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ORIGINAL RESEARCH ARTICLE

A CLINICO COMPARATIVE STUDY OF PANCHASAMA CHOORNA WITH AND WITHOUT VALUKA SWEDA IN AMAVATA W.S.R. RHEUMATOID ARTHRITIS

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ABSTRACT

Background: *Amavata* which can be compared to Rheumatoid arthritis is a clinical condition where low digestive power plays an important role**.** Panchasama choorna helps in the management of *Amavata* by increasing digestive power, clearing the channels of circulation, reduces inflammation and pain when administered with fomentation. **Objectives:** 1.To compare the efficacy of trial drug Panchasama choorna individually as well as with *valuka sweda* (fomentation by sand bolus). 2. To establish a safe, economical and effective medication for *Amavata* without side effect. **Method:** In this study 30 patients were selected satisfying the inclusion criteria and randomly divided into two groups. In Group A– Panchasama choorna 4gms TID was administered for 30 days with Luke warm water. In Group B – Panchasama choorna 4gms TID with Luke warm water was administered for 30 days with *valuka sweda* for 15 days. Severity of the disease was assessed based on selected subjective and objective parameters. **Results:** After trial, it was observed that better and sustained relief with respect to all the signs and symptoms were observed in group B which is treated with combined therapy. Overall assessment shows marked, moderate, mild improvement and unchanged as 20%, 46.7%, 26.7% & 6.7% respectively among group B patients. **Conclusion:** The drug Panchasama choorna was found to be highly significant in providing symptomatic relief when administered along with valuka sweda.

Key words: Amavata, Panchasama choorna, valuka sweda, Rheumatoid arthritis.

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INTRODUCTION:

Amavata is characterized by multiple joint pains with inflammation, fever and stiffness in the joints causing temporary or permanent disability and hampers daily working capacity [1]. It is a chronic degenerative disease of connective tissues [2]. As per classics improper digestive mechanism is the basic cause of this disease. *Amavata* has unique importance for its gravity of pain that resembles to 'scorpion bite'. In early stages only the joints involvement can be seen with cardinal features like generalized malaise, loss of appetite, tiredness, fever and swelling in the joints etc. If it is not treated properly it may lead to severe systemic complications [3]. The onset is most frequent during 35 to 50 years. It can be compared to Rheumatoid arthritis which is a systemic chronic inflammatory joint disorder that affects synovial joints characterized by symmetrical involvement of joints along with pain, stiffness and swelling followed by cardiac involvement [4].There is no specific treatment in contemporary science except suppression or controlling the disease activity with symptomatic relief.

For *Amavata* Acharya Chakradatta has given emphasis on a therapeutic programme in terms of *chikitsa sutra* (treatment principle) instead of single therapy for complete cure [5]. Keeping all these points in view, this research work was undertaken as a clinical evaluation of *Panchasama choorna* alone in one group and along with *valuka sweda* in another which is easy to administer, having no listed side effects and cost effective .

Aims and objects:

1. To assess the clinical efficacy of *panchasama choorna* in *amavata.*
2. To evaluate the role of *panchasama choorna* with *valuka sweda*.
3. To compare the clinical efficacy of *panchasama choorna* alone and *panchasama choorna* with *valuka sweda* on the patients of *amavata*.

MATERIALS AND METHODS

Study design: It is a Randomized single blind comparative clinical study. Response of the treatment has been assessed weekly for 1 month followed by follow up after 1 month. In both groups, patients were advised to follow the prescribed diet and regimen. Students Paired 't' test was used for statistical analysis.

Study Sample: OPD and IPD of S V M Ayurvedic Medical College & Hospital, ILKAL.

Study Settings: Study was carried out from 2012 to 2015 at SVM Ayurvedic College's RPK Ayurvedic Hospital, ILKAL.

Trial drug details [6]**:**

Sanskrit name	Latin name	Part used	Percentage
Shunti	*Zingiber officinale*	Rhizome	20%
Pippali	*Piper longum*	Fruit	20%
Haritaki	*Terminalia chebula*	Fruit	20%
Trivrt	*Operculina terpethum*	Root	20%
souvarchala lavana	Black salt	Salt	20%

Selection of Patients: The patients of *Amavata* fulfilling the criteria of diagnosis were selected for the study.

Diagnostic Criteria: Clinical features of *amavata* mentioned in Ayurvedic literatures v.i.z. generalized malaise, loss of appetite, tiredness, fever and swelling over the joints as well as signs and symptoms of Rheumatoid arthritis vi.z. joint pain, joint swelling, joint tenderness and morning stiffness etc .[7]

Inclusion criteria: Patients fulfilling the following conditions were included for the study.

1. Patients presented with signs and symptoms of *Amavata* described in Ayurvedic classics.
2. Patients from either sex with in the age group between 15-60 years.
3. Patients who had satisfied the criteria lay down by the American Rheumatoid association.

Exclusion criteria:

1. Those who are suffering from complications V.I.Z. Rheumatic heart disease etc.
2. Patients having other systemic illness.
3. Patients on Disease modifying Anti Rheumatic Drugs [DMARD].

Laboratory Investigations:

1. Blood – ESR.
2. RA factor
3. C-reactive protein (All these investigations were carried out in case of necessity)

Treatment schedule:

Group A –*Panchasama choorna* 4 gms with luke warm water thrice daily for 30 days.

Group B –*Panchasama choorna* 4 gms with luke warm water thrice daily for 30 days and *Valuka sweda* for 15 days.

Assessment Criteria:

General Clinical Features

1. ***Angamarda*** **(Malaise)**

Scores

No angamarda 0

Angamarda but can do day to day routines	1
Angamarda, restricts the routines	2
Cannot move due to Angamarda	3

2. ***Alasya*** **(Laziness)**

No feeling of laziness	0
Daily works did satisfactorily but delayed	1
Doing works unsatisfactorily and delayed	2
Reduces work due to unenthusiasm	3

3. *Jwara* (Fever)

Absence of Fever	0
Jwara lakshana, without rise in temp.	1
Jwara lakshana, upto 100^{o} F	2
Jwara above 100^{o} F temperature	3

4. *Anga shoonata* (Swelling)

No swelling	0
Slight swelling	1
Moderate swelling	
with pain during movement	2
Severe swelling with immobilization of joints	3

Localized Signs and symptoms

1. Daha **(Burning sensation)**

Absence of daha	0
Feeling of daha on & off	1
Feeling of daha more than 4 hours	2
Whole day feeling of daha	3

2. Raga **(Discoloration)**

Absent	0
Mild discoloration	1
Moderate discoloration	2
Marked redness	3

3. Shoola **(Pain)**

No pain	0
Mild pain during movement	1
Even in rest also pain present	2
Unable to move body parts due to pain	3

4. Stambha **(Stiffness)**

Stiffness absent	0
Stiffness only in early morning	1
Prolonged stiffness for 2 hours	2
Stiffness restricts the daily routines	3

Associated symptoms:

1. *Aruchi* (Loss of appetite)

Equal willing towards all food substances	0
Willing towards some specific foods	1
Willing towards only one rasa	2
Willing towards only most liking food	3

2. *Trushna* (Excess thirst)

Water intake – 1 – 2 litres/24 hrs	0
2 – 3 litres/ 24 hrs	1
3 – 4 litres/ 24 hrs	2
More than 4 litres	3

3. *Apaka* (Indigestion)

Absence of indigestion	0
Feeling hungry 8 hrs after intake of food	1
Feeling hungry 12 hrs after intake of food	2
Feeling hungry 24 hrs after intake of food	3

Assessment of overall effect of therapy:

1. Complete relief: Patients in whom all signs and symptoms came down to normal or 100% relief were considered as complete relief cases.

2. Marked improvement: 75% relief in signs and symptoms
3. Moderate improvement: Patients in whom there was relief in signs and symptoms by more than 50% were considered to be moderately improved.
4. Mild improvement: Patients in whom there was 25% - 50% relief
5. Unchanged: Patients in whom there was no relief or less than 25% relief in signs and symptoms were considered as unchanged cases.

Statistical Analysis: Students paired "t" test was used for statistical analysis to declare the efficacy of treatments after treatment and after follow up in comparison to before treatment.

OBSERVATIONS AND RESULTS:

Group A: Effect of *Panchasama choorna* on different signs and symptoms

Table No. 1: Effect of Trial drug 1 on *angamarda* (Malaise)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
angamarda_BT	2.73	.458	.118	--	--	--	--	--
angamarda_AT	1.40	.507	.131	1.533	.743	7.990	14	.0001
angamarda_FU	1.20	.561	.145	1.533	.743	7.990	14	.0001

BT – Before Treatment, AT – After Treatment, FU – After Follow up, d.f. – Degree of freedom, n – Total number of Patients = 15.

Table No. 2: Effect of Trial drug 1 on a*lasya*(Laziness)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t– value	d.f (n – 1)	p- value
alasya_BT	1.27	1.387	.358	--	--	--	--	--
alasya_AT	.87	.915	.236	.507	3.055	14	.009	.507
alasya_FU	.53	.640	.165	.961	2.955	14	.010	.961

Table No. 3: Effect of Trial drug 1 on *Jwara*(fever)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
jwara_BT	2.07	1.223	.316	--	--	--	--	--
jwara_AT	1.13	.743	.192	.933	.704	5.137	14	.0001
jwara_FU	1.33	.976	.252	.733	.961	2.955	14	.010

Table No. 4: Effect of Trial drug 1 on *angashoonata*(swelling over joint)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
angashoon_BT	2.53	.640	.165	--	--	--	--	--
angashoon_AT	1.40	.507	.131	1.133	.640	6.859	14	.0001
angashoon_FU	1.20	.561	.145	1.133	.640	6.859	14	.0001

Table No. 5: Effect of Trial drug 1 on *daha* (burning sensation)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
daha_BT	.80	1.146	.296	--	--	--	--	--
daha_AT	.40	.737	.190	.400	.507	3.055	14	.009
daha_FU	.47	.915	.236	.333	.488	2.646	14	.019

Table No. 6: Effect of Trial drug 1 on *raga* (discoloration)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
raga_BT	.93	1.163	.300	--	--	--	--	--
raga_AT	.47	.743	.192	1.267	.458	10.717	14	.0001
raga_FU	.47	.834	.215	1.400	.632	8.573	14	.0001

Table No. 7: Effect of Trial drug 1 on *shoola* (joint pain)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
shoola_BT	2.67	.488	.126	--	--	--	--	--
shoola_AT	1.40	.507	.131	1.267	.458	10.717	14	.0001
shoola_FU	1.27	.458	.118	1.400	.632	8.573	14	.0001

Table No. 8: Effect of Trial drug 1 on *staimitya* (stiffness)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
staimitya_BT	2.67	.488	.126	--	--	--	--	--
staimitya_AT	1.47	.640	.165	1.200	.561	8.290	14	.0001
staimitya_FU	1.53	.640	.165	1.133	.915	4.795	14	.0001

Table No. 9: Effect of Trial drug 1 on *aruchi* (Loss of appetite)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
Aruchi_BT	1.4667	.91548	.23637	--	--	--	--	--
Aruchi_AT	.6000	.63246	.16330	.86667	.63994	5.245	14	.001
Aruchi_FU	.6667	.72375	.18687	.80000	.77460	4.000	14	.001

Table No. 10: Effect of Trial drug 1 on *trushna* (Excess thirst)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
Trushna_BT	.9333	1.0328	.26667	--	--	--	--	--
Trushna_AT	.4667	.74322	.19190	.46667	.51640	3.500	14	.004

Trushna_FU	.5333	.74322	.19190	.40000	.50709	3.055	14	.009

Table No. 11: Effect of Trial drug 1 *on apaka* (Indigestion)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
Apaka_BT	1.4000	1.0556	.27255	--	--	--	--	--
Apaka_AT	.6667	.72375	.18687	.73333	.59362	4.785	14	.003
Apaka_FU	.7333	.79881	.20625	.66667	.72375	3.568	14	.003

Group (B): Effect of *Panchasama choorna with Valuka sweda* on different signs and symptoms of Amavata

Table No. 11: Effect of Trial drug 2 on a*ngamarda* (Malaise)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
angamarda_BT	1.93	.961	.248	--	--	--	--	--
angamardaAT	1.07	.704	.182	.867	.352	9.539	14	.001
angamarda_FU	1.33	.816	.211	.600	.632	3.674	14	.003

Table No. 12: Effect of Trial drug 2 on alasya (laziness)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
alasya_BT	1.40	1.056	.273	--	--	--	--	--
alasya_AT	.73	.704	.182	.667	.488	5.292	14	.001
alasya_FU	.80	.775	.200	.600	.910	2.553	14	.023

Table No. 13: Effect of Trial drug 2 on *jwara* (fever)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
jwara_BT	1.33	1.113	.287	--	--	--	--	--
jwara_AT	.67	.816	.211	.667	.617	4.183	14	.001
jwara_FU	.67	.724	.187	.667	.816	3.162	14	.007

Table No. 14: Effect of Trial drug 2 on a*ngashoonata* (swelling overjoint)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
angashoon_BT	2.40	.632	.163	--	--	--	--	--
angashoon_AT	1.20	.561	.145	1.200	.561	8.290	14	.001
angashoon_FU	1.13	.516	.133	1.267	.884	5.551	14	.001

Table No. 15: Effect of Trial drug 2 on *daha* (burning sensation)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
daha_BT	.40	.632	.163	--	--	--	--	--
daha_AT	.13	.352	.091	.267	.458	2.256	14	.041
daha_FU	.20	.414	.107	.200	.414	1.871	14	.082

Table No. 16: Effect of Trial drug 2 on *raga* (discoloration)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
raga_BT	.47	.743	.192	--	--	--	--	--
raga_AT	.07	.258	.067	.400	.632	2.449	14	.028
raga_FU	.20	.414	.107	.267	.594	1.740	14	.104

Table No. 17: Effect of Trial drug 2 on *angashoonata*(swelling)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
shoola_BT	2.27	.594	.153	--	--	--	--	--
shoola_AT	1.13	.834	.215	1.133	.743	5.906	14	.001
shoola_FU	1.00	.378	.098	1.267	.594	8.264	14	.001

Table No. 18: Effect of Trial drug 2 on *staimitya* (stiffness)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
staimitya_BT	2.27	1.033	.267	--	--	--	--	--
staimitya_AT	1.13	.640	.165	1.133	.640	6.859	14	.001
staimitya_FU	1.33	.816	.211	.933	.884	4.090	14	.001

Table No. 19: Effect of Trial drug 2 on *aruchi* (loss of appetite)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
Aruchi_BT	2.0667	.88372	.22817	--	--	--	--	--
Aruchi_AT	.8667	.63994	.16523	1.2000	.56061	8.290	14	.001
Aruchi_FU	1.0667	.59362	.15327	1.0000	.53452	7.246	14	.001

Table No. 20: Effect of Trial drug 2 on *trushna* (excess thirst)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
Trushna_BT	1.4000	.91026	.23503	--	--	--	--	--
Trushna_AT	.6000	.73679	.19024	.80000	.67612	4.583	14	.0001
Trushna_FU	.6667	.61721	.15936	.73333	.59362	4.785	14	.0001

Table No. 21: Effect of Trial drug 2 on *apaka* (indigestion)

PARAMETER	MEAN	Std. Deviation	Std. Error Mean	MEAN DIFF.	Std. Deviation	t – value	d.f (n – 1)	p- value
Trushna_BT	1.4000	.91026	.23503	--	--	--	--	--
Trushna_AT	.6000	.73679	.19024	.80000	.67612	4.583	14	.0001
Trushna_FU	.6667	.61721	.15936	.73333	.59362	4.785	14	.0001

Table No. 21: Comparison between Overall effects of Group – A and Group –B Treatments After Treatment and after Follow up

Category	After Treatment		After Foolow up	
	Group - A	%	Group -B	%
Complete relief	0	0	0	0
Marked improvement	13.3	13.3	6.7	20
Moderate improvement	40	40	26.7	46.7
Improved	33.3	46.7	40	26.7
Unchanged	13.4	6.7	0	6.7

DISCUSSION:

The result obtained in both groups on each parameter are being discussed as follows-

Effect of therapies on generalized clinical features:

a) After 30 days of therapy- The *Panchasama choorna* provided highly significant relief (p<0.001) in the management of *Anga marda and Alasya* are 50% and 45% respectively. Statistically it is moderate significant (p<0.010) in the management of *Jwara and Anga shoonata* by 40% each.

The combined therapy i.e. the *Panchasama choorna* with *valuka sweda* provided highly significant relief (p<0.001) in the management of the entire *Sarvadihika Lakshanas* (Generalised symptoms). The percentages of symptoms relieved are *Anga marda*-60%, *Alasya*-50%, *Jwara*-45% and *Angashoonata*-50%.

b) After follow- up- The *Panchasama choorna* provided moderate significant relief (p<0.010) in the management of *Shoola* and *Staimithya* are 40% each. It provided mild significant relief (p<0.050) in the management of *Daha* and *Raga* are 50% each. The combined therapy provided highly significant relief (p<0/001) in all the *Sarvadaihika Lakshanas* are 65%, 60%, 55%, 65% respectively for *Angamarda, Alasya, Jwara and Anga shoonata* after the follow up.

Effect of therapies on *Sthanika Lakshanas* (Local signs and symptoms):

a) After 30 days of therapy- *Pachasama choorna* provided moderate significant relief (p<0.010) in the management of *Shoola* and *Staimithya* by 40% each, mild significant relief

(p<0.050) in the management of *Daha* and *Raga* by 50% each .

The combined therapy provided highly significant relief (p<0.001) in the management of *Shoola* and *Staimithya* by 60% and 40% respectively, where as it provided mild significant relief (p<0.050) in *Daha*, *Raga* by 41.66% and 41.66% respectively.

b) After follow- up- *Panchasama choorna* provided highly significant relief (p<0.001) in the management of *Shoola* . Moderate significant relief (p<0.010) in the management of *Daha, Raga* and *Staimithya* by 60%, 60% and 40% respectively. The combined therapy provided highly significant relief (p<0.001) in the management of *Raga, Shoola and Staimithya* are 66.66%, 65% and 50% respectively; where as it provided moderate significant relief (p<0.010) in *Daha* is 58.33%.

Effects of therapies on associated symptoms:

a) After 30 days of therapy- The *Panchasama choorna* provided moderate significant relief (p<0.010) in the management of all the associated symptoms like *Aruchi, Trushna and Apaka* are 40%, 40% and 45% respectively.

The combined therapy provided highly significant relief (p<0.001) in the management of *Aruchi* and *Trushna* by 45% each, where as it provided moderate significant relief (p<0.010) in the management of *Apaka* is 40%.

b) After follow up the *Panchasama choorna* provided highly significant relief (p<0.001) in the management of *Apakata* are 45%. *Moderate* significant relief (p<0.010) in the management of *Aruchi* and *Trushna* are 45% and 40% respectively.

The combined therapy provided highly significant relief (p<0.001) in all the associated symptoms after follow up are 55%, 50%, 50% for *Aruchi, Trushna and Apakarespectively*.

Probable mode of action: As per principles of Ayurveda *Amavata* can be managed by normalizing the *agni* (Biological fire) with the help of *ama pachaka dravyas* (Ingredients which can digest *ama*/toxins), which performs the *deepana* (appetizer) and *pachana* (digestion) actions. Simultaneously a compound which significantly controls and eliminates *prakupita vata dosha* by its *vatanulomana* property. All these qualities are present in the ingredients of panchasama churna.

Pippali and *Shunti* in the form of choorna acts as *deepaka, pachaka* as well as *rasayana* (nourishment) along with *anulomana* property, followed by *trivrut* with its *anulomana,rechana* (purgative), property, where *Souvarchala lavana* is an excellent *ruchaka* (appetizer) and *pachaka*. *Pippali* & *Sunti* are having *rasayana* property which prevents the degeneration.

Probable mode of action of *Valuka Sweda in Amavata*

The *valuka sweda* does three main actions by its *ruksha* and *ushna guna*.

1. *Swedana* helps in digestion of *ama*.
2. *Sroto mukha vishodana* i.e. it helps the *pakwa (*digested*)doshas* to come from *shaka* to *koshta*.
3. *Vayuscha vigraha* i.e. it regulates movements of *vata*.

With these main functions *valuka sweda* does *amapachana, sandhi shoola nasha, sandhi shotha nasha, gatra stabdatha nasha* etc. in the disease *Amavata*.

Anulomana properties of *pippali & Trivrut* and particularly of *Souvarchala lavana* help in keeping the normal physiological function of *annavaha srotas* (G.I. system) and also help in maintaining the *koshtagni*. Thus the combination of contents of *'Panhasama choorna'* has a very good role in management of the disease *Amavata*.

CONCLUSION:

The people leading a sedentary life style and getting indulged in consumption of incompatible food are more prone to get *Amavata*. The drug *Panchasama choorna* was found to be highly significant in providing symptomatic relief when administered along with *valuka sweda*.

Limitations:

Sample size – it is a difficult to draw a generalize conclusion, with a small sample size Study period-it is chronic disease needs long term treatment and follow up

Trial did not include modern parameters especially pathological investigations.

Recommendations for further study:

1. Sample size should be large to draw valid conclusions. 2. When the symptoms usually get aggravates like cold claimants etc should be considered for follow up. 3. All the pathological investigation shoud be included to prove its efficacy through modern parameters.

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