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# A COMPARATIVE CLINICAL APPROACH OF PANCHASAMA CHURNA AND ERAND PAKA IN THE MANAGEMENT OF AMAVATA W.S.R. TO RHEUMATOID ARTHRITIS

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## Abstract

In Ayurveda this disease described as Amavata, first in Madhav Nidan. This disease is dominated pathologically by Ama and Vata. Due to different causative factors there is improper metabolism of food which results formation of an intermediate product which is toxic in nature known as Ama. This Ama, if not excreted from the body, it absorbed in the body and produce pain, inflammation and stiffness in joints. Rheumatoid Arthritis (R.A.) is a chronic systemic inflammatory disease of unknown cause, chiefly affecting synovial membranes of multiple joints. According to Ayurveda, freedom from disease is not only health to be healthy, a person should be happy physically, mentally, socially and also spiritually. Drastic change in life style of human and pollution have not only created social problems but also have a great impact over health which has lead to exacerbation of certain disorders which is Amavata (Rheumatoid Arthritis) is one of them. Pain relating to body or mind or both has been an obstacle in the pathway leading to happy life. Sometimes pain can be so severe as to disable the person, cripple and make him confined to bed. Joint disorder, particularly Amavata (Rheumatoid arthritis) is a leading cause of disability. Amavata is common musculoskeletal conditions affecting individuals across the country. Amavata is one of the chronic diseases mainly affecting the joints with pain of severe degree being the main symptom with progressive destruction of the joints with crippling and deformities, arthritis poses an unavoidable clinical situation and prolonged morbidity warranting an active care. It is seen most commonly in the patients due to their changing dietetic habits, social structure, environment and mental stress and strain. Ama and Vata are the two main pathognomic factors held responsible for causation of Amavata. Derangement of Agni that is Agnimandya is a chief factor responsible for the formation of Ama, which is main pathological entity of the disease. The etiological factor for both vitiation of Vata and formation of Ama are responsible for the manifestation of the disease. General management of Amavata includes Nidan Parivarjan/ elimination of cause, Langhan, Deepan, Pachan to promote Agni, Appropriate Elimination of Ama by Selective Sodhan, Dietary Restrictions advocating Katu, Tikta, Usna, Laghu and Use of Medication for Pain & Inflammation, Snehana, Swedan, Vasti in chronic Niramawastha, Local care of Inflamed Joints, Exercise & Physiotherapy, Samshaman Treatment with specific drugs, Rehabilitative procedures and long follow-ups.

Keywords: - Amavata, , Musculoskeletal, Rheumatoid Arthritis, Rehabilitative, Samshaman,

## I. INTRODUCTION

Amavata is one of the chronic diseases mainly affecting the joints with pain of severe degree being the main symptom with progressive destruction of the joints with crippling and deformities, arthritis poses an unavoidable clinical situation and prolonged morbidity warranting an active care. It is seen most commonly in the patients due to their changing dietetic habits, social structure, environment and mental stress and strain. Ama and Vata are the two main pathognomic factors held responsible for causation of Amavata. Derangement of Agni that is Agnimandya is a chief factor responsible for the formation of Ama, which is main pathological entity of the disease. The etiological factor for both vitiation of Vata and formation of Ama are responsible for the manifestation of the disease. Amavata is a disease which is not stated in Brihattrayee as a separate chapter. It was described by Madhavakara in 9th Century AD with well defined aetiopathogenesis and clinical presentation with specific emphasis on Chronic Enteropathy, Mandagni and Ama playing the central role. This condition is strikingly comparable to Rheumatoid Arthritis as known today. Excessive consumption of Nidana of Amavata in pre-existing stage of Mandagni leads to formation of Ama and simultaneous vitiation of Tridosha, especially the Vata Dosha. The samprapti originates initially from the

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Annavaha Srotasa and in due course spreads to the other Srotasa mainly Rasavaha, Asthivaha and Majjavaha Srotasa. The Dusyas mainly involved in this disease are Rasa, Mansa, Asthi and Majja. It is mostly the disease of Madhyama Roga Marga with Chirakari Swabhava. Sandhi is the main site of Abhivyakti of Lakshana. Ama, under influence of vitiated Vata, comes in Sleshamasthana mainly in sandhis and gets lodged there. Sandhishoola, Sandhishotha, Stabdhata and Sparshasehatva are the cardinal features of Amavata. The disease runs a chronic course of Jadya, Sankocha, Angavaikalya Mansakshaya etc. are responsible for crippling of the patients. Other constitutional symptoms like Alasya, Aruchi, Balabhransha, Vivandha, Apakti etc. are normally found in the patients of Amavata. Chakrapani was the pioneer of lay down the principle and line of treatment of Amavata. Rukshasweda and Upnaha were added afterward by Bhavaprakasha and Yogaratnakar to the measures mentioned by Chakrapani. Ama and Vata are the two chief pathognomic factors in production of Amavata. The properties of Ama and Vata lie on opposite pole of each other. Only the Sheeta Guna is common to both. These are the things which come in across while treating the Amavata, because any measure adopted will principally appose one another. So a very careful approach can only benefit the patient. The line of treatment laid down by Chakrapani denotes firstly the Pachana of Ama, then restoration of Agni and finally control of Vata Dosha.

General management of Amavata includes -

- 1. Nidan Parivarjan/ elimination of cause.
- 2. Langhan, Deepan, Pachan to promote Agni.
- 3. Appropriate Elimination of Ama by Selective Sodhan.
- 4. Dietary Restrictions advocating Katu, Tikta, Usna, Laghu.
- 5. Use of Medication for Pain & Inflammation.
- 6. Snehana, Swedan, Vasti in chronic Niramawastha.
- 7. Local care of Inflamed Joints.
- 8. Exercise & Physiotherapy.
- 9. Samshaman Treatment with specific drugs.
- 10. Rehabilitative procedures and long follow-ups.

Due to their similar mode of presentation the term rheumatoid arthritis can be broadly grouped under heading of Amavata.

Rheumatoid Arthritis is associated with reduced quality of life, decreased life expectancy, and has an adverse financial impact on the individual and society. The risk of cardiovascular mortality is twice that of the general population. The disease rheumatoid arthritis is chronic in nature and affects mostly the middle aged group. It is one of the common debilitating diseases by the virtue of its chronicity and implications. The onset of disease is frequent during 4th and 5<sup>th</sup> decade of life with 80% of patients developing the disease between 35 -50 years of age. Community prevalence study shows that female are more sufferers than male and the ratio of occurrence between them is 3:1. About 10% of the patients are affected first degree relative. A genetic susceptibility to altered immune responses probably is important in Rheumatoid arthritis. Urgent management is important because early recognition and intervention has been shown to improve outcome. The use of traditional medications in combination, and the new biologic therapies have revolutionized the paradigm of rheumatoid arthritis treatment in recent years. Disease modifying anti-rheumatic drugs (DMARDs), particularly when used early, change the course of the disease and are proven to reduce damage and associated disability. The aims of Rheumatoid arthritis treatment are not only symptom control during active disease flares, but also suppression of disease activity in order to prevent permanent joint damage.

Panchasama Churna has been specifically mentioned for the treatment of Amavata. It comprises of Shunthi (*Zingiber officinalis*), Haritaki (*Terminalia chebula*), Krishna (*Piper longum*), Trivrit (*Operculina turpethum*) and Saurvachala lavana (Sochal salt) are having Vata-kapha shamaka, Agnideepana, Pachana, Srotovishodhana and Vatanulomaka properties. Erand Paka (*Ricinus communis*) balances Vata dosha mainly used in the treatment of Vata diseases, inflammation, rheumatoid disorder, Low backache, spondylosis etc. Therefore there is a need to evaluate the efficacy of Panchasama Churna in the management of Amavata. Thus considering above facts this study "A comparative clinical Approach of Panchasama Churna and Erand Paka in the management of Amavata w.s.r. to Rheumatoid Arthritis" is being planned.

## **II. PROBLEM STATEMENT**

Rheumatoid arthritis (RA), an auto-immune inflammatory disease is one of the challenging conditions for the physicians to andle due to its chronicity, incurability, complications, morbidity, etc. It has worldwide distribution and involves all ethnic groups. Depending on the specific definition, the prevalence of RA is estimated to be between 0.3% and 1.5% in North America and its prevalence in India has been estimated to be similar to that in the West. It causes a great deal of pain and suffering and patients with this disease are unable to work within 5 years of its onset and patients with severe forms of the disease die 10–15 years earlier than expected. Thus, RA represents a significant societal problem justifying large efforts to improve its treatment. While allopathic treatment of RA is improving, remission remains rare, and treatment remains unsatisfactory. In spite of potent anti-inflammatory agents and powerful immunosuppressive agents, its prognosis is not good, as these drugs have certain limitations including dependency and other side effects restricting the quality of life. Considering these inconveniences, alternatives are being searched from traditional systems. Ayurveda through its armamentarium can provide leads in the management of this condition that is similar to *Amavata* in its clinical presentation. Drugs such as Panchasama Churna, Erand Paka , Simhanada guggulu, Rasnasaptaka kwatha, Vata gajankusha rasa, Bruhat vata chintamani, Amavatari rasa etc. are said to be efficacious in this condition. In this case study, efficacy of Panchasama Churna and Erand Paka in a diagnosed case of Amavata (Rheumatoid Arthritis) is presented. Thus considering above facts this study "A comparative clinical Approach of Panchasama Churna and Erand Paka in the management of Amavata w.s.r. to Rheumatoid Arthritis" is being planned.

#### **III. RESEARCH OBJECTIVES**

- The objectives of the study are:-
- 1. To establish etiopathogenesis of Amavata
- 2. To evaluate the efficacy of Panchasama Churna in the management of Amavata.
- 3. To evaluate the efficacy of Panchasama Churna in Amavata at symptomatic relief.
- 4. To provide a reliable, cost effective Ayurvedic treatment for Amavata.
- 5. To carryout comprehensive literary work covering classical and modern aspect of Amavata.
- 6. To have an in depth knowledge of Amavata in comparison with Rheumatoid Arthritis.
- 7. To be aware of deformity & complications of Amavata.
- 8. To have knowledge for diagnosis of Amavata according to Ayurveda as well as Modern science.

## **IV. LITERATURE REVIEW**

Madhav Nidan recognized Amavata as a separate specific disease for the first time and described its etiology, pathogenesis, signs, symptoms, classification and prognosis. Later many authors have recognized Amavata as a separate disease such as Vrindamadhava, Chakradatta, Vangasena, Gada Nigraha, Sharangadhara, Rasaratna Samuchaya, Bhavaprakasha, Yoga Ratnakar, Yoga Tarangini and Bhaisajya Ratnavali.

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## V. RESEARCH METHODOLOGY

The research study entitled "A comparative clinical approach of Panchasama Churna and Erand Paka in the management of Amavata w.s.r. to Rheumatoid Arthritis" is a randomized, open label, observational comparative clinical study to find the effectiveness of Panchasama Churna and Erand Paka in Amavata w.s.r. to Rheumatoid Arthritis.

#### 4.1 Source of Data

- 30 patients of Amavata will be selected from OPD and IPD of Desh Bhagat Ayurvedic College & Hospital, Mandi Gobindgarh (Punjab).
- Patient who are fulfilling the criteria for diagnosis and inclusion will be included in this study irrespective of sex, caste, religion etc.

#### 4.2 Inclusion Criteria

- Patients with classical features of Amavata explained in texts.
- Patients of any socio-economic status, both sexes and all ethnic origins.
- Patients with age group of 20-60 years.
- Fresh cases of Amavata

#### 4.3 Exclusion Criteria

- Patients with uncontrolled metabolic and other systemic disorders.
- Chronic cases with permanent deformity for more than 10 years
- Age less than 20 years and more than 60 years

#### 4.4 Withdrawal Criteria

- Personal matters
- Aggravation of complaints
- Inter current illness
- Any other difficulties
- Leave against medical advice

#### 4.5 Criteria for Selection of Drug

- Panchasama Churna In Sharangadhara Samhita, Madhyam Khanda, Adhyaya 6:93-94 1/2 Panchasama Churna has been mentioned in the treatment of Amavata. It contains Shunthi (*Zingiber officinalis*), Haritaki (*Terminalia chebula*), Krishna (*Piper longum*), Trivrit (*Operculina turpethum*) and Saurvachala lavana (Sochal salt). Also, the raw drugs are easily available and low cost compared to other therapy. Hence, these drugs will be selected for research study. Treatment Schedule: Churna – 3g along with warm water twice a day after food.
- 2. Erand Paka In Yogratnaka Vatavyadhi Chikitsa 468 Erand Paka has been mentioned in the treatment of Vata diseases. It contains Vatari Beeja (*Ricinus communis*), Ksheera (Cow milk), Ghrita (Cow ghee), Khand (Sugar candy), fine powder of Shunti (*Zingiber officinalis*), Maricha (*Piper nigrum*), Pippali (*Piper longum*), Twak (*Cinnamomum zeylanicum*), Patra (*Cinnamomum tamala*), Nagakeshara (*Mesua ferrea*), Chitraka (*Plumbago zeylanica*), Pippali mool (*Piper longum*), Chavya (*Piper chaba*), Dhanyaka (*Coriandrum sativum*), Mishreya Shati (*Curcuma zeodaria/Hedychium spicatum*), Bilva (*Aegle marmelos*), Dipyaka (*Trachyspermum roxburghianum*), Jiraka (*Cuminum cyminum*), Krishna jiraka (*Nigella sativa*), Haridra (*Curcuma longa*), Daruharidra (*Berberis aristata*), Ashwagandha (*Withania somnifera*), Bala (*Sida cordifolia*), Hapusha (*Juniperus communis*), Vidaga (*Embelia ribes*), Pushkara (*Inula racemosa*), Kushta (*Saussurea lappa*), Haritaki (*Terminalia chebula*), Vibhitaki (*Terminalia bellirica*), Daru (*Cedrus deodara*), Vellari (*Commiphora myrra*) Shatavari (*Asparagus racemosus*).

Treatment Schedule – Paka 5-10 gm along with warm water/milk twice a day after food.

## **VI. DRUG REVIEW**

The W.H.O.'s definition regarding the drug says that "Any substance or product that is used or interned to be used to modify or explore the physiological systems or pathological status for the benefit of the recipient." It is undisputable that the drug is as old as the disease. The ailments have been man's heritage since the beginning of this existence and search for effective remedies to combat it, is perhaps equally old.

The main objective is to evaluate the effect of Panchasama Churna and Erand Paka in the management of Amavata w.s.r. to Rheumatoid Arthritis. In Sharangadhara Samhita, Madhyam Khanda, Adhyaya 6:93-94 1/2 Panchasama Churna has been mentioned in the treatment of Amavata. In Yogratnaka Vatavyadhi Chikitsa 468 Erand Paka has been mentioned in the treatment of Vata diseases. The details of the herbs included in drugs, their botanical names, family, part used, quantity/ratio, pharmacological properties, preparation of drug, dose, indication/uses and side effects are described here.

#### A) PANCHASAMA CHURNA

				J	
No.	Name	Scientific name	Family	Parts used	Ratio
1	Shunti	Zingiber officinalis	Zingiberaceae	Rhizome	1 part
2	Haritaki	Terminalia chebula	Combretaceae	Fruit	1 part
3	Krishna	Piper longum	Piperaceae	Fruit	1 part
4	Trivrit	Operculina turpethum	Convolvulaceae	Root	1 part
5	Saurvachal Lavana	Potassium nitrate (unaqua sodium chloride)	-	Salt	1 part

#### Table 1 : Ingredients

**Method of Preparation -** The above ingredients are powdered separately and mixed together in specified quantity. **Indication -** Flatulence or bloating, loss of appetite, pain abdomen and piles.

Dose - 1 to 3 grams three times daily before or after food.

Anupana - Along with warm water

**Properties -**

Rogakarma - Adhmana, Arsha, Shula, Amavata and Udara roga

**Doshakarma -** Vatakaphahara

Agnikarma - Deepana, Pachana

Other karma - vatanulomaka and Srothoshodhana

Side effects - Heavy dose may include mild gastric irritation. Used with caution in hypertensive patients as it contain salt.

## B) ERAND PAKA

No.	Name	Scientific/English name	Family	Parts used	Ratio
1	Erand	Ricinus communis	Euphorbiaceae	Seed	768g
2	Ksheer	Cow's milk	-	Milk	6.144 L
3	Ghrita	Cow's ghee	-	Ghee	384g
4	Khand	Saccharum officinarum	Graminae	Sugar candy	1.532g
		12 gram of each of fine power of	f following ingredients	3	
5	Shunti	Zingiber officinalis	Zingiberaceae	Rhizome	1 part
6	Marich	Piper nigrum	Piperaceae	Fruit	1 part
7	Pippali	Piper longum	Piperaceae	Fruit	1 part
8	Ela	Elettaria Cardamomum	Scitamineae	Seed	1 part
9	Twak	Cinnamomum Zeylanicum	Lauraceae	Stem bark	1 part
10	Patra	Cinnamomum tamala	Lauraceae	Leaf	1 part
11	Nagkeshar	Mesua ferrea	Guttiferae	Stamens	1 part
12	Chitrak	Plumbago zeylanica	Plumbaginaceae	Root bark	1 part
13	Pippalimool	Piper longum	Piperaceae	Root	1 part
14	Chavya	Piper <mark>chaba</mark>	Piperaceae	Root	1 part
15	Dhanyaka	Coria <mark>ndrum s</mark> ativum	Umbelliferae	Fruit	1 part
16	Mishreya	Foeni <mark>culum vu</mark> lgare	Umbelliferae	Fruit	1 part
17	Shati	Hedychium spicatum	Zingiberaceae	Rhizome	1 part
18	Bilva	Aegle marmelos	Rutaceae	Root	1 part
19	Dipyaka	Trachyspermum roxburghianum	Umbelliferae	Fruit	1 part
20	Jiraka	Cuminum cyminum	Umbelliferae	Fruit	1 part
21	Krishna Jiraka	Nigella sativa	Apiaceae	Fruit	1 part
22	Haridra	Curcuma longa	S <mark>citamineae</mark>	Rhizome	1 part
23	Daruharidra	Berberis aristata	Berberidaceae	Stem	1 part
24	Ashwagandha	Withania somnifera	Solanaceae	Root	1 part
25	Bala	Sida cordifolia	Malvaceae	Root	1 part
26	Patha	Cissampelos pareira	Menispermaceae	Root	1 part
27	Hapusha	Juniperus communis	Pinaceae	Root	1 part
28	Vidanga	Embelia ribes	Myrsinaceae	Fruit	1 part
29	Pushkara	Inula racemosa	Asteraceae	Root	1 part
30	Gokshur	Tribulus terrestris	Zygophyllaceae	Fruit	1 part
31	Kushta	Saussurea lappa	Asteraceae	Root	1 part
32	Haritaki	Terminalia chebula	Combretaceae	Fruit	1 part
33	Vibhitaki	Terminalia bellirica	Combretaceae	Fruit	1 part
34	Amalaki	Emblica officinalis	Phyllanthaceae	Fruit	1 part
35	Daru	Cedrus deodara	Pinaceae	Heart wood	1 part
36	Vellari	Callicarpa Macrophylla	Verbenaceae	Stem	1 part
37	Abha	Acacia nilotica	Leguminosae	Stem bark	1 part
38	Aluka	Dioscorea bulbifera	Dioscoreaceae	Seed	1 part
39	Shatavari	Asparagus racemosus	Liliaceae	Root	1 part

**Erand Paka** is an Ayurvedic paka and comes under Avaleha Kalpana. Its preparation is also available in Brihat Nighantu Ranakar under the name of Vatari Paka. The formula mentioned in Yogratnakara has been adopted in the official Ayurvedic Formulary of India. Though the Eranda and its various forms are in vogue to treat the Vata disorders in general and Amavata in particular but this Eranda Paka has not got its due recognition. (*The Ayurvedic formulary of* 

India, Part II, First English Edition, Published by Ministry of H&F.W. Government of India, Department of ISM&H, 2000 page 51-52)

**Preparation** - Castor seeds skin is removed added to milk, heated, cooked till a paste (Khoya) is formed. Sugar and ghee are also added and heated till semisolid consistency appeared. Allowed to cool, while it is cooling down, rest of the ingredients are added and stirred well.

**Dose -** 5-10 gm once or twice a day before or after food for a period of up to 2-4 months.

**Karma -** Amapachana, Anulomana, Deepan, Kaphavatahara, Pachana, Shothahar, Vedanasthapana, Virechaka. **Biomedical** Action - Analgesic, anti-inflammatory, antioxidant, antirheumatic, carminative, laxative, deobstruent.

Uses - It is used in the treatment of Vata diseases, abdominal lump, arthritis, cervical spondylosis, shula, Vibandha, Anaha, Gout, Hernia, inflammation of scrotum,

Hanustambha, Muscular pain, Shobha, Bastishula, Arsha, Amavata, Urograha, Katigraha, hemiplegia. It gives strength to the body. It has laxative action and gives relief in constipation.

## Side Effects -

- 1. Take this medicine in precise dose and for limited period of time.
- 2. People with diabetes mellitus should take cautiously as it contains sugar candy.
- 3. Overdose may cause gastritis, burning sensation and irritation.
- 4. It is hot in potency and contains Erand as major ingredient should take under medical supervision in case of pregnancy.

## VII. DIAGNOSTIC CRITERIA

Patients having general features of Amavata like Angamarda, Aruchi, Trishna, Alasya, Gaurava, Klama, Apaka, Jwara and localised symptoms related to joints.

The base of criteria led down by American Rheumatism Association will also taken into consideration as follows -

- \* Early morning stiffness > 1 hour
- \* Arthritis of three or more joints
- \* Arthritis of hand joints
- \* Symmetrical arthritis
- \* A positive serum Rheumatoid Factor (R.A. Test)
- \* Typical Radiological changes
- Diagnosis of Rheumatoid Arthritis made with 4 or more criteria.

**Diet Regimen** - While prescribing the diet of the patients, concept of Pathya-Apathya related to Ama was kept in mind; light diet was advised as per the status of Agni.

**Research Design:** It is an observational clinical study, patients will be assign into three group consisting of 10 patients each excluding dropouts with pre, mid and post test study design. The patients will be allocated through the use of ballots or coin toss.

- Group A Patients will be treated with Panchasama churna
- **Group B** Patients will be treated with Erand Paka
- Group C Patients will be treated with Panchasama churna and Erand Paka

**Duration of study** – 60 days

Assessment and follow up – The assessment of the patients will be done at the interval of 15 days, 30days, 45 days and the follow up will be done two month after completion of treatment.

## **Criteria for Assessment**

The assessment will be made before and after the treatment on scoring of signs and symptoms of Amavata. Results will be analyzed statistically as per the assessment chart.

Instrumentation: Scoring pattern will be developed according to severity of symptoms.

## Symptoms related to joints -

Joint Pain

Joint	1 am -		
	0	:	No pain
	1	:	Mild pain of bearable nature, comes occasionally
	2	:	Moderate pain, but no difficulty in joint movement
	3	:	Severe pain, difficulty in joint movement
Swelli	ng of the	joint –	
	0	:	No swelling
	1	:	Slight swelling
	2	:	Moderate swelling
	3	:	Severe swelling
Tende	erness of	the joints	-
	0	:	No tenderness
	1	:	Subjective experience of tenderness
	2	:	Wincing of face on pressure
	2		

3 : Resist to touch

G

XA/XA/XA/	ort ora
	ULUUI M

Stiffnoog of the joint

Summess of th	e joint -	
0	:	No stiffness or stiffness lasting for 5 min
1	:	Stiffness lasting for 5 min to 2 hours
2	:	Stiffness lasting for 2 to 8 hours
3	:	Stiffness lasting for more than 8 hours
Shifting of joi	int pain –	
0	:	No shifting of joint pain
1	:	Occasional shifting of joint pain
2	:	Mild shifting of joint pain
3	:	Moderate shifting of joint pain
Warmth of th	e joint –	
0	:	Normal temperature
1	:	Mild temperature
2	:	Moderate temperature
3	:	Raised temperature when compared to the normal
<b>Restriction of</b>	movemen	its of the joint –
0	:	No restriction of joint movement
1	:	Mild restriction of joint movement
2	:	Moderate restriction of joint movement
3	:	Complete restriction of joint movement
Other sympto	ms score -	_
0	:	No change
1	:	Symptoms present before starting the treatment

Symptoms present before starting the treatment Any improvement in symptom after the treatment :

Complete remission of symptom after treatment •

Other symptoms are Jwara (Fever), Shirshool (Headache), Nidranasha (Insomnia), Kandu (Itching), Daha (Burning sensation), Stemitya, Bahumutrata (Polyurea), Brahm (Vertigo), Hridayagraha, Angagraha, Gaurav (Heaviness), Alasya (Drowsiness), Mukhaprasek (Stomatitis), Aruchi (Anorexia), Trishna (Thirst), Kshudhanasha (Loss of appetite), Chardi (Vomiting), Antrakujan, Vibandha (Constipation), Kukshishool (Backache), Anaha.

#### Functional Assessment -

2

3

Walking $I_{1me} = I_{1me}$ taken to wa	alk a distance of X Metres
1.  valking find = 1  mic taken to we	in a distance of o Miches

Walking	g Time – Time	e tal	ken	to wal	k a	dis	tan
0	:	15	-20	sec.			
1	:	21	-30	sec.			
2	:	31	-40	sec.			
3	:	> 4	40 s	ec.			

Grip strength – ability to compress an inflated ordinary sphygmomanometer cuff 2.

pottength	uonny	to compress an min
0 :		200mmHg or more
1 :		199-120 mmHg
2 .		119-70 mmHg

-	 117 /0 1111115
3	under 70 mmHg

Foot pressure – ability of patients to press a weighing machine 3.

	-		-	
:		25	-21	kg
•		20	-16	kσ

- : 15 -10 kg
- < 10 kg :

4. General functional capacity

0 1 2

3

1

0 Complete ability to carry on all routine duties :

- Adequate normal activity despite slight difficulty in joint movement : 2
  - Few activities are persisting but patient can take care of himself :
- 3 Few activities are persisting and patient requires an attendant to take care of himself/ Patients : are totally bed ridden

Pathological Investigations - C-reactive protein (CRP), Erythrocyte Sedimentation Rate (ESR), Rheumatoid Factor (RF) and Antinuclear Antibody (ANA), Anti-cyclic citrullinated (anti-CCP)

Radiological Investigations – X-ray, Joint aspiration to rule out other pathological conditions.

K

20

## **Disease Activity Grade**

Degree of disease activity calculated on the basis of criteria laid down by American Rheumatism Association (ARA-1967)

No.	Grade	0	1	2	3
1	Morning stiffness	5 min or less	5 min :- 2 hrs	2-8 hrs	8 hrs or more
2	Fatigue	None	Works full time despite some fatigue	Patient must interrupt work to rest	Fatigued at rest
3	Pain	None	On movement only	At rest	Wakes patient from sleep
4	Patients estimate	Fine	Almost well	Pretty good	Pretty good
5	General function	Full activity without difficulty	Most activity but with difficulty	Few activities, cares for self	Little self care; mainly bed ridden
6	Grip strength	200mm of Hg or more	195-120 mm of Hg	115-70 mm of Hg	Under 70 mm of Hg
7	Spread of joint	None	0-50	51-100	Above 100
8	ESR	0-20	20-35	35-50	Above 50
9	Haemoglobin	12.5 gm% or more	12.4-11 gm%	10.9-9.5gm%	Less than 9.5gm%
10	Physician estimate	Inactive	Minimally active	Moderately active	Severely active

#### **Table 3: Disease Activity Grade**

## VIII. PRESENTATION OF DATA

The data recorded and compiled from this comparative clinical study was sorted and processed further by subjection to varied statistical methods and presented under the following headings.

- A. Demographic data
- B. Evaluating disease Data
- C. Result of the Therapies
- D. Statistical analysis of the clinical parameters

#### STATISTICAL ANALYSIS

The statistical analysis of the total effects of therapies was based on 't-test' application. The significance was discussed on the basis of Mean score, Standard Deviation, Standard Error, 't' value and P value. The effects of therapies of individual signs and symptoms were analyzed and the obtained results were interpreted as :- (P Value summary = \*)

ns	P > 0.05		Not Significant
*	P < 0.05	-	Significant
**	P < 0.01	-	More significant
***	P < 0.001	-	Highly significant

#### **Overall Assessment of total effect:**

The total effect of therapy will be assessed as:-

Assessment Complete cure	Score 100% relief in sign, symptoms & clinical tests
Marked Relief	>75 to 99% relief in sign, symptoms & clinical tests
Moderate Response	>50 to 75% relief in sign, symptoms & clinical tests
Mild Improvement	>25 to 50% relief in sign, symptoms & clinical tests
No response	<25% relief in sign, symptoms & clinical tests

## IX. ANALYSIS & INTERPRETATION

The observation of patients will be carried out before, during and after completion of treatment. A comparative clinical Approach of Panchasama Churna and Erand Paka in the management of Amavata w.s.r. to Rheumatoid Arthritis' was carried out in 30 patients selected from the OPD & IPD of of Desh Bhagat Ayurvedic Hospital, Amloh, Mandigobindgarh District Fatehgarh Sahib (Punjab). The 30 patients were divided in three groups (10 patients each), irrespective of any socio-economic status, all ethnic origins, fulfilling the criteria of diagnosis and inclusive criteria. All patients were diagnosed on the basis of the signs and symptoms of Amavata (Rheumatoid Arthritis). Physical local examinations & laboratory investigation of each patient were performed. All the patients were examined before, during and after the trail, according to the case sheet format given in the annexure. The scoring of clinical features was recorded. The data recorded are presented under the following headings.

- A. Demographic data
- B. Evaluating disease Data
- C. Result of the Therapies
- D. Statistical analysis of the clinical parameters

The Statistical Analysis of the clinical parameters of Group A, Group B, Group C as:-

Table 4: Effects of Treatment on Localized Symptoms of 10 patients of Amavata Group A

Localized			Mean	Mean				
Localized			Wicali	Diff	CD	CE.	<b>64.9</b>	р
Symptom	n	DT		Diff.	SD	SE	ť	Р
		BT	AT					
Sandhishoola	10	2.60	1.40	1.20	0.42	0.13	3.84	<0.01
Sandhishotha	9	2.56	1.56	1.00	0	0	4.02	< 0.001
Sandhiraga	9	2.11	1.00	1.11	0.33	0.11	5.55	< 0.001
Sandhijadhyata	9	2.22	1.22	1.00	0	0	4.81	< 0.001
Sancharivedana	8	2.88	1.75	1.13	0.35	0.12	5.46	< 0.001
Ushna sparshasahatva	9	2.22	1.11	1.11	0.60	0.20	3.24	<0.01
Sandhikaryahani	8	2.25	1.25	1.00	0	0	4.32	<0.001

The total effect of treatment on localized symptoms of each patient was evaluated before and after completion of the treatment. In Group A, the initial mean score of 10 patients for Sandhishoola was 2.60 which were reduced to 1.40 after treatment. The total effect of treatment provided statistical significant (P<0.01) result with 't' value of 3.84. In symptom Sandhishotha, the mean before treatment was 2.56 which was reduced to 1.56, exhibiting highly significant (P<0.001) improvement with 't' value of 4.02. In symptom Sandhiraga, the mean before treatment was 2.11 which was reduced to 1.00, exhibiting highly significant (P<0.001) improvement with 't' value of 5.55. In Sandhijadhyata, the mean before treatment was 2.22 which was reduced to 1.22 after treatment. The total effect of treatment provided statistical significant (P<0.001) result with 't' value of 4.81. In symptom Sancharivedana, the mean before treatment was 2.88 which was reduced to 1.75, exhibiting highly significant (P<0.001) improvement with 't' value of 5.46. In symptom Ushna-sparshasahatva, the mean before treatment was 2.22 which was reduced to 1.11, exhibiting statistical significant (P<0.001) improvement with 't' value of 3.24. The initial mean score for Sandhikaryahani was 2.25 which were reduced to 1.25 after treatment. The treatment provided highly significant (P<0.001) result with 't' value of 4.32 after completion of the treatment.

Localized Symptom	n		Mean	Mean Diff.	SD	SE	't'	Р
<i>2</i> 1		BT	AT					
Sandhishoola	10	2.80	1.20	1.60	0.52	0.16	6.66	<0.001
Sandhishotha	10	2.50	1.10	1.40	0.52	0.16	5.72	<0.001
Sandhiraga	8	2.25	1.25	1.00	0.76	0.27	3.35	<0.01
Sandhijadhyata	10	2.20	1.00	1.20	0.42	0.13	6.00	<0.001
Sancharivedana	9	2.22	0.89	1.33	0.50	0.17	3.89	<0.01
Ushna Sparshasahatva	9	2.22	1.00	1.22	0.44	0.15	3.35	<0.01
Sandhikaryahani	8	2.00	0.88	1.12	0.35	0.12	3.21	<0.01

Table 5: Effects of Treatment on Localized Symptoms of 10 Patients of Amavata Group B

The total effect of treatment on localized symptoms of each patient was evaluated before and after completion of the treatment. In Group B, the initial mean score of 10 patients for Sandhishoola was 2.80 which were reduced to 1.20 after treatment. The total effect of treatment provided highly significant (P<0.001) result with 't' value of 6.66. In symptom Sandhishotha, the mean before treatment was 2.50 which was reduced to 1.10, exhibiting highly significant (P<0.001) improvement with 't' value of 5.72. In symptom Sandhiraga, the mean before treatment was 2.25 which was reduced to 1.25, exhibiting statistical significant (P<0.01) improvement with 't' value of 3.35. In Sandhijadhyata, the mean before treatment was 2.20 which was reduced to 1.00 after treatment. The total effect of treatment provided statistical significant (P<0.001) result with 't' value of 6.00. In symptom Sancharivedana, the mean before treatment was 2.22 which was reduced to 1.00, exhibiting statistical significant (P<0.01) improvement with 't' value of 3.89. In symptom Ushna-sparshasahatva, the mean before treatment was 2.22 which was reduced to 1.00, exhibiting statistical significant (P<0.01) improvement with 't' value of 3.35. The initial mean score for Sandhikaryahani was 2.00 which were reduced to 0.88 after treatment. The treatment provided statistical significant (P<0.01) result with 't' value of 3.21 after completion of the treatment.

							$\sim \infty$	
Localized Symptom	n	BT	Mean AT	Mean Diff.	SD	SE	y,	Р
Sandhishoola	10	2.60	1.00	1.60	0.52	0.16	9.80	<0.001
Sandhishotha	10	2.40	0.90	1.50	0.53	0.17	7.83	< 0.001
Sandhiraga	9	2.33	0.89	1.44	0.53	0.18	7.21	< 0.001
Sandhijadhyata	10	2.20	0.70	1.50	0.53	0.17	7.40	< 0.001
Sancharivedana	9	2.44	1.00	1.44	0.53	0.18	8.22	< 0.001
Ushna Sparshasahatva	9	2.56	0.89	1.67	0.50	0.17	6.26	<0.001
Sandhikaryahani	8	2.25	0.88	1.38	0.52	0.18	4.92	< 0.001

 Table 6 : Effects of Treatment on Localized symptoms of 10 Patients of Amavata

Group C

The total effect of treatment on localized symptoms of each patient was evaluated before and after completion of the treatment. In Group C, the initial mean score of 10 patients for Sandhishoola was 2.60 which were reduced to 1.00 after treatment. The total effect of treatment provided highly significant (P<0.001) result with 't' value of 9.80. In symptom Sandhishotha, the mean before treatment was 2.40 which was reduced to 0.90, exhibiting highly significant (P<0.001) improvement with 't' value of 7.83. In symptom Sandhiraga, the mean before treatment was 2.33 which was reduced to 0.89, exhibiting highly significant (P<0.001) improvement with 't' value of 7.01 improvement with 't' value of 7.21. In Sandhijadhyata, the mean before treatment was 2.20 which was reduced to 0.70 after treatment. The total effect of treatment provided statistical significant (P<0.001) result with 't' value of 7.40. In symptom Sancharivedana, the mean before treatment was 2.44 which was reduced to 1.00, exhibiting highly significant (P<0.001) improvement with 't' value of 8.22. In symptom Ushna-sparshasahatva, the mean before treatment was 2.56 which was reduced to 0.89, exhibiting statistical significant (P<0.001) improvement with 't' value of 6.26. The initial mean score for Sandhikaryahani was 2.25 which were reduced

to 0.88 after treatment. The treatment provided highly significant (P < 0.001) result with 't' value of 4.92 after completion of the treatment.

	G		Mean	Mean	Relief	CD	<u>e</u> r	· · · ·	D
Parameters	Group	BT	AT	Diff.	%	50	SE	l	P
	А	1.00	0.86	0.14	14.00	0.38	0.14	1.00	>0.05
RA Factor	В	1.00	0.88	0.12	12.00	0.35	0.12	1.00	>0.05
	С	1.00	0.50	0.50	50.00	0.53	0.19	2.65	< 0.05
	А	12.44	13.02	-0.58	4.66	0.31	0.10	0.88	>0.05
Hb%	В	12.45	12.93	-0.48	3.86	0.19	0.06	0.74	>0.05
	С	13.08	13.58	-0.50	3.82	0.31	0.10	0.78	>0.05
	Α	15.00	9.50	5.50	36.67	2.42	0.76	2.83	< 0.05
ESR	В	15.10	9.70	5.40	35.76	2.50	0.79	2.89	< 0.01
	С	16.60	8.50	8.10	48.80	3.67	1.16	4.55	< 0.001
	А	6850	6690	160	2.34	128.67	40.69	0.49	>0.05
TLC	В	6870	6750	120	1.75	48.30	15.28	0.38	>0.05
	С	7080	6980	100	1.41	40.82	12.91	0.28	>0.05
	Α	57.60	63.20	-5.60	9.72	2.22	0.70	3.08	< 0.01
Neutrophil	В	57.8 <mark>0</mark>	63.20	-5.40	9.34	2.17	0.69	3.00	< 0.01
	C	57.4 <mark>0</mark>	61.10	-3.70	6.45	2.00	0.63	1.95	>0.05
	А	35.0 <mark>0</mark>	29.80	5.20	14.86	2.25	0.71	3.19	< 0.01
Lymphocytes	В	35.1 <mark>0</mark>	29.80	5.30	15.10	2.31	0.73	3.22	< 0.01
	С	35.6 <mark>0</mark>	<mark>31</mark> .80	3. <mark>80</mark>	10.67	2.49	0.79	2.19	< 0.05
	А	4.80	5.20	-0 <mark>.40</mark>	8.33	0.52	0.16	1.13	>0.05
Eosinophil	В	4.60	5.30	- <mark>0.70</mark>	15.22	0.95	0.30	1.74	>0.05
	С	4.30	5.30	-1.00	23.26	1.05	0.33	1.85	>0.05
	A	2.60	1.80	0.80	30.77	0.63	0.20	2.68	< 0.05
Monocytes	В	<b>2</b> .50	1.70	0.80	32.00	0.63	0.20	2.59	<0.05
	С	<b>2</b> .70	1.70	1.00	37.04	0.67	0.21	3.31	< 0.01

Table 7 : E	<b>Effects of Treatment</b>	on Investigation	of Patients of Amavata
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The total effect of treatment on laboratory investigations of each patient was evaluated before and after completion of the treatment. In ESR, the treatment provided statistical significant result in all three groups after completion of the treatment. In Group C, 50 % patients show statistical significant relief in RA factor after completion of treatment. Hb% increases up to 0.5 gm in all groups but not statistically significant. TLC is statistical significant in Group C. In DLC slight changes are present.

 Table 8 : Relief Percentage of Sandhigata Lakshan in 30 Patients of Amavata

Sandhigata Lakshan	(	Group A Score		Group I			Group C		
	Sco			Sco	Score		Score		ief
	BT	AT	Rel %	BT	AT	Rel %	BT	AT	Rel %
Sandhishoola	26	14	46.15	28	12	57.14	26	10	61.54
Sandhishotha	23	14	39.13	25	11	56.00	24	09	62.50
Sandhiraga	19	09	52.63	18	10	44.44	21	08	61.90
Sandhijadhyata	20	11	45.00	22	10	54.54	22	07	68.18
Sancharivedana	23	14	39.13	20	08	60.00	22	09	59.10
Ushna sparshasahatva	20	10	50.00	20	09	55.00	23	08	65.20
Sandhikaryahani	18	10	44.44	16	07	56.25	18	07	61.10

The total symptom score and relief percentage of each Sandhigata Lakshan (localized symptom) of all patients of all three groups were evaluated. The relief percentage in individual symptoms of Amavata revealed a better therapeutic efficacy of treatment in all the three groups.

Graph 1 : Relief Percentage of Sandhigata Lakshan



## Table 9 : Relief Percentage of Sarvadehik Lakshan in 30 Patients of Amavata

Sarvadehik		Group A		(	Group B			Group C		
Lakshan	Sco	ore	ief	Sco	re	ief	Sco	re	ief	
	BT	AT	Rel %	BT	AT	Rel %	BT	AT	Rel %	
Jwara	10	05	50.00	08	05	37.50	08	04	50.00	
Shirshoola	08	03	62.50	06	02	66.67	04	01	75.00	
Nidranasha	10	08	20.00	12	07	41.67	12	05	58.33	
Kandu	02	01	50.00	08	05	37.50	10	05	50.00	
Daha	10	04	60.00	08	04	50.00	12	05	58.33	
Stemitya	10	07	30.00	10	04	60.00	10	03	70.00	
Bahumutrata	14	09	35.71	12	08	33.33	16	08	50.00	
Bhrama	06	04	33.33	08	03	62.50	08	03	62.50	
Hridgraha	02	01	50.00	04	02	50.00	08	03	62.50	
Angagraha	20	13	35.00	18	10	44.44	18	08	55.55	
Gaurav	16	10	37.50	14	08	42.85	18	07	61.11	
Alasya	16	11	31.25	14	08	42.85	18	07	61.11	
Mukhapraseka	06	04	33.33	06	04	33.33	08	03	62.50	
Aruchi	14	09	35.71	16	10	37.50	14	06	57.14	
Trishna	12	07	41.67	12	05	58.33	12	03	75.00	
Kshudhanasha	10	06	40.00	10	04	60.00	14	06	57.14	
Chardi	02	02	0	02	02	0	04	04	0	
Antrakujan	04	03	25.00	04	03	25.00	06	04	33.33	
Vibandha	14	10	28.57	12	04	66.67	16	05	68.75	
Kukshishoola	08	05	37.50	08	04	50.00	12	05	58.33	
Anaha	18	11	38.89	16	09	43.75	18	06	66.67	
Shuntanga	06	04	33.33	04	02	50.00	06	02	66.67	

The total symptom score and relief percentage of each Sarvadehik Lakshan (General symptom) of all patients of all three groups were evaluated. The relief percentage in individual symptoms of Amavata revealed a better therapeutic efficacy of treatment in all the three groups.



#### Graph 2 : Relief Percentage of Sarvadehik Lakshana

Table 10	: Effects	s of Tr	eatment	on Functional	Assessment	of	Patie	nts of	Amavata

Functional Assessment	Group	BT N	AT	Mean Diff.	Relief %	SD	SE	't'	Р
XX7-11	А	38.70	25.20	13.50	34.88	6.40	2.02	6.45	< 0.001
Time	В	42.70	24.60	18.10	42.39	3.35	1.06	11.12	< 0.001
	С	40.00	20.20	19.80	49.5	3.55	1.12	10.16	< 0.001
Grin	А	9.40	11.00	- 1.60	17.00	1.07	0.34	2.14	< 0.05
Strength	В	11.90	16.60	- 4.70	39.50	2.36	0.75	5.89	< 0.001
C	С	12.10	18.50	- 6.40	52.89	3.72	1.18	5.97	< 0.001
Foot	А	71.30	94.60	- 23.3	32.68	11.58	3.66	4.76	< 0.001
Pressure	В	104.7	138.3	- 33.6	32.09	15.81	5.00	6.40	< 0.001
	С	99.20	144.9	- 45.7	46.07	13.91	4.40	9.11	< 0.001
General	А	2.30	1.10	1.20	52.17	0.63	0.20	5.09	< 0.001
functional	В	2.10	1.00	1.10	52.38	0.57	0.18	4.71	< 0.001
capacity	С	2.20	0.80	1.40	63.64	0.70	0.22	5.82	< 0.001

The total effect of treatment on functional assessment of each patient was evaluated before and after completion of the treatment. In walking time, grip strength, foot pressure and general functional capacity, the treatment provided statistical significant result in all three groups after completion of the treatment.



Graph 3: Effects of Treatment on Functional Assessment of Patients of Amavata

Table 11 : Comparative Assessment of Overall Effects of Treatment of patients of Amavata

	Group	рА	Grou	p B	Group C		
Assessment	Number of Patients	Percentage	Number of Patients	Percentage	Number of Patients	Percentage	
Complete Cure	Nil	-	Nil	-	Nil	-	
Marked Relief	Nil	-	01	10	01	10	
Moderate Response	Nil	-	03	30	07	70	
Mild Improvement	10	100	06	60	02	20	
No Response	Nil	-	Nil	-	Nil	-	

Panchasama Churna i.e. Group A provided mild improvement in 100% of the patients after completion of treatment. Erand Paka i.e. Group B provided marked relief in 10% of the patients, moderate response in 30% of the patients and 60% of the patients were showed mild improvement. Combined effect of Panchasama churna and Erand Paka i.e. Group C provided marked relief in 10% of the patients, moderate response in 70% of the patients and 20% patients showed mild improvement after completion of the treatment. No patient got complete cure and was found unchanged/no response in all the groups.

**Graph 4 : Comparative Assessment of Overall Effects of Treatment** 



## X. CONCLUSION & SUGGESTIONS

Conclusion is the end result of entire research work. Without making any conclusion the aim of research work is in-complete. From this study "A comparative clinical Approach of Panchasama Churna and Erand Paka in the management of Amavata w.s.r. to Rheumatoid Arthritis" some conclusion made which may useful for practice or further research work.

The present research can be summarized as:-

- The disease Amavata and Rheumatoid Arthritis are similar in their etiology, sign and symptoms.
- Ama and Vata are the two prime entities are involved in the pathogenesis of Amavata.
- Peak incidence of the disease is found in middle age.
- Panchasama Churna is having Amapachana, Agnideepana, Vatashamana and Srotoshodhana and Rasayana properties.
- Erand paka provides Amapachana, Anuloman, Deepana, Kaphyatahara, Pachana, Shothahara, Vedanasthapana and Virechak action.
- Deepan, Pachan properties helps to metabolise the intermediate indigested food and Anuloman property helps in Vatanuloman.
- Both the drugs chosen for the study are having Amapachana, Agnideepana, KaphaVatashamana, Srotoshodhana, Anulomana in nature. So by their virtue, they help in treatment of Amavata.
- The drugs may acts as analgesic, anti-inflammatory, antioxidant, antirheumatic, carminative, laxative and deobstruent.
- The drugs are easily available, cheaper and with no side and adverse effect.
- Both drugs provided better relief in the amelioration of signs and symptoms of Amavata.
- All the groups have shown statistically significant results.
- Panchasama Churna i.e. Group A provided mild improvement in 100% of the patients after completion of treatment.
- Erand Paka i.e. Group B provided marked relief in 10% of the patients, moderate response in 30% of the patients and 60% of the patients were showed mild improvement after completion of the treament.
- Combined effect of Panchasama churna and Erand Paka i.e. Group C provided marked relief in 10% of the patients, moderate response in 70% of the patients and 20% patients showed mild improvement after completion of the treatment.
- Combined effects of both drugs might be contributing together simultaneously to different extents in the overall recovery of the patient.
- There is sufficient evidence provided by this study that Panchasama Churna and Erand Paka have definite role in the management of Amavata.
- It can be adopted as a cost effective simple treatment on O.P.D basis too with no adverse reactions and better results.

## **XI. SCOPE FOR FURTHER STUDY**

- Further studies with larger samples will be beneficial to authenticate the results obtained in the present study.
- A comparative study can be done to evaluate the effect of other panchakarma procedures like Kshar Basti, Swedana, Virechana etc.
- A study can be done to find out the efficacy of different formulations prepared out of Vatahara drugs.
- Pharmaceutical and analytical chemistry study of the ingredients of Panchasama Churna & Erand Paka for better understanding of the mode of action.

## Limitations of study:

- Limited period of study.
- Small sample size.

## XII. ACKNOWLEDGMENT

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