

**A RANDOMIZED OPEN LABELLED CONTROLLED CLINICAL STUDY
TO EVALUATE THE EFFICACY OF SVARŅAPATRI (*Cassia angustifolia*
Vahl) KAṢĀYA PARIṢEKA IN ĀMAVĀTA**

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ABSTRACT

Āma resulting due to improper digestion along with vitiated *Vāta* causes disease known as *Āmavāta*. In *Āmavāta*, both *Vāta* and *Kapha Doṣa* are involved. As far as symptomatology is concerned, Rheumatoid arthritis and *Āmavāta* are having similarities. In recent years, an intense study of different conditions primarily involving the musculoskeletal structures (rheumatology) has been made and it revealed that inflammatory or degenerative changes occur in disease like R.A. So, recent scholars co-relate *Āmavāta* with rheumatoid arthritis. In *Chikitsa Sūtra* of *Āmavāta*, *Svedana* is one of the lines of treatment. *Pariṣeka* is one of the varieties of *Sveda* which helps in alleviation of *Vāta* and *Kapha Doṣa*. In this study, *Daśamūla* and *SvarŅapatri* are considered, as both the drugs possess *Vāta-Kaphahara* properties. Hence, the present study was conducted to evaluate the efficacy of *SvarŅapatri Kaṣāya Pariṣeka* in *Āmavāta*. Both the groups were effective on *Āmavāta*, but on comparison there was significant difference as *SvarŅapatri Kaṣāya Sarvāṅga Pariṣeka* shows more effect than *Daśamūla Kaṣāya Sarvāṅga Pariṣeka* in *Āmavāta*. Therefore, Alternate hypothesis – (H1: *SvarŅapatri Kaṣāya Sarvāṅga Pariṣeka* shows more effect than *Daśamūla Kaṣāya Sarvāṅga Pariṣeka* in *Āmavāta*.) is accepted.

KEYWORDS: Rheumatoid Arthritis, *Āmavāta*, *Āma*, *Pariṣeka*, *Svedana*, *SvarŅapatri*

INTRODUCTION

Āmavāta is one of the major diseases in the present era which are mainly induced due to the highest erroneous habits developed gradually in society. It is a unique disease which is characterised by involvement of two distinct pathological entities of *Āma* and *Vāta* having mutually opposite properties. In *Āmavāta*, both *Vāta* and *Kapha Doṣas* are involved. As far as symptomatology is concerned, Rheumatoid arthritis and *Āmavāta* are having similarities.

Āmavāta presents with the cardinal symptoms like *Gaurava* and *Vṛścika Daṁśavat Vedana*¹. In recent years, an intense study of different conditions primarily involving the musculoskeletal structures (rheumatology) has been made and it revealed that inflammatory or degenerative changes occur in disease like Rheumatoid Arthritis². So, recent scholars co-relate *Āmavāta* with rheumatoid arthritis.

Rheumatoid arthritis occurs throughout the world and in all ethnic groups³.

In *Cikitsa Sūtra* of *Āmavāta*, *Svedana* is one of the lines of treatment⁴. *Svedana* because of *Uṣṇa Guṇa* acts on *Śīta Guṇa* of *Vāta* and *Kapha*, which in turn mitigates *Vāta* and *Kapha Doṣa*⁵. *Pariṣeka* is one of the varieties of *Sveda*⁶. *Svarṇapatri*, *Cassia angustifolia Vahl* which is having *Rūkṣa Guṇa* and *Vāta-kaphahara* actions are widely used in traditional Chinese medicine, and has anti-inflammatory activity, it is useful in relieving people from the condition of osteoarthritis, gout and rheumatoid arthritis and hence *Svarṇapatri* is selected^{7,8,9}. By considering the pathogenesis and *Samprāpti Ghaṭakas* of *Āmavāta*, the present study was taken up to analyse whether adopting *Sarvāṅga Pariṣeka Sveda* with *Svarṇapatri Kaṣāya* will help in reduction in the pain and stiffness caused by *Āmavāta*.

There is a requirement of a safe, successful effective treatment protocol to help the suffering population from this scenario. So, an attempt is made through this study to develop a better treatment option and to prevent further progression of the condition without any adverse effect.

AIMS AND OBJECTIVES:

To analyse the efficacy of *Svarṇapatri Kaṣāya Sarvāṅga Pariṣeka* in the management of *Āmavāta*.

METHODOLOGY

→ An open labelled randomized controlled clinical study.

→ Thirty subjects diagnosed with *Amavata* were randomly selected from the age group of 21- 65 years irrespective of gender, religion, economic status and occupation.

→ They were allocated into two groups of 15 subjects in Group A and Group B.

→ Ethical clearance was obtained prior to the study from the IEC of SSCASRH, Bengaluru, Karnataka with ethical clearance certificate number: SSIEC/123/2020.

→ The trail was registered prospectively in CTRI with CTRI number: CTRI/2022/01/039129.

Inclusion criteria

→ Subjects aged between 21- 65 years.

→ Subjects with classical signs and symptoms of *Āmavāta*.

→ Subjects who satisfy 6 criteria out of 10 of ACR.

→ Subjects fit for *Kāyaseka* and *Rūkṣa Sveda*.

Exclusion criteria

→ Subjects who are unfit for *Kāyaseka*.

→ Subjects suffering from Rheumatoid arthritis secondary to any systemic diseases.

→ Subjects having complications like swan neck deformity, ulnar deviation and any other diseases which interfere with the course of disease and treatment were excluded.

→ Subjects on any other medications like NSAID, corticosteroids.

→ Pregnant and lactating women.

Diagnostic criteria:

→ A detailed Performa were prepared considering the points pertaining to history signs, symptoms & examinations as mentioned in *Ayurvedic* classics and allied sciences to confirm the diagnosis.

→ 2010 ACR/EULAR Classification criteria for RA. ACR: American College of Rheumatology¹⁰; Score of categories A-D: $\geq 6/10 =$ Definite RA.

Interventions

Procedure - *Sarvāṅga Pariṣeka Sveda*

Pūrva Karma

* *Preparation of the medicine:* 200 g of *Kashaya Churna* (*Swarnapatri* for Group A / *Dashamoola Kashaya Churna* for Group B) was taken in a stainless-steel vessel. Ten liters of water was added and boiled on mild fire. It was reduced to five liters and then filtered and kept ready.

* After the evacuation of bowel and bladder, subject was advised to have light food and was made to sit on the *Droni*.

* The rolled cotton cloth was tied above the ears around the head at the level of forehead. Ears were plugged with cotton.

* Subject was asked to lie down in supine position.

Pradhāna Karma

* The decoction was poured on the body in uniform stream by using a can from a height of 9 inches, starting from the upper extremities and continuously done towards the lower extremities without interruption by the attenders from both the sides

Table no.1 – Scoring for *Sandhi Stabdhatā*

Morning stiffness	Score
None	0
Less than 15 mins	1
15 mins to 30 mins	2
30 mins to 1 hour	3

→ Objective parameters

* *Sandhi Śōtha:* The swelling was measured using Jeweller's ring.

Table no.2 – Scoring for functional ability of joints

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

simultaneously. *Pariṣeka* was done in supine and prone positions for the duration of 24 minutes each.

* Group A: *Svarṇapatri Kaṣāya Sarvāṅga Pariṣeka* for the duration of 48 minutes.

* Group B: *Daśamūla Kaṣāya Sarvāṅga Pariṣeka* for the duration of 48 minutes.

Paścāt Karma

* The *Kaṣāya* was wiped off and body was cleaned with smooth wipers.

* Rest was advised for few minutes followed by hot water bath.

Follow up

Follow up was done once after 15 days.

Assessment criteria

→ The subject's response was assessed on subjective & objective parameters. Scoring/ measurement were done for assessment on 0th day before treatment, 7th day after treatment, and on the 22nd day at follow up.

→ Subjective parameters:

* *Sandhi Śūla:* By using Visual Analogue Scale.

* *Sandhi Stabdhatā*

* Functional ability test of shoulder, elbow, wrist, MCP and PIP joints.

Statistical analysis

→ Statistical analysis was done using SPSS software version 26.

→ Subjective parameters:

*Friedman's Test: to compare the results within the group.

*Mann-Whitney U test: to compare the results between the groups.

→ Objective parameters

*Repeated ANOVA test: to compare the results within the group.

*Unpaired T test: to compare the results between the groups.

OBSERVATIONS & RESULTS

→ **AGE:** In the present study, all subjects belonged to Madhyama age group, among which maximum number of subjects (46.67%) were found in the age group of 31-40 years, 30% subjects aged between 41-50 years, 23.33% subjects aged between 51 - 60 years and no subjects were aged between 21-30 years.

→ **GENDER:** Totally among 30 subjects, 63.33% were female and 36.67% were male. The present study revealed that incidence is more observed in females.

→ **SOCIO-ECONOMIC STATUS:** Among 30 subjects taken up for the study, maximum belonged to middleclass, about 80% of the subjects, 10% subjects belonged to upper middle-class, 10% subjects belonged to lower middle-class and none of the subjects belonged to rich class.

→ **PRAKR̥TI:** Among 30 subjects taken up for the study, 56.67% subjects belonged to *Kapha-Vāta Prakṛti*, 23.33% subjects belonged to *Vāta-Pitta Prakṛti*, and 20% subjects belonged to *Pitta-Kapha Prakṛti*.

→ **DIET:** Among 30 subjects taken up for the study, maximum subjects (80%) belonged to mixed diet category and 20%

subjects belonged to vegetarian diet category.

→ **HABITS:** Among 30 subjects taken up for the study, about 86.66% of the subjects had no habits. 6.67% subjects had habit of alcohol and smoking, 6.67% subjects had habit of smoking, and none of the subjects had habit of alcohol.

→ **FAMILY HISTORY:** Among 30 subjects taken up for the study, maximum had no family history of *Āmavāta*, about 83.33% of the subjects and 16.67% subjects had a family history of *Āmavāta*.

→ **DURATION OF THE DISEASE:** Among 30 subjects taken up for the study, in maximum subjects (73.33%), duration of Rheumatoid arthritis was 1-5 years, in 16.67% subject's duration of the disease was 6 - 10 years and in 10% subject's duration of the disease was 11 - 15 years and none of the subject's duration of the disease was less than a year.

→ **AGNI:** In the present study, maximum i.e., 46.67% patients had *Mandāgni*, 43.33% subjects had *Sama Agni*, 10% subjects had *Viṣama Agni* and none of the subjects had *Tikṣṇa Agni*.

→ **KOṢṬHA:** Among 30 subjects taken up for the study, maximum had *Madhyama Koṣṭha*, about 80% of the subjects, 16.67% subjects had *Krura Koṣṭha* and 3.33% subjects had *Mridu Koṣṭha*.

→ **BMI:** Among 30 subjects taken up for the study, maximum belonged to normal BMI, about 66.67% of the subjects, 33.33% subjects were Overweight.

→ **TYPE OF ĀMAVĀTA (based on Doṣa):** Among 30 subjects taken up for the study, maximum had *Vātakaphaja Āmavāta*, about 53.33%, 26.67% subjects had *Vātajaja Āmavāta*, 13.33% subjects had *Kaphaja*

Āmavāta, 6.67% subjects had Vātapittaja Āmavāta and none of the subjects had Pittaja, Pittakaphaja and Sannipatika Āmavāta.

→ **TYPE OF ĀMAVĀTA (Based on Harita's classification):** Among 30 subjects taken up for the study, maximum had Snehi Āmavāta, about 43.33%, 23.33% subjects had Sarvāṅga-Āma Āmavāta, 16.67% subjects had Viṣṭambhi Āmavāta, 16.67% subjects had Gulmi Āmavāta and none of the subjects had Pakva Āmavāta.

MODE OF ONSET: Among 30 subjects taken up for the study, all the subjects had polyarticular mode of onset about 100% and none of the subjects had monoarticular mode of onset.

Table no.3 – Effect of treatment on Sandhi Śūla

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT and FU	P value between the groups
Group A	4.27 ± 1.22	2.73 ± 0.96	2.74 ± 1.12	0.000 AT & 0.041 FU	0.445 – AT (NS)
Group B	4.47 ± 0.99	3 ± 0.92	2.8 ± 1.08	0.000 AT & 0.180 FU	0.445 – FU (NS)
Effect Size difference Between A & B	0.18 The difference is ignored	0.13 The difference is ignored	0.30 The difference is small		

(BT- Before treatment, AT- After treatment, FU- Follow up)

Effect of treatment on Sandhi Śōtha:

Table no.4 – Effect of treatment on Sandhi Śōtha

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT and FU	P value between the groups
Group A	6.13 ± 10.5	5.80 ± 9.95	5.73 ± 9.85	0.166 AT & 0.334 FU	0.445 – AT (NS)
Group B	2.93 ± 7.74	2.80 ± 7.38	2.67 ± 7.03	0.493 AT & 0.164 FU	0.445 – FU (NS)
Effect Size difference	0.34 The difference is	0.34 The difference is	0.35 The difference is		

ROUTINE ACTIVITIES AFFECTED:

Among 30 subjects taken up for the study, 60% subject's routine activities were affected moderately, 20% subject's routine activities were affected mildly, 20% subject's routine activities were affected severely.

LAKṢAṆAS: Among 30 subjects taken up for the study, 100% subjects had Sandhi Śūla, 100% subjects had Sandhi Stabdhatta, 73.33% subjects had Aṅgamarda, 53.33% subjects had Apāka, 43.33% subjects had Gaurava, 23.33% subjects had Trṣṇa, and 20% subjects had Sandhi Śōtha.

Effect of treatment on Sandhi Śūla:

Between A & B	small	small	small		
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(BT- Before treatment, AT- After treatment, FU- Follow up)

Effect of treatment on *Sandhi Stabdhata*:

Table no.5 – Effect of treatment on *Sandhi Stabdhata*

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT and FU	P value between the groups
Group A	2.00 ± 0.65	0.93 ± 0.59	0.80 ± 0.56	0.000 AT & 0.164 FU	0.451– AT (NS)
Group B	2.20 ± 0.77	1.27 ± 0.70	0.80 ± 0.41	0.000 AT & 0.004 FU	0.172– FU (NS)
Effect Size difference Between A & B	0.27 The difference is small	0.52 The difference is medium	Both mean are the same		

(BT- Before treatment, AT- After treatment, FU- Follow up)

Effect of treatment on functional ability of shoulder joints:

Table no.6 – Effect of treatment on functional ability of shoulder joints

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT and FU	P value between the groups
Group A	0.17 ± 0.40	0.13 ± 0.29	0.00	0.334 AT & 0.104 FU	1.000 – AT (NS)
Group B	0.17 ± 0.40	0.10 ± 0.28	0.03 ± 0.12	0.164 AT & 0.164 FU	0.754 – FU (NS)
Effect Size difference Between A & B	Both mean are the same	0.10 The difference is ignored	0.32 The difference is small		

(BT- Before treatment, AT- After treatment, FU- Follow up)

Effect of treatment on functional ability of elbow joints:

Table no.7 – Effect of treatment on functional ability of elbow joints

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT and FU	P value between the groups
Group A	0.40 ± 0.57	0.23 ± 0.37	0.13 ± 0.22	0.019 AT & 0.082 FU	0.049 – AT (S)

Group B	0.07 ± 0.25	0.03 ± 0.12	0.00	0.334 AT & 0.334 FU	0.060 – FU (NS)
Effect Size difference Between A & B	0.74 The difference is medium	0.71 The difference is medium	0.80 The difference is large		

(BT- Before treatment, AT- After treatment, FU- Follow up)

Effect of treatment on functional ability of wrist joints:

Table no.8 - Effect of treatment on functional ability of wrist joints

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT and FU	P value between the groups
Group A	0.12 ± 0.86	0.77 ± 0.62	0.60 ± 0.54	0.000 AT & 0.019 FU	0. 731 – AT (NS)
Group B	1.60 ± 0.50	1.07 ± 0.25	1.00 ± 0.00	0.001 AT & 0.041 FU	0.851 – FU (NS)
Effect Size difference Between A & B	0.56 The difference is medium	0.62 The difference is medium	1.04 The difference is large		

(BT- Before treatment, AT- After treatment, FU- Follow up)

Effect of treatment on functional ability of Metacarpophalangeal joints (MCP):

Table no.9 – Effect of treatment on functional ability of Metacarpophalangeal joints (MCP)

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT and FU	P value between the groups
Group A	0.36 ± 0.19	0.17 ± 0.11	0.11 ± 0.11	0.000 AT & 0.007 FU	0. 668 – AT (NS)
Group B	0.35 ± 0.26	0.15 ± 0.13	0.12 ± 0.10	0.001 AT & 0.055 FU	0.870 – FU (NS)
Effect Size difference Between A & B	0.01 The difference is ignored	0.15 The difference is ignored	0.16 The difference is ignored		

(BT- Before treatment, AT- After treatment, FU- Follow up)

Effect of treatment on functional ability of Proximal Interphalangeal joints (PIP):

Table no.10 – Effect of treatment on functional ability of Proximal Interphalangeal joints (PIP)

	BT	AT	FU	p value (Rep per ANOVA) BT vis AT	P value between the groups

				and FU	
Group A	0.45 ± 0.19	0.17 ± 0.13	0.09 ± 0.11	0.000 AT & 0.000 FU	0.482 – AT (NS)
Group B	0.42 ± 0.17	0.21 ± 0.12	0.11 ± 0.09	0.000 AT & 0.001 FU	0.605 – FU (NS)
Effect Size difference Between A & B	0.16 The difference is ignored	0.31 The difference is small	0.19 The difference is ignored		

(BT- Before treatment, AT- After treatment, FU- Follow up)

Overall assessment

Table no.11 – Overall assessment

PARAMETER	IMPROVEMENT	
	GROUP A	GROUP B
<i>Sandhi Śūla</i>	42.15%	37.36%
<i>Sandhi Śoṭha</i>	6.45%	8.87%
<i>Sandhi Sthabdata</i>	49%	63.63%
Functional ability of shoulder joints	100%	82.35%
Functional ability of elbow joints	67.5%	14.2%
Functional ability of wrist joints	50%	55%
Functional ability of MCP joints	69.4%	65.7%
Functional ability of PIP joints	80%	73.8%

DISCUSSION

Āhāraja Nidānas: Maximum subjects had indulgence in many of these either individually or combined- excessive consumption of pulses, meat, sweets, butter, cheese, curd, sunflower oil and palm oil for cooking, fruit salad with ice-cream, *Śīta Āhāra* in the *Śīta Kāla* like having refrigerated items even in cold seasons, consumption of *Guru Ahara* in *Mandāgni*.

Most of these can be considered as *Doṣa-Kāla-Agni Virudhda* which are the foremost *Nidānas* of *Āmavāta*. Excessive consumption of these in the pre-existing stage of *Mandāgni* leads to formation of *Āma* and simultaneous vitiation of *Tridoṣa*, especially the *Vāta Doṣa* which are the main causes for the pathogenesis of *Āmavāta*.

The results of the European Prospective Investigation of Cancer in Norfolk (EPIC) have a reference for higher consumption of

proteins, regardless of their origin (plant or animal), high saturated fat in fostering inflammatory processes, in diseases like *Āmavāta*.

Vihāraja Nidānas: Maximum subjects had indulgence in faulty *Vihāras* like occasional suppression of natural urges, excessive traveling etc. which are the *Nidānas* for vitiation of *Vāta Doṣa*. Some subjects, predominantly the homemakers claimed of being in physical activity soon after a heavy meal.

Agni: In this study maximum incidence of *Āmavāta* was in *Mandāgni* (46.67%). *Agni Dourbalya* with excessive indulgence of *Nidānas* are highly suspectable for *Āma Utpatti* which is the primary factor in the *Samprapti* of *Āmavāta*. Among 30 subjects enrolled for the study, 11 subjects (36.66%) had *Āma Lakṣaṇās* which shows relation between *Mandāgni* and *Āma Utpatti* which is

the prime factor for the manifestation of Āmavāta.

Gender: In this study maximum incidence of Āmavāta was in females (63.33%). Females are more prone than males as the permissive role that oestrogens may display on autoimmunity, additional mechanisms which in part, are still unknown – may contribute to the higher female susceptibility to develop autoimmune diseases¹¹.

Sandhi Śūla, Sandhi Sthabdata, functional ability of wrist, MCP & PIP joints: Both the groups showed highly significant results after treatment in Sandhi Śūla, Sandhi Sthabdata and functional ability of wrist, MCP & PIP joints, implies that both Svarṇapatri Kaṣāya Sarvāṅga Pariṣeka and Daśamūla Kaṣāya Sarvāṅga Pariṣeka is effective in Sandhi Śūla, Sandhi Sthabdata and functional ability of wrist, MCP & PIP joints.

Sandhi Śoṭha and functional ability of shoulder joints: In both the groups, it was found to be statistically non-significant after treatment in Sandhi Śoṭha and functional ability of shoulder joints. This indicates negligible improvement in the Sandhi Śoṭha and functional ability of shoulder joints in both the groups.

Functional ability of elbow joints: Svarṇapatri Kaṣāya group showed statistically significant improvement of functional ability of elbow joints after treatment whereas Daśamūla Kaṣāya group showed statistically non-significant result after treatment. This indicates that Svarṇapatri Kaṣāya group is more effective in improving the functional ability of elbow joints than the Daśamūla Kaṣāya group.

Probable mode of action of Sarvāṅga Pariṣeka in Āmavāta: The active

components in the *Pariṣeka Dravya* are acted upon by the *Bhrājaka Pitta* when poured on the skin and enters the body through the *Sira-Mukha* of *Tīryak Dhamanīs* which are attached to the *Romakūpa* and results in *Pāchana* of *Āma*¹².

The *Uṣṇa Vīrya* and *Tikṣṇa Guṇa* are responsible for deep penetration and are transported throughout the body via *Tīryak Dhamanīs* and does *Sroto Viśodhana*.

Mode of action of *Pariṣeka* can be dealt according to the *Avastha* of *Āmavāta*. Among 30 subjects taken up for the study, 36.67% subjects presented symptoms of *Ama*. In this condition, *Doṣas* are in *Līna Avastha* and *Āma* which is *Guru, Snigda* and *Sthira* is spread all over the body. Therefore, the primary aim of the treatment at this stage is to enhance the *Dhatvāgni* thereby *Pācana* of *Āma* in the *Srotas*, which helps in subsiding the symptoms locally. Therefore, *Rūkṣha Sveda* like *Kaṣāya Pariṣeka* is the best choice in the *Āma Avastha* of *Āmavāta*. About 63.33% of the total subjects exhibited *Nirāma Lakṣaṇās*. For them *Sandhi Śūla* was the predominant feature than *Sandhi Sthabdata*, which gave us a clue about the excessive vitiated *Vāta Doṣa*. Therefore, the treatment was aimed more on mitigating *Vāta Doṣa*. In the *Upakrama* of *Vātavyādhi*, *Svedana* is told as the prime line of management. The *Uṣṇa Guṇa* of *Pariṣeka* helps in acting against the *Śīta Guṇa* of *Vāta*. *Mārga Avarodha* of *Vāta Doṣa* in *Śleṣma Sthānas* results in aggravation of the same in these sites leading to symptoms like *Sandhi Śūla*. *Pariṣeka* helps in clearance of *Srotas*, aiding *Sroto Śudhdi* for the free movement of *Vāta Doṣa* and hence *Pariṣeka* helps in management of *Āmavāta* in *Nirāma Avastha*.

Svarṇapatri Kaṣāya with its *Laghu, Rūkṣha Guṇa, Uṣṇa Vīrya* and *Vāta-kaphahara* properties, aids in *Āma pācana* and *Vāta Śamana*.

CONCLUSION

It can be concluded that *Sarvāṅga Pariṣeka* can be a choice for the management of *Āmavāta* specifically with *Svarṇapatri Kaṣāya* which show better results in subsiding *Āmavāta Lakṣaṇās* in *Āma* as well as *Nirāma Avastha*.

REFERENCES

1. Madhavakara, Madhava Nidana, Edited by G. D Singhal, S. N Tripathi, K. R. Sharma, Chapter no. 25/04, 9th edition, Delhi: Chukhambha Sanskrit Pratishthan; p200.
2. John Crawford Adams, Outline of Orthopaedics, chapter no.9, 13th edition, Edinburgh London: Churchill Livingstone Elsevier publication; p119.
3. Stanley Davidson, Davidson's Principle and Practice of Medicine, Edited by Brian R. Walker, Nicki R. College, Stuart H. Ralston, Ian D. Penman, Chapter-25, 22nd edition, Edinburgh London, Churchill Livingstone Elsevier publication; p1096
4. Yoga Ratnakara with Vidyotini Hindi Commentary by Vaidya Lakshmi patishastri, Chikitsa sthana, Chapter no.28/81-82, 6th edition, Varanasi: Chaukambha Sanskrit Sansthan; p650.
5. Agnivesha, Charaka Samhita, Ayurveda Deepika commentary of Chakrapani, Edited by Vaidya Yadavji Trikamji Acharya, Sutra sthana, Chapter no.14/3, 10th edition, Varanasi: Chaukamba Surabharati Prakashan; p87.
6. Agnivesha, Charaka Samhita, Ayurveda Deepika commentary of Chakrapani, Edited by Vaidya Yadavji Trikamji Acharya, Sutra sthana, Chapter no.14/44, 10th edition,

Varanasi: Chaukamba Surabharati Prakashan; p95.

7. P. V Sharma, Dravya guna vigyana, Dwitiya bhaag, 4th edition, Varanasi: Chaukamba Sanskrit Sansthan; p417.

8. Cuellar MJ, Giner RM, Recio MC, Manes S, Rios JL. Topical anti-inflammatory activity of some Asian medicinal plants used in dermatological disorders. *Fitoterapia*.2001; 72:221-9. [PubMed]. (Accessed 7 jan 2020).

9. Vijayaraghavan Gonuguntla, (DOC) Treating Rheumatoid Arthritis and Osteoporosis Using Herbal Extracts [Academia.edu] Mar 2015, 51 (12) 2357-2351; doi: 52.6517/26455057.4.2.165 (Accessed 17 February 2021).

10. How Do We Classify Rheumatoid Arthritis in Established Disease — Can We Apply the 2010 American College of Rheumatology/European League Against Rheumatism Classification Criteria? Jennifer H. Humphreys, Suzanne M.M. Verstappen, Carlo A. Scire, Till Uhlig, Bruno Fautrel, Tuulikki Sokka, Deborah P.M. Symmons, *The Journal of Rheumatology* Dec 2014, 41 (12) 2347-2351; DOI: 10.3899/jrheum.131443 (Accessed 20 February 2021).

11. Gerosa M, De Angelis V, Riboldi P, Meroni PL. Rheumatoid arthritis: a female challenge. *Womens Health (Lond)*. 2008 Mar;4(2):195-201. doi: 10.2217/17455057.4.2.195. PMID: 19072521 (Accessed 26 February 2021).

12. A Bird View International Journal of Applied Ayurveda Research, Vol 3, Issue 10, Sep-Oct 2018, ISSN: 2347-6362 3. Dr. Pallavi A. Hegde, MS(Ay), P. Hemantha Kumar Dept of Shalyatantra, Tilak

Maharashtra Vidyapeeth, Pune. (Accessed 20 March 2021).

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to Evaluate the Efficacy of Svarṇapatri
(Cassia Angustifolia Vahl) Kaṣāya
Pariṣeka in Āmavāta; VII(4): 2149-2159