which helps in *Amapachana and Agnideepana* and 11 drugs out of 14 have *Ushna Virya w*hich pacify both *Vata* and *Kapha Dosha.* In the first stage of disease *Amotapatti* is there and *Shiva Guggulu* does *Amapachana* as all the pharmacodyanamic property of *Shiva Guggulu* i.e. *Laghu, Ruksha, Tikshna Guna, Katu Tikta Rasa, Ushna Virya* are against the Guru, *Snigdha, Pichiila, Shita* properties of *Ama* also some effect of antioxidant property of *Shiva Guggulu* over *Ama* (free radical) must be there. Later the *Yugata Prakopa* of disease is checked by *Vata-Kaphhara* action of the drug. Further *Ama* formation is stopped by *Deepaniya* action of the drugs. In the *Srotoabisyanda* it does *Srotoshodhana* and relieves the symptoms of *Shandhishoola*, *Shotha, Alasya, Aruchi* etc by its analgesic *(Vednaprasamana)* and anti-inflammatory (*Shothhara)* action also the associated symptoms like *Vibandha, Anaha* etc. are reduced by *Anulomana* i.e. purgative property of the drug. As most of the drugs are *Vata Kaphasamka* and *Agni Deepana*, so it is very suitable for the *Samprampti Vighatana* of the disease and to combat the main culprit (*Ama*, *Vata And Kapha*) and *Mandagni*, which are the root source of *Amavata*.

Eranda[8] *Rechaka, Vedana Sthapaka*and *Vrishya* drug*.* It is drug of choice for the *Avrita Vata. Gandhaka* [9] having *katu, tikta rasa, laghu, usna guna, katu vipaka* and properties like *rasayan ,deepana, pachana* etc. so helps in *amapachana* and reliving pain. *Guggulu* [10] Due to *ushnaguna*, it is major *vatashamaka* drug. It is *deepana*, due to *katurasa*. It has *lekhana* property which proves to be useful in *avrittavata* type of pathology of *Amavata.*

Alambushadi Ghana Vati, *Katu,Tikta* dominant *Rasa* in this formulation thus help in digestion of *Ama* & finally in breakage of pathogenesis of Disease. Besides this, there is dominancy of *Laghu, Ruksha Gunas* in the *Alambhushadi Ghana vati* which also helps in *Kaphaghna* property. 5 *Dravyas* out of 8 in

the formulation possesses *Laghu* & *Ruksha Guna*. This formulation is also dominantly has 5 *Dravyas* with *Ushna virya* which also helps to pacify the *Vata Dosha*. 6 *Dravyas with Shothahara & Anulomana property.* With these properties *of Alambushadi Ghana Vati* to digest *the Ama &* to control the *Vata Dosha.*

Guduchi is also proved to have antirheumatic, anti -inflammatory and immune-modulatary properties [11] *Sunthi* is also proved beneficial for in terms of rheumatic and musculoskelatal disorders provided relief from pain and swelling[12]. *Triphala* having *Rasayana ,Tridoshahara & Virechana* properties [13] helps in reducing the swelling in the joints.

Gokshura with their diuretic properties, help in reducing the swelling in the joints, so it is *Vata Shamaka* [14]*.*

CONCLUSION:

It can be observed from the above study data that although Group A has provided significant relief in the sign and symptom of the disease but, on comparing Group B has provided statistically significant improvement in stiffness of joint, *Trishna Alasya,Gaurav* and in TLC . So it can be concluded that Goup B is comparably better than Group A in the management of *Amavata* (R.A).

Limitations- Although this study was conducted on small sample size with limited duration, hence any strong conclusion may be premature but it is expected that the present study will disclose some definite clues to the future researchers.

Suggestions for future research

It is suggested that the study should be continued with large sample and treatment for longer duration with Multi-centric study. In further studies estimation for IgE level should be measured before and after treatment to prove its efficacy on immune system.

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