



Research Article

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Clinical efficacy of Ayurvedic formulations used in Amavata (Rheumatoid arthritis): A critical review

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ABSTRACT

Background: Amavata is a disease of Ayurvedic perspective. The major complaints for which patients seeks medical supervision are moderate to severe pain, swelling, tenderness and morning stiffness which restrict joints movement. So the disease Amavata is correlated with Rheumatoid arthritis (RA) due to same presentation of symptoms. **Aim:** To Asses critically on the works carried out in different trials of Amavata. **Material and Methods:** From 2001 to 2017 there are some works have been done on Amavata at various departments of IPGT & RA, GAU, Jamnagar, which were tabulated below in detailed in respect to name of the drugs, their doses, mode of administration, time of administration, Anupana, duration of treatments and numbers of treated patients etc. **Results:** After the course of therapy vary from 2 weeks to 12 weeks, almost all the Ayurvedic formulations i.e. Amritadi Vati, Amrita Bhallataka Avaleha, Simhanada Guggulu, Erand Sneha, Shunthi Kwath, Amrita Bhallataka yoga and Shiva Guggulu used in different trials tabulated below showed highly significant/significant result in all/some subjective/objective criteria. **Conclusion:** Different Ayurvedic formulations used in different trials almost showed highly significant/ significant results in the subjective and objective criteria.

Keywords: Amavata, RA, Amritadi Vati, Erand Sneha, Sparshasahatva.

INTRODUCTION

Amavata can be correlated with Rheumatoid arthritis (RA) due to similarity in presentation of symptoms, Due to busy life style and intake of incompatible diet, life style disorders become more common in present era, Amavata is most common among these. Frequent indulgence of such factors leads to imbalance in Agni i.e. Jatharagni, Dhatvagni as well as Bhutagni. After treating the Ama with appropriate measures for a long duration disease goes to Nirama stage. In 21st century Rheumatoid arthritis (RA) has been more common & distressing among all joints problem. About 0.8% of world population is affected by RA. It is a chronic inflammatory joint disease with multi system involvement. The onset is usually during 4th and 5th decade of life; however people of any age group can get affected in any climate. Rheumatoid arthritis make the affected person unfit for an independent life. RA is a serious disease condition, it very rarely show complete cure [1].

Aim

To review various clinical trial carried out on Amavata.

MATERIALS AND METHODS

Some of clinical works, especially interventional therapy, carried out between 2001- 2017 at various departments of IPGT & RA, Jamnagar were compiled and analyzed to assess efficacy of different formulations in disease Amavata.

Inclusion Criteria

- The clinical trials on Amavata carried out in various department of IPGT between 2001 to 2017
- Trials having only classical formulations/single drug were included in present study.
- Trials having formulations with well-known safety and efficacy were included in the study.
- Trials which were carry out without support of modern medication are included in the study.

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Exclusion Criteria

- Trials conducted in other than IPGT were excluded
- The clinical trials carried out before 2001 and after 2017.
- Trials without classical formulations/single drug were excluded.
- Trials carried out with support of modern medication were excluded.
- Trials having formulations without well-known safety and efficacy were excluded.

Table 1: Scholar name and drugs.

Sr. no.	Name of Scholar (with year)	No. of treated pts.	Drug (with mode of administration, time of administration and Anupana)	Dose	Duration
1	Kumar Rajesh 2001	14	Group A <i>Amritadi Vati</i> [2], Orally, after meal with Luke warm water	4 <i>Vati</i> (500 mg each) TDS	6 weeks
		11	Group B <i>Virechana</i> followed by <i>Amritadi Vati</i> as mentioned in group A	4 <i>Vati</i> (500 mg each) TDS	
2	Dash Babita 2005	10	Group A <i>Amrita Bhallataka yoga</i> [3], orally, after meal with <i>Shunthi Siddha Godugdha</i>	5 gms, BD	8 weeks
		10	Group B Placebo tab (containing <i>Yava Churna</i>), orally, after meal with Luke warm water	2 tab (500 mg each) BD	
3	Sharma Preeti 2006	14	Group A <i>Amrita Bhallataka Avaleha</i> [4], Orally, after meal with Ghee	10 gms, OD	6 weeks
		11	Group B <i>Virechana</i> followed by <i>Amritabhallataka Avaleha</i> orally after meal with Ghee	10 gms, OD	
4	Pandey Shweta 2011	10	Group A <i>Shiva Guggulu</i> [5], Orally, after meal with Luke warm water	3 <i>Vati</i> (500 mg each) BD	8 weeks
		10	Group B <i>Simhnada Guggulu</i> [6], Orally, after meal with Luke warm water	3 <i>Vati</i> (500 mg each) BD	
5	Kharadi S. Pravin 2012	50	Single Group <i>Simhanada Guggulu</i> [7], Orally, after meal with Luke warm water and <i>Brihata Saindhavadi Taila</i> [8], Local Application	<i>Guggulu</i> 3 tabs (500 mg each), <i>Taila</i> 20ml BD	12 weeks
6	Mishra Gauridutt 2017	28	Group A <i>Erand Sneha</i> with <i>Shunthi Kwatha</i> orally, in morning, empty stomach	Oil 10 ml + Decoction 20 ml=30 ml, OD	2 weeks
		25	Group B <i>Erand Sneha</i> , orally, once in a day, in morning, empty stomach with Luke warm water	10 ml, OD	

Criteria for assessment

1) Subjective criteria:

- Improvement in *Sandhishoola*
- Improvement in *Shandhishotha*
- Improvement in *Sandhigraha*
- Improvement in *Sparshasahatwa*

2) Objective criteria:

- **Improvement in walking time:** patients are advised to move 50 meters and time is recorded.

- **Improvement in hand grip:** patients are advised to hold well wrapped non- inflated cuff then air will be filled by pumping of sphygmomanometer up to holding capacity of patient and recorded.

- **Improvement in foot pressure:** patients are advised to stand on weighing machine putting their one leg and raising of opposite leg and vice versa thus weight will be recorded.

RESULTS

The significance/effect of the different trials on subjective parameters—

Table 2: Effect of therapies on *Sandhishoola*

Sr. no.	Group	Mean		Mean difference	Relief %	SD ±	SE ±	t'	P	Remarks
		B.T.	A.T.							
1	Group A	2.51	0.86	1.65	65.73	0.36	0.09	16.72	<0.001	HS
	Group B	2.33	0.69	1.64	67.38	0.47	0.09	17.30	<0.001	HS
2	Group A	2.8	1.3	1.5	53.56	0.71	0.71	6.7	<0.001	HS
	Group B	2.1	1.6	0.5	24	0.53	0.16	2.98	<0.05	S
3	Group A	2.80	1.39	1.42	50.71	0.70	0.19	07.61	<0.001	HS
	Group B	3.73	1.10	2.63	70.51	0.74	0.22	11.77	<0.001	HS
4	Group A	1.43	0.57	0.86	60	0.38	0.14	6.0	<0.001	HS
	Group B	2.1	0.8	1.3	61.90	0.67	0.21	6.09	<0.001	HS
5	Single Group	4.0	2.96	2.04	26	1.63	0.23	6.02	<0.001	HS
6	Group A	3.00	1.88	1.11	37	1.05	0.20	5.49	<0.001	HS
	Group B	2.96	1.60	1.36	45.97	1.07	0.21	6.32	<0.001	HS

BT= before treatment, AT= after treatment, SD= Standard deviation, SE= Standard error, HS= highly significant, S= Significant, IS= Insignificant

Table 3: Effect of therapies on *Sandhishotha*

Sr. no.	Group	Mean		Mean difference	Relief %	SD ±	SE ±	‘t’	P	Remarks
		B.T.	A.T.							
1	Group A	1.73	0.60	1.13	65.31	0.32	0.08	12.82	<0.001	HS
	Group B	1.60	0.48	1.12	70.00	0.19	0.19	19.45	<0.001	HS
2	Group A	2.5	0.8	1.7	68	1.06	1.06	5.0	<0.001	HS
	Group B	1.2	0.8	0.4	8.33	0.48	0.15	1.96	<0.01	S
3	Group A	1.86	0.90	0.96	51.61	0.56	0.15	6.46	<0.001	HS
	Group B	2.17	0.31	1.86	85.71	0.96	0.29	6.43	<0.001	HS
4	Group A	1.6	0.6	1.0	62.5	0.70	0.31	3.16	<0.05	S
	Group B	1.66	0.55	1.11	66.6	0.33	0.11	10.0	<0.001	HS
5	Single Group	3.84	2.28	1.56	27.08	1.42	0.28	5.02	<0.001	HS
6	Group A	1.88	0.92	0.96	50.97	0.75	0.14	6.59	<0.001	HS
	Group B	1.78	0.91	0.87	48.79	0.81	0.17	5.11	<0.001	HS

BT= before treatment, AT= after treatment, SD= Standard deviation, SE= Standard error, HS= highly significant, S= Significant, IS= Insignificant

Table 4: Effect of therapies on *Sandhigraha*:

Sr. no.	Group	Mean		Mean difference	Relief %	SD ±	SE ±	‘t’	P	Remarks
		B.T.	A.T.							
1	Group A	1.67	0.37	1.30	77.84	0.48	0.13	10.00	<0.001	HS
	Group B	1.52	0.28	1.24	81.81	0.43	0.14	9.40	<0.001	HS
2	Group A	1.9	0.6	1.3	6.52	1.16	1.16	3.5	<0.01	S
	Group B	1.4	0.9	0.5	36	0.52	0.21	2.45	<0.05	S
3	Group A	1.38	0.62	0.76	55.07	0.55	0.15	05.18	<0.001	HS
	Group B	2.50	0.69	1.81	72.40	0.61	0.18	9.87	<0.001	HS
4	Group A	1.7	0.57	1.13	66.67	0.69	0.26	4.38	<0.01	S
	Group B	2.0	0.8	1.2	60	0.42	0.13	9.0	<0.001	HS
5	Single Group	3.83	2.66	1.19	30.43	2.20	0.44	6.50	<0.001	HS
6	Group A	1.296	0.519	0.778	60.03	0.75	0.14	5.38	<0.001	HS
	Group B	1.200	0.400	0.800	66.66	0.57	0.11	6.92	<0.001	HS

BT= before treatment, AT= after treatment, SD= Standard deviation, SE= Standard error, HS= highly significant, S= Significant, IS= Insignificant

Table 5: Effect of therapies on *Sparshasahatva*:

Sr. no.	Group	Mean		Mean difference	Relief %	SD ±	SE ±	‘t’	P	Remarks
		B.T.	A.T.							
1	Group A	2.39	0.80	1.59	66.52	0.42	0.11	13.95	<0.001	HS
	Group B	2.20	0.66	1.54	70.45	0.52	0.15	9.77	<0.001	HS
2	Group A	1.9	0.6	1.3	62.5	0.67	0.67	4.74	<0.001	HS
	Group B	1.6	0.8	0.8	8.50	0.67	0.2	3.28	<0.01	S
3	Group A	1.80	0.88	0.92	51.11	0.62	0.17	5.56	<0.001	HS
	Group B	2.56	0.99	1.57	61.33	0.90	0.27	5.78	<0.001	HS
4	Group A	2.3	0.8	1.5	62.22	0.71	0.22	6.71	<0.001	HS
	Group B	2.0	0.71	1.29	64.28	0.48	0.18	6.97	<0.001	HS
5	Single Group	4.16	2.0	2.16	52	1.33	0.38	5.96	<0.001	HS
6	Group A	2.11	1.03	1.07	50.87	0.95	0.18	5.82	<0.001	HS
	Group B	1.60	0.80	0.80	50%	0.40	0.08	9.79	<0.001	HS

BT= before treatment, AT= after treatment, SD= Standard deviation, SE= Standard error, HS= highly significant, S= Significant, IS= Insignificant

The significance/effect of the different trials on objective parameters

Table 6: Improvement in walking time

Sr. no.	Group	Mean		Mean difference	Relief %	SD ±	SE ±	‘t’	p	Remarks
		B.T.	A.T.							
1	Group A	27.42	22.85	4.57	16.66	2.87	0.76	5.95	<0.001	HS
	Group B	27.44	22.38	5.06	18.44	2.94	0.98	5.16	<0.001	HS
2	Group A	48.1	35.9	12.2	25.36	8.64	2.73	4.47	<0.01	S
	Group B	41.3	43.1	-1.8	5.32	7.3	2.31	2.1	<0.1	IS
3	Group A	17.50	14.43	3.07	17.54	2.13	0.57	5.38	<0.001	HS
	Group B	28.18	15.73	12.54	44.18	9.34	2.82	4.42	<0.01	S
4	Group A	2.0	1.0	1.0	50	1.0	0.57	1.7	<0.01	IS
	Group B	1.75	0.75	1.0	45.71	0.44	0.2	4.0	<0.05	S
5	Single Group	48.1	35.9	12.2	25.36	8.64	2.73	4.47	<0.01	S
6	Group A	42.00	38.78	3.214	7.5%	5.087	0.961	3.343	0.002	S
	Group B	40.26	36.50	3.769	9.35%	3.154	0.618	6.095	<0.001	HS

BT= before treatment, AT= after treatment, SD= Standard deviation, SE= Standard error, HS= highly significant, S= Significant, IS= Insignificant

Table 7: Improvement in hand grip

Sr. no.	Group	Mean		Mean difference	Relief %	SD ±	SE ±	‘t’	p	Remarks
		B.T.	A.T.							
1	Group A	87.57	98.78	-11.21	12.80	12.31	3.29	3.40	<0.01	S
	Group B	62.9	77.4	-14.5	23.05	13.22	3.98	3.64	<0.01	S
2	Group A	120.7	159.7	-39.0	31.98	120.5	38.13	2.05	<0.1	IS
	Group B	156.75	149	7.75	5.20	25.67	8.12	1.38	<0.1	IS
3	Group A	66.95	127.2	60.29	47.38	42.26	11.29	5.34	<0.001	HS
	Group B	54.30	88.58	34.28	38.70	19.36	5.84	5.88	<0.001	HS
4	Group A	1.14	0.57	0.57	50	0.53	0.20	2.82	<0.01	IS
	Group B	2.4	1.5	0.9	37.5	0.31	0.1	9.0	<0.001	HS
5	Single Group	62.9	77.4	-14.5	23.05	13.22	3.98	3.64	<0.01	S
6	Group A	151.78	166.0	-14.21	9.36	19.84	2.65	-5.36	<0.001	HS
	Group B	168.40	186.6	-18.20	10.80	60.90	8.61	-2.11	0.040	S

BT= before treatment, AT= after treatment, SD= Standard deviation, SE= Standard error, HS= highly significant, S= Significant, IS= Insignificant

Table 8: Improvement in foot pressure

Sr. no.	Group	Mean		Mean difference	Relief %	SD ±	SE ±	‘t’	p	Remarks
		B.T.	A.T.							
1	Group A	27.42	22.85	4.57	16.66	2.87	0.76	5.95	<0.001	HS
	Group B	13.3	16.8	-3.5	26.31	2.17	0.68	5.09	<0.001	HS
2	Group A	17.4	22.4	-5.0	28.7	8.27	2.61	3.8	<0.01	S
	Group B	17.6	18.2	-0.6	3.4	3.62	1.14	8.36	<0.05	S
3	Group A	25.96	30.50	4.54	14.89	2.71	0.72	6.27	<0.001	HS
	Group B	20.59	30.77	10.18	33.16	6.48	3.32	5.21	<0.001	HS
4	Group A	1.0	0.66	0.34	39.13	0.31	0.1	9.0	<0.01	S
	Group B	2.3	1.4	0.9	39.13	0.31	0.1	9.0	<0.001	HS
5	Single Group	2.96	4.46	-1.50	50.50	1.30	0.18	-0.73	0.003	S
6	Group A	62.25	63.00	-0.74	1.19%	1.82	0.24	-3.04	0.004	S
	Group B	60.30	59.60	1.40	2.32%	10.80	1.56	0.89	0.373	IS

BT= before treatment, AT= after treatment, SD= Standard deviation, SE= Standard error, HS= highly significant, S= Significant, IS= Insignificant

DISCUSSION

The spectral concept of health of an individual fluctuates within a range varying from optimum well-being to various degrees of dysfunction. The transition from good health to dysfunction is called disease. One such disease is *Amavata*, which is characteristically a chronic disorder chiefly associated with *Sandhishoola*, *Sandhishotha*, *Sandhigraha* and *Sparsasahatva*. The intensity of pain is of the high grade in comparison to other diseases in *Amavata* during a period of acute exacerbation. All symptoms mentioned are characteristic of *Ama* & without treating *Ama* it is not possible to treat the disease, so in this trial drugs having *Ushna*, *Tikshna*, *Deepan*, *Pachan*, *Vata-Kapha Shamak*, *Shothhara* properties were used and gave better result.

- *Amritadi Vati* showed highly significant result in all the subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sandhigraha*, *Sparsasahatva* and objective criteria like walking time and foot pressure in both group whereas significant result in hand grip in both group which showed the effectiveness of the *Amritadi Vati* in this trial.
- *Amrita Bhallataka Yoga* showed highly significant result in subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sparsasahatva* whereas significant result in *Sandhigraha* and significant result in objective criteria like walking time and foot pressure while insignificant result in hand grip which showed the effectiveness of the *Amrita Bhallataka Yoga* in this trial.
- *Amrita Bhallataka Avaleha* showed highly significant result in all the subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sandhigraha*, *Sparsasahatva* and objective criteria like hand grip and foot pressure in both group and in walking time of group A whereas significant result in walking time of group B which showed the effectiveness of the *Amrita Bhallataka Avaleha* in this trial.
- Shiva Guggulu showed highly significant result in the subjective criteria like *Sandhishoola*, *Sandhishotha* and *Sparsasahatva* while significant result in *Sandhishotha* and *Sandhigraha* whereas insignificant result in objective criteria like walking time and hand grip while significant result in foot pressure which showed the effectiveness of Shiva Guggulu used in this trial.
- Simhanada Guggulu showed highly significant result in all the subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sandhigraha*, *Sparsasahatva* and objective criteria like hand grip and foot pressure whereas significant result in walking time which showed the effectiveness of Simhanada Guggulu used in this trial (Trial conducted by Pandey Shweta in 2011 as mentioned above).
- Simhanada Guggulu showed highly significant result in all the subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sandhigraha* and *Sparsasahatva* while significant result in all the objective criteria like walking time, hand grip and foot pressure which showed the effectiveness of Simhanada Guggulu used in this trial (Trial conducted by Kharadi Pravin in 2012 as mentioned above).
- *Erand Sneh* and *Shunthi Kwath* showed highly significant result in all the subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sandhigraha* and *Sparsasahatva* while highly significant result in the objective criteria like hand grip whereas significant result in walking time and foot pressure which showed the effectiveness of *Erand Sneh* and *Shunthi Kwath* used in this trial.
- *Shunthi Kwath* showed highly significant result in all the subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sandhigraha* and *Sparsasahatva* while highly significant result in the objective criteria like walking time whereas significant result in hand grip and insignificant result in foot pressure which showed the effectiveness of *Shunthi Kwath* used in this trial.
- So almost all the *Ayurvedic* formulations i.e. *Amritadi Vati*, *Amrita Bhallataka Avaleha*, *Simhanada Guggulu*, *Erand Sneh* and *Shunthi Kwath*, *Amrita Bhallataka yoga* and *Shiva Guggulu* used in different trials tabulated here showed highly significant/significant result in all/some subjective/objective criteria.

- All the above trials were carried out for short duration. The duration varied from 2 weeks to 12 weeks. This is not enough time to provide complete relief from disease *Amavata*.

CONCLUSION

Different *Ayurvedic* formulations used in different trials almost shows highly significant/ significant results in the subjective criteria like *Sandhishoola*, *Sandhishotha*, *Sandhigraha* and *Sparsasahatva* and objective criteria like walking time, hand grip and foot pressure, thus enhance the quality of life and give better cure to greater extend of patients of *Amavata*.

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