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# A RANDOMIZED COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF KATIPICHU AND MOIST HEAT THERAPY IN THE MANAGEMENT OF KATIGRAHA

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**ABSTRACT**

In traditional ayurvedic therapy, Pichu involves applying warm medicated oil-soaked cloth to specific area of body. Katipichu involves applying a cloth soaked in warm Murchita Tila taila of temperature maintain 38-40 degree celsius to the lower back. It is often used to treat lower back pain, sciatica and other musculoskeletal disorder. Moist heat therapy comes under thermal modality of rehabilitation programs. The pack is heated by immersion in hot (70 degree celsius water and pack is wrapped typically in towel maintaing 40-degree Celsius prior placing against the skin of patient and later removed. Helps in increasing blood circulation, pain relief and reducing muscle stiffness.

In ayurvedic context Katigraha is mentioned with symptoms such as pain and restricted movements in Katipradesha. As Vata is predominantly vitiated, Snehana and Swedana are treatment effective for reducing Vata vitiation. Back pain with stiffness is the cardinal symptom of lumbar spondylosis. Both are having similarities in symptoms hence correlated to Katigraha.

The study is randomized comparative clinical study. Patients of both sexes 20-60 years registered in IPD and OPD of MVR Ayurveda medical college,Parassinikadavu diagnosed with Katigraha and satisfying the inclusion criteria will be selected for the study .After collection of baseline data detailed history and examination will be done using clinical case proforma .A total of 26 participants will be selected for study the will be subjected to random sampling divided into 2 groups[Group A and Group B ].Group A Katipichu will be given for 7 days. Group B moist heat therapy for 7 days. Both the groups will be assessed before and after the intervention $0^{th}$ and $7^{th}$ day and follow up on $15^{th}$ day of the treatment. The result will be analysed statistically.

Keywords: Katipichu, Moist heat therapy, Katigraha , lumbar spondylosis

## INTRODUCTION

Pichu[1] (Picuh Plotah), literally means cloth, it is a process where in a piece of cotton cloth (Tula - Patala) is immersed in oil and placed over affected area.

The treatment principle of Pichu is based on Murdhni Taila[2] where Taila is applied over the scalp to relieve the Vata related diseases of head. In Katipichu a cotton pad is soaked with warm oil and kept on the area for a prescribed time. The cotton piece is replaced with fresh soaked one at regular interval of time. Katipichu procedure is done to relieve the pain and stiffness of muscle.

Moist heat therapy[3] also called as Hydrocollator pack and simply hot packs. The pack is immersed in hot 70-degree Celsius water and wrapped in towel maintaing 40 degree celsius prior to placing against the skin. The tissue temperature rises associated with hot pack therapy are of sufficient magnitude to achieve changes in therapeutic range and will produce sufficient heating to be of clinical value down to a depth of least 2-3 cm. Treatment duration of 15-20 minutes is clinically effective and rise in tissue temperature will achieve effect in common with other thermal modalities.

Katigraha is mentioned with symptoms such as pain and restricted movement in Katipradesha. Due to nidana sevana vata gets aggravated and produces symptoms of the disease. When Shudha and Sama Vata enters to Katipradesha it produces symptoms like Ruja and Sthabdatha in Katipradesha.In modern view, Low back ache is the most common chronic pain disorder which is characterized by dull or sharp pain in the lower back along with stiffness which restricts the activity, reduces work capacity[4] . As per WHO 60-80%of world population experience the back pain at some point of their life styles. The highest prevalance is among 30-60yrs.

Lumbar spondylosis is the Painful condition of back and lumbar region due to degeneration of intervertebral disc known as low back ache or lumbar spondylosis. Lumbar spondylosis[5] refers to a posterior defect in the vertebral body at the pars interarticularis. usually, the defect is due to trauma or from chronic repetitive loading and hyperextension. The highest prevalance among the adult age group is 76.6% in the population.

## SELECTION CRITERIA-

Diagnostic criteria:

- Classical lakshana of Katigraha such as Ruja and Graha in the Katipradesha. Inclusion criteria:
- Participants satisfying diagnostic criteria from both genders.
- Within the age group 20-60years.
- Participants fit for the Procedure Exclusion Criteria:
- Hypersensitivity of Skin
- Participant unfit for Snehana and Swedana procedure
- Uncontrolled Diabetes mellitus and Hypertension.
- Severe systemic illnesses that interfere the line of treatment.
- History of Carcinoma, Tuberculosis and Traumatic condition of spine.

## MATERIALS AND METHODS

AIM

To compare the effectiveness of Katipichu and Moist heat pack in the management of Katigraha. OBJECTIVES

Primary Objective

1) To evaluate the effectiveness of Katipichu in the management of Katigraha.
2) To evaluate the effectiveness of Moist heat therapy in the management of Katigraha.

3). To compare the effectiveness of Katipichu and Moist heat therapy in the management of Katigraha.

**STUDY DESIGN**- A Randomized comparative clinical study.

**STUDY SETTING-**

Institution- MVR AMC, Parassinikadavu Study Period- 18 months

Procedure duration- 7 days

Follow up- 15th day of the treatment

**STUDY POPULATION**

Participants will be selected from OPD and IPD of MVRAMC, Parassinikadavu during the year 2024-2025 within the age group 20-60years satisfying inclusion and exclusion criteria.

**SAMPLE SIZE**

Sample size formulae

$N = ((Z\alpha + Z\beta)^2 \times 2S^2) / D^2$

Where Zα= The standard normal variate for TYPE 1 error =1.96

Zβ = The standard normal variate for TYPE 2 error =0.84 S= Pooled variance = 0.45

D = Effect size = 0.5

Therefore, $((Z\alpha + Z\beta)^2 \times 2S^2)/D^2 = ((1.96+0.84)^2 \times 2 \times (0.45)2/ (0.5))^2 = 12.7$

So, 26 participants needed (13 in each group) for the study.

**INTERVENTION**

DETAILS Group – A

Katipichu Poorva karma:

1. Atura Pariksha – The patient is examined in relation to Dasavidha pariksha. Then the affected place is examined properly and then maximum tender region is noted. It is also examined for scars and wounds.

2. Sambhara samgraha – It includes the collection of necessary items required for the stable conduction of the procedure. 2 cotton pads, Murchita Tilataila, bowl, vessel, water, gas stove and table. Two Pichu will be prepared by using thick cotton pad of size (35cm length and 20 cm breadth) and thickness of 20mm.

Atura Sidhata – Patient will be asked to lie in prone position over the Droni. The affected area will be exposed properly.

Pradhana karma

The prepared Pichu will be soaked in Murchita Tilataila and it will be heated in hot water bath up to 38-40 degree celsius and will be kept over the affected area. When the temperature of the Pichu decreases it will be replaced with another warm Pichu to maintain uniform temperature throughout the procedure. The procedure will be continued for 30 minutes.

Paschat karma

Remove the cotton pad after the procedure, The area will be cleaned with a clean cotton cloth. Duration – This treatment is done for 7 days.

**GroupB-Moistheat therapy**

Poorvakarma

Moist heat therapy will be performed in Physiotherapy unit. The patients will be asked to sit/lie down according to their comfort.

1. Preparation of hot pack: The temperature range of 60–70-degree Celsius water cloth immersed and wrap in the towel. Pack maintains the temperature for 15-20 minutes.
2. Preparation of Patient: The area to be treated will be exposed and inspected for cuts, rashes or infection and then will be cleaned properly.

Pradhana karma:
Remove the hot pack from the unit and place it on towel.
Fold another towel into and place it over the pack, wrap the whole pack up with the bottom towel. Temperature of the wrapped pack should not exceed 40 Degree Celsius.
Paschat karma:
Monitor the initial response from the patient to treatment during the first 5-10 minutes.
Ask the patient for feedback and visually inspecting skin. If necessary, adjust the layers of towel.
During the treatment maintain the position of hot packs.
Ensure it does not exacerbate pain, produce discomfort or occlude circulation.

**EQUIPMENTS**
• Hot water
• 2 Cotton Pads (35cm length and 20 cm breadth)
• Towel

.**ASSESSMENT CRITERIA**

Assessment of the results will be done on the basis of signs and symptoms. The parameters will be assessed one day prior to the treatment, after the treatment and after 15$^{th}$ day of treatment using different scoring systems assigned.

Subjective criteria:
• Graha (stiffness).
• Trikashoola.

Objective criteria:
• Walking time.
• Range of movement- lumbar spine (lateral flexion, lumbar flexion, lumbar extension, rotation)

**SCORING OF ASSESSMENT PARAMETERS SUBJECTIVE PARAMETERS:**

1. RUJA (pain): Grading of Ruja will be given on the basis of visual and analogue scale (VAS) of 10cm. The participant is asked to mark against the number corresponding to how he/she feels the pain at the moment.

Grade 0- No pain (scale reading- 0) Grade 1- Trivial pain (scale reading- 1) Grade 2- Mild pain (scale reading 2-4)

Grade 3- Moderate pain (scale reading 5-7) Grade 4- Severe pain (scale reading 8-10)

2. GRAHA (stiffness):

Grade 0- No stiffness

Grade 1- Sometimes for 5-10 minutes

Grade 2- Daily for 10-30 minutes

Grade 3- Daily for 30-60 minutes Grade 4- daily more than 1 hour **OBJECTIVE PARAMETERS**

1. WALKING TIME: Time taken to walk 20 meters in a straight way in medium speed

Grade 0- Up to 20 seconds

Grade 1- 21 to 30 seconds

Grade 2- 31 to 40 seconds

Grade 3- 41 to 50 seconds

Grade 4- 51 to 60 seconds

Grade 5- More than 60 seconds

2. RANGE OF MOVEMENTS:

The participants range of motion will be recorded from forward flexion, extension, lateral flexion and lateral rotation

LUMBAR FLEXION

Grade 0- 80 to 89 degree

Grade 1- 70 to 79 degree

Grade 2- 60 to 69 degree

Grade 3- 50 to 59 degree LUMBAR EXTENSION

Grade 0- 20 to 29 degree

Grade 1- 10 to 19 degree

Grade 2- 0 to 9 degree

RIGHT LATERAL FLEXION

Grade 0- 20 to 29 degree

Grade 1- 10 to 19 degree

Grade 2- 0 to 9 degree LEFT LATERAL FLEXION

Grade 0- 20 to 29 degree

Grade 1- 10 to 19 degree

Grade 2- 0 to 9 degree

RIGHT LATERAL ROTATION

Grade 0- 30 to 39 degree

Grade 1- 20 to 29 degree

Grade 2- 10 to 19 degree

Grade 3- 0 to 9 degree

LEFT LATERAL ROTATION

Grade 0- 30 to 39 degree

Grade 1- 20 to 29 degree

Grade 2- 10 to 19 degree

Grade 3- 0 to 9 degree

**DATA COLLECTION METHOD**

Primary data for the study were collected from the OPD and IPD in MVRAMC, Parassinikadavu by direct observation, orally and using clinical case proforma irrespective of sex.

**DISCUSSION ON STATISTICAL ANALYSIS**

Sheetoparama

The analysis of Sheetoparama showed no variation in either Group A or Group B throughout the protocol period. The mean values remained constant from Day 1 to Day 7, indicating no observable change during treatment.

Shooloparama

The assessment of Shooloparama showed significant improvement in both Group A and Group B during the treatment period ($p<0.001$). Group B showed improvement mainly from Day 5 onwards, indicating that pain reduction started earlier in Group B.

Stambha Nigraha

The analysis of Stambha Nigraha showed significant improvement in both groups ($p<0.001$). Progressive reduction in stiffness was observed during the course of treatment, with complete improvement by Day 6 and Day 7.

Gourava Nigraha

The assessment of Gourava Nigraha showed gradual improvement in both groups. The Friedman test showed statistically significant changes in both groups ($p<0.001$), indicating effective reduction in Gourava.

Mardavata

The assessment of Mardavata showed gradual improvement in both groups during treatment. The Friedman test showed statistically significant improvement in both groups ($p<0.001$).

Sheetharita

The results showed improvement in Sheetharita in both Group A and Group B during the treatment period. The Friedman test showed statistically significant improvement in both groups ($p<0.001$).

Vyadhijadani

The results showed improvement in Vyadhijadani in both groups. In Group B, no change was seen from Day 1 to Day 5, while slight improvement was seen on Day 6 and complete improvement on Day 7. The Friedman test showed statistically significant improvement in both groups ($p<0.001$).

Laghutva

The Friedman test showed significant changes in Laghutva in both groups ($p<0.001$). Improvement became more noticeable towards the completion of the treatment period.

Swedasrava

The Friedman test showed significant improvement in Swedasrava in both groups during treatment ($p<0.001$). Both treatments helped to improve Swedasrava gradually.

Effect on Ruk

The Friedman test demonstrated significant reduction in Ruk across both groups ($p<0.001$). In Group A, the mean score reduced from 1.462 before treatment to 0.462 after treatment. In Group B, it reduced from 1.231 to 0.154. The improvement was also maintained during follow-up.

Effect on Graha

The Friedman test evidenced significant improvement in Graha in each group ($p<0.05$). In Group A, the mean score reduced from 0.538 to 0.077, while in Group B it reduced from 0.385 to 0.077. The improvement remained unchanged during follow-up.

Walking Time: Both groups showed significant improvement in walking ability ($p<0.001$), maintained during follow-up.

Lumbar Movements: Significant improvement was observed in lumbar flexion, extension, bilateral lateral flexion and bilateral rotation in both groups, with improvement maintained during follow-up.

**RESULT OF STATISTICAL ANALYSIS**

| | | BT | AT | FT |
|---|---|---|---|---|
| Ruja | Z | -1.213 | -1.667 | -1.667 |
| | P | 0.225 | 0.096 | 0.096 |
| Graha | Z | -0.252 | 0 | 0 |
| | P | 0.801 | 1 | 1 |
| Walking time | Z | -1.8 | -0.374 | -0.374 |
| | P | 0.134 | 0.78 | 0.708 |
| Flexion | Z | -0.555 | 0 | 0 |
| | P | 0.575 | 1 | 1 |
| extension | Z | -0.555 | 0 | 0 |
| | P | 0 | 1 | 1 |

| | | **BT** | **AT** | |
|---|---|---|---|---|
| Right lateral Flexion | Z | -2.316 | -0.602 | -0.602 |
| | P | 0.02 | 0.504 | 0.504 |
| Left lateral Flexion | Z | -2.316 | -0.602 | -0.602 |
| | P | 0.02 | 0.504 | 0.504 |
| Right lateral rotation | Z | -0.39 | 0 | 0 |
| | P | 0.69 | 1 | 1 |
| Left lateral rotation | Z | -0.39 | 0 | 0 |
| | P | 0.69 | 1 | 1 |

**OVERALL ASSESSMENT OF TREATMENT**

**EFFECT OF TREATMENT – BT TO AT**

The overall effect of treatment was assessed by comparing before treatment (BT) and after treatment (AT) values of Ruk, Graha, Walking Time and lumbar movements. Both groups showed improvement in all parameters, indicating that both treatments were effective in managing Katigraha. Group B showed comparatively better improvement in daily functional activities and lumbar movements.

**EFFECT OF TREATMENT – AT TO FOLLOW-UP**

The treatment effect was assessed at after treatment (AT) and follow-up (FT). Improvement was maintained in both groups.

Ruk: Group A – 92.31%, Group B – 76.92% relief. Graha: Both groups – 96.15% relief.

Walking Time: Both groups – 88.46% improvement. Lumbar Flexion: Both groups – 96.15% improvement.

Lumbar Extension: Group A – 96.15%; Group B – 88.46% at AT and 96.15% at FT.

Right Lateral Flexion: Both groups – 92.31% at AT; Group A – 96.15%, Group B – 84.62% at FT. Left Lateral Flexion: Both groups – 92.31% improvement.

Right & Left Lateral Rotation: Both groups – 96.15% improvement.

**OVERALL**

Both Katipichu and Moist Heat Therapy were effective in improving the clinical features and functional parameters of Katigraha, and the improvement was maintained during follow-up.

**CONCLUSION**

*Katigraha* was commonly observed among middle-aged individuals, particularly women and those involved in prolonged standing, stooping, and moderate physical activities. Most participants belonged to the middle socioeconomic group, followed a mixed diet, and had Vata-Kaphaja Prakriti. Faulty posture, physical strain, and Vata Dosha vitiation may be associated with the manifestation of *Katigraha.* The condition was mainly characterized by pain, stiffness, and restricted lumbar movements.

Both *Katipichu* and Moist Heat Therapy produced significant improvement in pain, stiffness, walking time, and lumbar movements after treatment, and these improvements were maintained during follow-up. Katipichu showed comparatively better improvement in pain and lateral flexion, whereas Moist Heat Therapy showed better improvement in lumbar extension. Overall, both interventions were effective in reducing symptoms and improving the functional status of patients with *Katigraha*.

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