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Research Article

A COMPARATIVE STUDY TO EVALUATE THE EFFICACY OF *VIRECHAN KARMA* AND *VASTI KARMA* IN CASES OF *VATARAKTA* W.S.R. TO GOUTY ARTHRITIS

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ABSTRACT

Majority of people globally have shown keen interest in Ayurveda as awareness has increased because of adverse effects of powerful modern synthetic drugs. In recent years, the miscellaneous groups of disease primarily involving the musculoskeletal structures have been the subjects of intense study and *Vatarakta* is one of them. *Vatarakta* is a well-documented disease in Ayurvedic classics. It described as a pathological condition arising from the simultaneous vitiation of *Vata* and *Rakta* by distinct etiological factors and generate the *Samprapti* of *Avarana*. A comparative understanding of *Vatarakta* and gouty arthritis reveals significant overlaps in their etiopathogenesis and symptomatology. Both conditions involve derangements in systemic metabolism, peripheral inflammation, episodic flares, chronicity, and multisystem involvement. **Materials and Method:** For this study 100 patients having *Sandhishu Ruk* (joint pain), *Swathu* (swelling), *Sparsh-ashatvam* (tenderness), *Stabdhta* (restricted movements of joints), *Daha* (burning), *Kandu* (itching), and *Vaivarnyata* (skin discoloration). With raised serum uric acid level were registered. All patients were divided in two groups 50 patients in each. In Group A *Virechana* with *Aragvadha phala majja* and in Group B *Vasti* with *Guduchiadi taila* and *Guduchi kwath* were given. *Guggulu vati* common in both groups. **Type of study:** Phase-2 Randomized parallel group study. **Results:** The trial drugs show a significant result on the subjective symptoms and objective parameters like serum uric acid level. **Conclusion:** *Vasti karma* was more effective in reducing clinical symptoms and s. uric acid level as compared to *Virechana.*

INTRODUCTION

In the third millennium majority of people, globally have shown keen interest in Ayurveda as awareness has increased because of adverse effects of powerful modern synthetic drugs. In recent years, the miscellaneous groups of disease primarily involving the musculoskeletal structures have been the subjects of intense study. Various such diseases are responsible for much temporary or permanent disablement. *Vatarakta* is one of them.

Vatarakta is a well-documented disease entity in *Purana* and almost all Ayurvedic classics, provide detailed descriptions of its etiopathogenesis, clinical features, stages, and management principles, highlighting its chronic, progressive, and often debilitating nature which shows that this disease was prevalent widely in early era too. *Vatarakta* described as a pathological condition arising from the simultaneous vitiation of *Vata dosha* and *Rakta dhatu* where both *Vata* and *Rakta* are afflicted by distinct etiological factors and generate the *Samprapti* of *Avarana*.[1]

The main etiology of *Vatarakta* is *Vata Prakopaka* and *Rakta Prakopaka Aahar-Vihar* along with some specific causes such as- *Sukumaranam, Stholyata, Sukhbhojinam, Hayaushtrayan, Abhighat* etc.[2] *Vatarakta* classified on the clinical ground into *Uttan* and *Gambhir*. When the pathogenesis of *Vatarakta* is limited to *Twak* and *Mamsa Dhatu* it is regarded as *Utthana Vatarakta*. Involvement of deeper *Dhatu* like *Asthi, Majja* and *Sandhi* signifies the *Gambheera Vatarakta*. It is characterized by *Sandhishu Ruk, Swathu, Sparsh-ashatvam, Stabdhta, Daha, Kandu* and *Vaivarnyata* of the affected joints and peripheral

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tissues[3]. According to Acharya Susruta, disease initiates from *Padamula* from *Karamula* i.e., feet and hands and spreads throughout the body like *Mushika visha* (rat poison) [4].

In contemporary medical science, status of *Vatarakta* is often compared with gouty arthritis due to comparative understanding reveals significant overlaps in their etiopathogenesis and symptomatology. Both conditions involve derangements in systemic metabolism, peripheral inflammation, episodic flares, chronicity, and multisystem involvement. Gouty arthritis is a metabolic inflammatory arthropathy caused by the deposition of monosodium urate (MSU) crystals in joints and soft tissues due to persistent hyperuricemia. It presents with acute episodic joint pain, redness, swelling, and tenderness- most commonly affecting the first metatarsophalangeal joint *(Podagra)*[5]. The condition is strongly associated with lifestyle factors, metabolic syndrome, renal dysfunction, and dietary habits. 1% of the total world's population is suffering with gout. It is rare in children and premenopausal females. The male female ratio is 7:1 to 9:1.

Before designing this study, the concept of management of *Vatarakta* was also discussed. The patient of *Vatarakta* should first be oleated and then purgated using *Snehayukta Virechan Dravyas* or by *Ruksha* (dry) mild purgative *Dravyas*[6]. *Vasti Chikitsa* is also described as a very effective treatment in classics for *Vatarakta*[7]. Considering all the above facts and entire survey of classical literature for this study we selected *Vasti karma*, we have selected *Guduchiadi Taila* and *Guduchi kwath*[8]. For *Virechana karma* we have selected *Aaragvadha* which is said to be the drug of choice for *Mridu Virechana*[9]. For internal administration we have selected *Guggulu vati*.[10] and followed diet related instructions since this is common for both the groups so it will not affect the net result of this clinical trial.

AIM AND OBJECTIVES

To evaluate the efficacy of *Virechana* and *Vasti chikitsa* in cases of *Vatarakta* w.s.r. to gouty arthritis and study the adverse effect of the trial drug if any.

MATERIAL AND METHODS

Selection of Cases

Patients of both sex, and age between 21 to 60 years, irrespective of their religion and occupation fulfilling the inclusion criteria were selected for this study. The study was conducted at PG Department of Kaya Chikitsa, State Ayurvedic College and Hospital, Lucknow, U.P. after getting ethical clearance from Institutional Ethics Committee. Everything regarding the treatment was explained to the patients, and written consent was obtained prior to starting the treatment.

Inclusion Criteria- Patients having any 3 major symptoms with or without minor symptoms with raised serum uric acid.

Subjective criteria[3]

Major Symptoms

1. *Sandhishu Ruk* (pain in the affected joint)
2. *Sandhishu Swathu* (swelling in affected joint)
3. *Sparsh-ashatvam* (tenderness in affected area)
4. *Sandhishu Stabdhta* (restricted movements of joints)

Minor Symptoms

1. *Sandhishu Daha* (burning sensation in affected joint)
2. *Sandhishu Kandu* (itching in the affected joint)
3. *Sandhishu Twagbahaya Tamra* (skin discoloration of affected area)

Objective criteria

Serum uric acid >7.2mg/dl in males and >6.0mg/dl in females.

Exclusion Criteria

- *Vatarakta* with others systemic disorders like Renal failure, cardiovascular disease, hepatic impairment and leukemia etc.
- Uncontrolled cases of diabetes mellitus, hypertension and hypothyroidism.
- Non-gout causes of arthritis such as rheumatoid arthritis, osteoarthritis, tubercular joint, leprosy or psoriasis, SLE etc.
- Complicated cases of *Vatarakta* by its *Updravas* like *Hikka, Moorchha, Moha, Visarpa* etc. and chronic joint deformity.
- Pregnant women and lactating mother.

Investigation

Routine

- Blood – TLC, DLC, Hb%, ESR
- Liver function test and renal function test
- Blood sugar - Fasting/postprandial
- Thyroid profile
- Urine- Routine and microscopic

Specific Investigation

- Serum uric acid
- R.A. Factor
- X-ray of involved joint - AP view and lateral view
- Synovial Fluid Analysis (if required)

Type of Study: Phase-2, rational, randomized parallel group study

Period of Study: 60 days

Follow-Up Period: At D15, D30, D45, D60 with drug and D75 after trial without drug.

Sample Size: 100 patients, 50 patients in each group were registered with 12 drop-out 6 in each group. So that 88 patients 44 in each group complete the trial.

Grouping and Intervention

All, the selected patients were divided into two groups-

Group A: 44 patients were kept on *Virechana Karma* - 2 schedule- 1st schedule start at D1 and 2nd schedule start at D30. *Abhyantar snehan* with *Guduchiadi Taila* and *Pradhan karma* with *Aaragvadh phala majja kwath* followed by *Sansarjana krama*.

Group B: 44 patients were kept on *Vasti Karma– Abhyanga, Yog Vasti krama* (5 *Anuvasan* and 3 *Niruha vasti*) 2 schedule- 1st schedule start at D1 and 2nd schedule start at D30. *Anuvasan* with *Guduchiadi Taila* and *Niruha Vasti* with *Guduchi kwath*.

Guggulu Vati- Orally - 2 *Vati* (each *Vati* of 500mg) twice a day after meal with *Anupana* of lukewarm water common in both groups.

Criteria for Assessment- Subjective parameters

All the signs and symptoms were graded 0, 1, 2, 3 or 0, +, + +, + + + on the basis of its intensity and severity given by patients on complained and confirmed by clinical examination before the trial drugs. The clinical improvement during and after trial drugs were correlated with previous intensity of the signs and symptoms.

1. *Sandhishu Ruk* (Pain in the affected joint)

(Numeric rating scale- adopted from Mc Chaffey, Beebe et al. 1989): Pain Assessment Scale: (VAS Scale = Visual Analogue Scale)

Grade	Score	Feature
0	0	No pain
+	1	1-3 mild pain
++	2	4-6 moderate pain
+++	3	7-10 severe pain

***Sandhishu Swathu* (Swelling in affected joint)**

Grade	Score	Feature
0	0	Nil
+	1	Mild swelling
++	2	Moderate swelling causing difficulty to move the joints
+++	3	Swelling causing inability to move the joints

***Sparsh-ashatvam* (Tenderness in affected area)**

Grade	Score	Feature
0	0	Nil
+	1	Tenderness on deep pressure
++	2	Tenderness on slight pressure
+++	3	Severe tenderness, patient do not allow to touch

***Sandhishu Stabdhta* (Restricted movements of Joints)**

Grade	Score	Feature
0	0	Nil
+	1	Painful movement
++	2	Restricted movement
+++	3	Total loss of movement

***Sandhishu Daha* (Burning sensation in affected joint)**

Grade	Score	Feature
0	0	Nil
+	1	Occasional burning sensation
++	2	Continuous burning sensation but tolerable
+++	3	Continuous burning sensation but not tolerable

***Sandhishu Kandu* (Itching in the affected joint)**

Grade	Score	Feature
0	0	Nil
+	1	Slight occasional itching
++	2	Continuous itching but tolerable
+++	3	Itching causing restlessness

***Sandhishu Twagbahaya Tamra* (Skin discoloration of affected area)**

Grade	Score	Feature
0	0	Nil
+	1	Slight discoloration but subsides itself
++	2	Continuous discoloration
+++	3	Blackish, coppery discoloration

Objective Criteria: Serum uric acid

Grade	Score	Feature
0	0	M: Within normal limit i.e., <7.2
		F: Within normal limit i.e., <6.0
+	1	M: 7.2 – 8.5
		F: 6.0 – 7.2
++	2	M: 8.6- 10.1
		F: 7.3 – 8.8
+++	3	M: > 10.1
		F: >8.8

Criteria for Assessment of Result

The results of the trial were accessed based on improvement in terms of symptomatic relief and reduction in serum uric acid level. The results were grouped as follows:

1. **Relieved**
   - Patients have >75% relief in terms of clinical symptoms.
   - Normal range of pathological findings up to follow-up period (serum uric acid level up to normal limit).
2. **Marked Improvement**
   - Patients having improvement between 51-75% in terms of major clinical symptoms.
   - Pathological findings may be up to higher side.
3. **Moderate improvement**
   - Patients having improvement less than 25-50% in terms of major clinical symptoms.
   - Pathological findings almost remain same as before trial.
4. **No relief**
   - Patients having >25% relief in terms of major clinical symptoms.
   - Pathological findings get disturbed.

Statistical analysis: The obtained results were analyzed and calculated with the help of Wilcoxon's signed rank test, Mann Whitney test for subjective parameters and paired t-test for objective parameters.

RESULT AND DISCUSSION

OBSERVATION

Demographic Observations

Out of 100 patients maximum 36 (36%) patients were from the age group of 41-50 years, 56 (56%) patients were male, and 64 (64%) patients were of Hindu religion, 89 (89%) patients were married. 50 (50%) patients were from high-income group, 33 (33%) patients were from service class, 93 (93%) patients were from urban area, and 67 (67%) patients were of non-vegetarian, 43 patients were non-addicted.

On enquiry 56 (56%) of patients had *Vishamagni* and 41 (41%) of patient had irregular bowel habit, 69 (69%) patients were having *Madhyam Koshtha*, 46 (46%) patients belonged to *Vata-pittaj prakriti*. In this trial it is found that most of the *Vatarakta* patient had standing 37 (37%) or sitting 31 (31%) nature of work, 52 (52%) were doing no exercise, 62 (62%) patients were having no associated illness. Out of 44 female 31 (70.14%) had menopause.

The incidence revealed that maximum patients have the duration of illness between 1 year to 5 years, 63 (63%) patients had asymmetrical joint involvement, 56 (56%) patients had sudden onset, Metatarsophalangeal joint of great toe was found to be the most common site of origin of disease in 35 (35%) patients.

Clinical Observations

Out of 100 patients selected according to predetermined "Criteria of Selection" and patients who completed the trial, 100% patients showed *Sandhishu Ruk, Swathu, sparsh- ashatvam* and *Stabdhta*, 60 (68.18%) patients were having *Sandhishu Daha*, 28 (31.81%) patients were having *Kandu*, 22 (25%) patients were having *Sandhishu Twagbahaya Tamra* (skin discoloration).

Therapeutic Observations

The assessment was done on the basis of reduction in subjective symptoms and S. uric acid level. The observed findings were shown in table no. 1:

Table 1: These statistical data show that in intra-group study there was significant relief in all symptoms in both Group A

S.No	Symptoms	Statistical Assessment				
		Group 'A'		Group 'B'		Comparison of improvement between 'A' and 'B'
		% of relief	P value	% of relief	P value	
1.	*Sandhishu Ruk*	61.90%	p<0.0001 Significant	66.15%	p<0.0001 Significant	Z = -1.14 P= 0.26 NS
2.	*Sandhishu- swathu*	64.96%	p<0.0001 Significant	68.29%	p<0.0001 Significant	Z = -1.44 P= 0.15 NS
3.	*Sparsh- ashatvam*	68.07%	P<0.0001 Significant	73.77%	P<0.0001 Significant	Z = 1.28 P= 0.20 NS
4.	*Sandhishu- stabdhta*	68.91%	P<0.0001 Significant	73.55%	P<0.0001 Significant	Z = -0.99 P= 0.32 NS
5.	*Sandhishu-Daha*	64.46%	P<0.0001 Significant	54.70%	P<0.0001 Significant	Z = -1.74 P = 0.09 NS
6.	*Sandhishu Kandu*	51.62%	P<0.0001 Significant	47.46%	P<0.0001 Significant	Z = 0.85 P= 0.40 NS
7.	*Sandhishu Twagbahayatamra*	53.98%	P<0.0001 Significant	44.07%	P<0.0001 Significant	Z =1.07 P= 0.30 NS

These statistical data show that in intra-group study there was significant relief in all symptoms in both Group A ($p<0.0001$) and Group B ($p<0.0001$) but there was no significant ($p>0.05$) difference in intergroup comparison. Improvement was more in group B.

Table 2: Comparison of S. Uric Acid Before & After Trial Between the Groups

Investigation	Gp.	Mn ± SD		Intragroup group Comparison (Wilcoxon test)	Intergroup Comparison (Mann Whitney test)
		Before Treatment	After Treatment		
Serum Uric Acid	'A'	7.60±2.30	5.10 ±1.80	Z = -3.60 P<0.001 S	Z = -3.92 P>0.001 NS
	'B'	8.30±2.60	4.20±2.20	Z = -3.84 P<0.001 S	

In intra-group study there was significant decrease in S. Uric acid in both Group A ($p<0.0001$) and Group B ($p<0.0001$) at before and after trial. There was no significant ($p>0.05$) difference in the S. uric acid between the groups before and after trial.

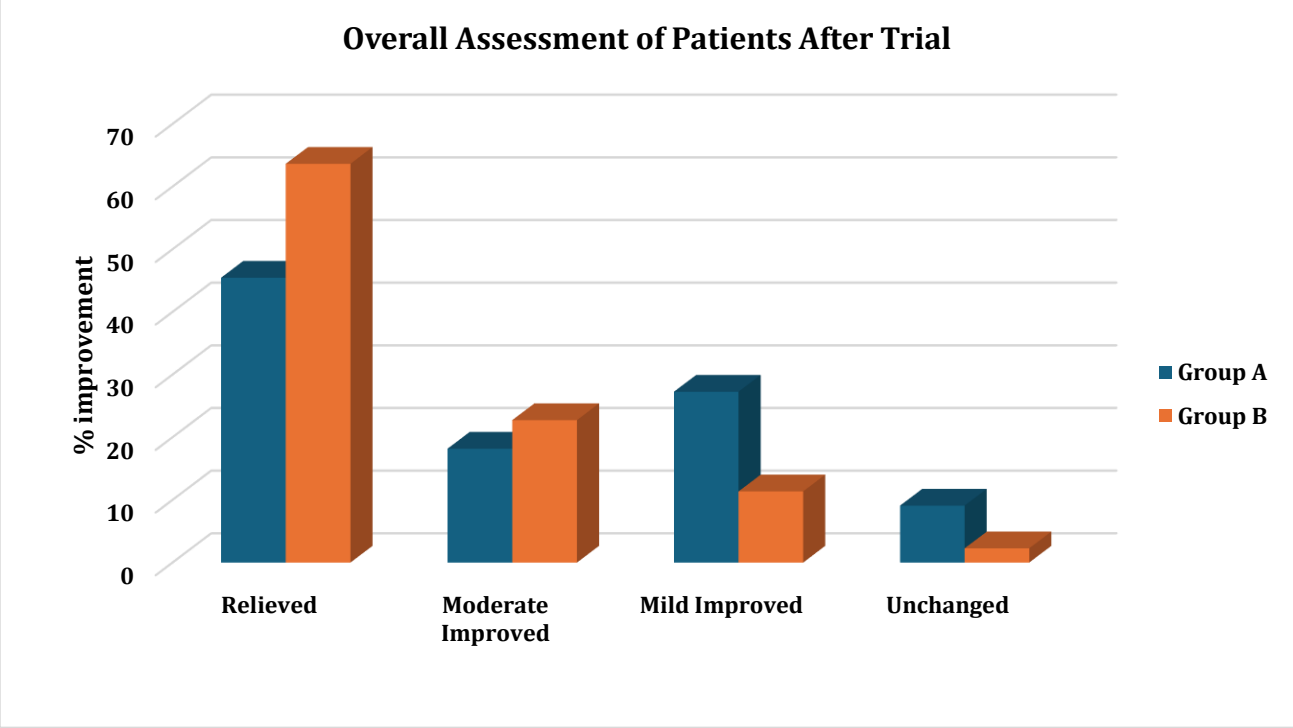
RESULT

The overall relived was higher in group 'B' (63.64%) compared to group 'A' (45.46%). The moderately improved was also higher in group 'B' (22.73%) than group 'A' (18.18%). the mildly improved class was higher in group 'A' (27.27%) than group 'B' (11.36%). In group 'A' 04 patient was recorded as unchanged while 01 patient was recorded as unchanged in group 'B'. The result shown in table no.-2 and Graph -1

Table 3: Overall assessment of patients after treatment

Final Improvement status	Group A (n=44)		Group B (n=44)	
	No.	%	No.	%
Relieved	20	45.46	28	63.64
Moderate improved	08	18.18	10	22.73
Mild improved	12	27.27	05	11.36
Unchanged	04	9.09	01	2.27

Yales chi square 3.99 P=0.26(NS)



Graph 1

DISCUSSION

Vatarakta is the finest illustrations of *Margavarana Janya Vata Vyadhi*. *Vatarakta* and gouty arthritis reveals significant overlaps in their etiopathogenesis and symptomatology. In *Vatarakta* all the *Hetu's* are either *Vata Prakopaka* or *Rakta (Pitta) Prakopaka*. Few other *Hetus* described as riding of camels, horse may vitiate *Vata-dosha* along with stasis of blood in dependent part of body[2]. So reduced flow of blood and decreased temperature of the peripheral joints favours deposition of MSU crystals. *Vatarakta* mostly begins from base of hands or legs (i.e., metatarso or metacarpo-phalangeal joints) but ankle and wrist joint are other common sites. Since there is major involvement of *Vata dosha, Rakta dhatu* and *Twak* in *Vatarakta*, many of the *Purva-roopas* are like that of *Kushtha*[11]. The features of *Vatarakta* are predominantly affecting the joints and peripheral tissues. The management of *Vatarakta* has been extensively described in the Ayurvedic classics, with emphasis on both *Sodhana* (bio-purificatory) and *Shamana* (palliative) therapies. *Shodhan* therapies includes *Raktamoksana, Vasti Karma, Virechana Karma* and *Shamana* therapy includes various herbal and herbomineral compounds. These are advocated based on the stage and severity of the condition.

Probable Mode of Action of Interventions

Virechana karma with *Amaltasphala majja kwath*

Virechana Karma in *Vatarakta* works by eliminating vitiated *Pitta* and associated *Rakta dhatu* and *Kapha dosha* from the body, thereby clearing obstructions (*Avarana*) and allowing normal *Vata* movement. *Virechana* is considered as *Agrya Oushada* for *Pitta dosha*[9] and in *Vatarakta, Pitta* and *Rakta* share a close relationship *(Ashraya-ashrayi bhava)*. By expelling pitta, the associated *Dushti* in the *Rakta* is also addressed. *Aaragvadha* is said to be the drug of choice for *Mridu Virechana "Aaragvadho mridu virechananam"*[9]. Due to *Shita virya* and *Madhur rasa* it is *Pitta samaka* also. *Virechana dravyas*, with *Ushna, Tikshna, Sukshma, Vyavayi*, and *Vikasi* qualities[12], penetrate deep *Srotas*, loosen and mobilize morbid doshas, and bring *Shakhagata mala* to the *Koshta* for expulsion. Biomedically, they mildly stimulate intestinal mucosa, enhancing permeability and toxin

elimination, including excess uric acid[13]. This detoxification improves *Agni*, restores metabolic balance, and supports healthy tissue formation.

Vasti karma* with *Guduchiadi taila* and *Guduchi kwath

As Acharya Charaka mentioned "*Na Hi Vasti Samam Kinchit Vatarakta Chikitsitam*"[7] there is no other therapeutic measures equivalent to *Vasti* in treating *Vatarakta. Vasti* is considered as *Agrya chikitsa* for *Vata dosha (Vasti vataharanam)*[9], which is recognized as the key pathogenic factor in *Vatarakta*. Vata due to *Marga-Avarodha* (obstruction of pathways) by vitiated *Rakta*, deviates from its normal function and becomes aggravated, leading to the manifestation cardinal features of *Vatarakta*. *Vasti Karma* directly addresses this root mechanism by pacifying *Vyana Vata* and *Samana Vata* and removing obstruction in *Srotas*, thereby facilitating restoration of normal *Vata-Rakta* harmony.

From a biomedical viewpoint *Vasti Karma* as rectal therapy enables systemic absorption that suppresses pro-inflammatory cytokines, stabilizes mucosal immunity, and reduces endotoxin load, lowering inflammation in *Vatarakta*. It also modulates the enteric–vagal axis to reduce pain and improve microvascular flow, while enhancing detoxification through better bowel motility and hepatic-portal circulation for metabolic balance. *Guduchi* (*Tinospora cordifolia*) which is prescribed as *Agrya Dravya* for *Vatarakta.[14] Guduchi* simultaneously performs *Raktaprasadana, Amapachana, Shothahara,* and *Srotoshodhana* actions, thereby addressing both the obstructing factor (vitiated *Rakta*) and the obstructed factor (aggravated *Vata*).

Guggulu vati contains *Guggulu, Guduchi, Draksha* and *Matulunga swarasa*[10]. It reduces pain and stiffness because high anti-inflammatory, analgesic and anti-arthritic activity of *Guggulu*[15] and *Guduchi*.[16] *Draksha* contains Proanthocyanidins with known antioxidant and anti-inflammatory properties. Animal studies showed that grape seed has the capabilities to reduce serum uric acid level[17]. *Matulung swarasa* have high quantity of vit. C which is itself a natural uricosuric and thus reduce occurrence of gouty arthritis[18].

CONCLUSION

Description of *Vatarakta* is available since *Pauranic Kala* but detail description is available from *Samhita Kala* and Acharya Charak was first to give a complete picture of the disease *Vatarakta*. The main etiology of *Vatarakta* is *Vata Prakopaka* and *Rakta Prakopaka Aahar-Vihar* along with some specific causes such as- *Sukumaranam, Stholyata, Sukhbhojinam, Hayaushtrayan, Abhighat,* etc*. Vatarakta* is considered to be the finest illustrations of *Raktamargavarana Janya Vata Vyadhi*. The disease *Vatarakta* is due to vitiated *Vata* and *Rakta* where both *Vata* and *Rakta* are afflicted by distinct etiological factors and move all over the body get obstructed by one another and get accumulated in the smaller joints leading to the symptoms of *Vatarakta*.

This disease is correlated to gouty arthritis, which is manifested due to accumulation of monosodium urate crystals in the joints arthropathy. Accumulation of uric acid differentiates it from other joint disorders. According to the classics, *Virechana*, *Vasti, Raktamokshana* and *Sanshaman Aushdhis* are the treatment modalities effective in management of *Vatarakta*. As uric acid is a metabolic waste *Shodhana Chikitsa* would be effective in reducing uric acid.

In this study *Virechana* with *Amaltas phalamajja* and *Vasti* with *Guduchi kwath* and *Guduchiadi Taila* were compared for their efficacy in *Vatarakta*. Both treatment modalities demonstrated significant therapeutic benefits in reducing the cardinal symptoms of *Vatarakta* and S. uric acid levels However, *Vasti* exhibited superior clinical outcomes compared to *Virechana* across most assessment parameters but no statistically significant changes in between the groups. Thus, from this study it can be concluded that *Vasti Karma* is more effective than *Virechana Karma* in the comprehensive management of *Vatarakta* (gouty arthritis). Evaluation of haematological and biochemical parameters before and after interventions confirmed the safety and tolerability of the interventions in both groups.

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