



Research Article

**A CLINICAL STUDY OF EVALUATE THE EFFICACY OF VISHATINDUKA TAILA KATI BASTI IN THE MANAGEMENT OF KATIGRAHA (LOW BACK PAIN)**

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ABSTRACT

*Katigraha* is a *Vataja Nanatmaja vyadhi* and not explained as a separate disease, but rather as a symptom in another disease like as *Ashmari*, *Arshas*, *Bhagandara* etc. We have a brief summary of *Katigraha* along with symptoms, etiological causes, and treatment in *Amavatadhikara Adhyaya* of *Bhavaprakasha*, and in *Vatavyadhi Adhikara* of *Gadanigraha*. Along with specific symptoms like *Katishoola* and *Katigraha* caused either *Shuddha* or *Sama vayu*. In contemporary science, we can compare the *Katigraha* with low back pain (lumbago) suffering from Low back pain is an emerging problem in adolescents, with an incidence that is the highest in the third decade of life worldwide. *Katibasti* is the process in which, retaining of warm medicated oil in a specially formed frame prepared from *Masha* dough in lumbo-sacral region. It performs the combined action of *Snehana* and *Swedana*. *Katibasti* is a type of *Snigdha Sweda*, as warm oil is used which produce both the *Snehana* and *Swedana* effect, attempt has been made with *Vishatinduka Taila* for *Katibasti* purpose. In present study using *Vishatinduka Taila Katibasti* is done for 7 days for 30 minutes daily.

INTRODUCTION

Ayurveda is one of the oldest and most widely accepted traditional medical systems in the world. It has endured and thrived for millennia, possessing vast knowledge of natural healing. *Katigraha* is a *Sthana vishesha vyadhi* where *Katipradesha* is mainly effected with *Ruk* (pain) and *Graha* (stiffness) is the main cardinal symptom.

In India near about 8% peoples Years Lived with Disability (YLD) due to Low back problem and 4.6% peoples Disability Adjusted Life Years (DALYs) in musculoskeletal disorder in India. Rate of change DALYs in respect to low back pain has been 1.2% to 2.3% between years 1990 to 2016.<sup>[1]</sup>

*Panchakarma* is a part of Ayurveda that focuses on the body's natural cleansing and detoxification. In *Panchakarma* *Snehana* and *Swedana* included under

*Dwidopakrama*, used as *Poorvakarma* as well as *Pradhanakarma*. Charaka included *Swedana Karma* in *Shadupakrama* as it shows its importance as a Principal treatment modality<sup>[2]</sup>. *Snehana* and *Swedana* are mainly adopted for the management of *Vatavyadhi*<sup>[3]</sup>. When the pathogenesis is involved in the specific region then *Ekanga Sweda* is considered.

*Katibasti* is one of the *Sagni Snigdha drava Sweda* where medicated oil is used and made to stand for a required period. *Katibasti* is mainly indicated in painful conditions of *Katipradesha*. The *Swedana* itself is beneficial in relieving the pain and stiffness in addition the warm oil produces *Snigdha* and pacifies the vitiated *Vata*.

Ayurveda explains wide range of treatment modalities with different combinations and formulations by different Acharya's. Even today some good formulations are not at in practice several research works have been carried out in research institutes. *Vishatinduka Taila* is used for the *Katibasti* purpose which is referred in *Basavarajeeyam* in the context of *Vataroga Nidana Lakshana Chikitsaadyaya*<sup>[4]</sup>. It is said to be effective in relieving the pain and stiffness. The drugs used in this *Taila* are *Shoditha Vishatinduka beej*, *Aranala*, *Jambeera swarasa*,

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*Vishatinduka beeja choorna, Eranda taila and Tila taila.* Most of the drugs contains *Ushna Veerya* and *Ushna Guna* which reduces *Vata* and *Kapha Doshas*. *Amla dravyas* i.e., *Aranala* and *Jambeera rasa* helps in *Vatanulomana* along with *Deepana, Pachana* property which corrects *Dhatvagnimandya*. Where *Vishatinduka beeja* and *Eranda taila* has the *Vedana sthapaka* property which reduces *Shoola* and *Shotha*. It is observed significantly effective to reduce pain and stiffness which is the cardinal feature of *Katigraha*.

#### AIMS AND OBJECTIVES

- To evaluate the efficacy of *Vishatinduka Taila Katibasti* in management of *Katigraha*.
- To study the effect of *Vishatinduka Taila* in *Katigraha*.
- To study the effect of *Katibasti* in *Katigraha*.

#### MATERIAL AND METHODS

##### 1. Literary Source

Significant data is collected from Ayurvedic classics, modern literatures, Contemporary texts, including Journals, Websites etc reviewed pertaining to Disease and drug in the intended study.

##### 2. Sample Source

30 patients fulfilling the diagnostic and inclusion criteria are randomly selected from OPD and IPD of Department of Panchakarma, Karnataka Ayurveda Medical Collage, Hospital and other camps conducted for the purpose.

##### 3. Drug Source

The formulation selected for the study *Vishatinduka Taila* will be prepared in the teaching pharmacy attached to Karnataka Ayurveda Medical College, Mangalore, as per the Standard Operative procedure.

- For *Vishatinduka taila* preparation special method has been explained. One part of *Shodhita Vishatindukabeeja* is taken and kept soaking with eight parts of *Aranala (Kanjika)* which is prepared out of jawar for a day. Often it is stirred well and water is decanted. To this *Kanjika* two parts of *Jambeera swarasa*, one part of *Shodhita Vishatinduka beejachoorana*, one part of *Eranda Taila*, two parts of *Tila Taila* are added and *Tailapaka* is carried out till *Snehasiddhi lakshanas* of *Taila* are observed. Then it is filtered after cooling and stored in air tightened vessel.

#### Method of Collection of Data

##### a) Sample Size

A minimum of 30 patients fulfilling the diagnostic and inclusion criteria of either gender will be selected for the clinical study.

##### b) Diagnostic Criteria

Patients presenting with the *Lakshanas* of *Katigraha* will be selected.

- *Ruk* (pain)
- *Graha* (stiffness)

##### c) Inclusion Criteria

- Patients complaints of signs and symptoms of *Katigraha*.
- The patients, who are fit for *Snehana* and *Swedana*.
- The age group between 20 years to 60 years of either sex.

##### d) Exclusion Criteria

- Patients who are having chronic low back pain due to infection, carcinoma, congenital, etc.
- Associated with other systemic disorders.
- History of trauma (accident)
- Post-surgical backache
- Pregnant, lactating woman and all other Gynecological related causes resulting in back pain.

#### Laboratory Investigations (if necessary)

- Blood routine- Hb%, TC, DC, ESR, FBS
- X-RAY (lumbosacral region)

#### Study Design

- It is a single group randomized clinical study with a pre-test and post-test design.

#### Intervention

- 30 patients of *Katigraha* selected randomly for the single group study, are treated with *Vishatinduka Taila Katibasti*.

#### Procedure of *Katibasti*

Classical reference for *Katibasti* procedure is not available based on the explanation given by *Chakrapani* while describing the *Shirobasti, Katibasti* is performed.

#### *Sambhara Samgraha*

- Black gram flour- 350 grams
- Medicated oil- 150-250ml
- Vessel- 3
- Spoon- 1
- Cotton- Q.S
- Hot water bath- 1
- Table

#### *Poorva Karma*

##### Preparation of the Patient

- Patient is advised to be *Laghu koshta*.
- Vitals of the patient is monitored before the procedure and recorded.
- Patient is made to lie down in prone position.

##### Preparation of the Medicine

**Preparation of Dough:** Make thick dough with black gram flour by mixing with adequate quantity of water. Using this dough make circular shaped ring.

**Preparation of Oil:** The medicated oil was made into lukewarm indirectly by placing it over a water bath.

**Pradhana Karma**

- The procedure was explained in brief to the patient.
- The patient was made to lie prone on the table and *Katipradesha* is exposed clearly.
- The circular ring prepared of black gram flour is placed over the *Katipradesha* where the tenderness is more.
- The inner and outer walls of the circular ring were properly sealed over the skin to prevent the leakage of the oil from the circular ring during procedure.
- Then the heated oil was poured in small quantity to check the tolerance capacity of heat by the patient.
- According to the tolerance of the lukewarm oil, it is slowly poured inside the circular ring with the help of a spoon.
- Constant temperature of the oil was maintained inside the circular ring by moving the oil with a finger.
- Once the temperature of the oil is decreased, it was replaced with small amount of hot oil and maintains uniform temperature.

**Paschat Karma**

- After the completion of procedure, the oil was completely removed from the circular ring with the help of a cotton or spoon.
- The ring prepared from the dough was removed from the lumbo-sacral area.
- Mild massage over the area was done in circular direction using the palm.
- Then the patient was advised to take bath using lukewarm water after 15 to 20 minutes.

**Duration**

- The procedure was continued until the patient attains the *Samyak Swinna Lakshanas* or upto 30 to 45 minutes.

**Course**

- The same procedure was repeated for 7 days.

**Reuse of oil**

- Once used oil reused for consequent 3 days. On 4<sup>th</sup> day the oil was replaced with fresh oil.

**Precautions**

- Proper consistency of dough is prepared so circular ring can construct easily.
- It is very essential to prevent the leakage of oil from a ring so sealing of the base of dough is important.
- Temperature of the oil must check before pouring the oil into the circular ring. Uniform temperature should be maintained throughout the procedure.
- After procedure any sensitivity reactions to the oil is noticed.

**Clinical Assessment:** Done before start the treatment, after treatment i.e., on 7<sup>th</sup> day.

**Follow Up:** Approximately 14 days of treatment.

**Assessment Criteria**

- The assessment will be based on the effect of the therapy on the signs and symptoms of the disease following subjective and objective parameters.

**Subjective Parameters****Ruk (pain)**

Severity of Ruk (pain)	Grade
No pain	0
Pain occasionally, no difficulty in walking relives by rest	1
Pain occasionally, difficulty in walking no relief by rest	2
Pain often, difficulty in walking, infers with ADL	3
Severe continuous pain, difficulty in walking, infers with ADL	4

**Sthamba (stiffness)**

Severity of Sthamba (stiffness)	Grade
No stiffness	0
Mild stiffness	1
Moderate stiffness	2
Severe stiffness	3

**Walking Capacity**

Walking time (for 25 feet)	Grade
15 – 20 second	0
21 – 30 second	1
31 – 40 second	2
>40 second	3

**Tenderness**

Severity of tenderness	Grade
No tenderness	0
Says its paining	1
Winces	2
winces and withdraws the part	3
Does not allow to touch the part	4

Range of movements of lumbar spine using Goniometer.

Restricted movements of spine like flexion, extension, right lateral movement, left lateral movement, rotation of spine is measured using Goniometer.

Range of Movements at Lumbosacral Spine		Score
Flexion	More than 90	0
	71 - 90	1
	51 - 70	2
	31 - 50	3
	Upto 30	4
Extension	More than 30	0
	21 - 30	1
	11 - 20	2
	Upto 10	3
Lateral movement	More than 30	0
	21 - 30	1
	11 - 20	2
	Upto 10	3
Rotation	More than 45	0
	31 - 45	1
	16 30	2
	Upto 15	3

Clinical assessment based on the assessment criteria done before the start of treatment, after treatment i.e., on 7<sup>th</sup> day.

Follow up approximately 14 days of treatment.

#### Criteria for Assessing the Total Effect

Considering the overall improvement had shown by the patient in signs and symptoms, the total effect of the therapy has been assessed as below.

Criteria for Assessing Total Effect	
Complete remission	100%
Marked improvement	Above 75%
Moderate improvement	51 - 75%
Mild improvement	26 - 50%
No improvement	0 - 25%

## OBSERVATION AND RESULTS

### Statistical Analysis

The study was carried out on 30 patients of *Katigraha* where patients are randomly selected, treated with *Vishatinduka taila Katibasti* for 7 days. For the assessment of effect of treatment both subjective and objective parameters like pain, stiffness, walking capacity, tenderness, range of movements by using Goniometer are considered on BT (1<sup>st</sup> day), AT (7<sup>th</sup> day) and AF (21<sup>st</sup> day) of treatment. Effects of treatment were computed by grading and the overall effect of the treatment (before and after) was statistically analyzed by using non-parametric test

**Effect of Treatment on Subjective and Objective parameters of *Katigraha* are as Follows**

**Table 1: Effect of *Vishatinduka taila Katibasti* on pain**

Parameter	Negative ranks			Positive ranks			Ties	Z	P	Remarks
	N	MR	SR	N	MR	SR				
AT:BT	30	15.50	465.00	0	0.00	0.00	0	-4.901	<0.001	HS

Wilcoxon signed rank test were used to compare the difference within the groups. Since pain, stiffness, tenderness etc variables were not supporting normal distribution and data is discrete data hence non-parametric Wilcoxon sign rank test to compare before treatment and after treatment were used. But after treatment and after follow up show similar results so, after treatment result was used for generalizing result.

#### The Obtained Results were Interpreted as

Insignificant  $P > 0.05$ , Significant  $P < 0.01$ , Highly Significant  $P < 0.001$ .

Wilcoxon signed rank test on pain showed that 30 patients had a higher pre-treatment pain score than after treatment. For pain median value was 3.00 before treatment which has come down to 1.00 after treatment. There is reduction in the score of pain variable. So, result is statistically significant (P value is less than 0.001).

**Table 2: Effect of Vishatinduka Taila Katibasti on Stiffness**

Parameter	Negative ranks			Positive ranks			Ties	Z	P	Remarks
	N	MR	SR	N	MR	SR				
AT:BT	30	15.50	465.00	0	0.00	0.00	0	-5.007	<0.001	HS

Statistically significant change in total before and after treatment individual with *Katigraha* ( $Z=-5.007$ ,  $P<0.001$ ). For stiffness median value was 1.00 before treatment which has come down to 0.00 after treatment. There is a reduction in the score of Stiffness variable. So, result is statistically significant (P value is less than 0.001)

**Table 3: Effect of Vishatinduka Taila Katibasti on Walking time**

Parameter	Negative ranks			Positive ranks			Ties	Z	P	Remarks
	N	MR	SR	N	MR	SR				
AT:BT	30	15.50	465.00	0	0.00	0.00	0	-5.035	<0.001	HS

Statistically significant change in total before and after treatment individual with *Katigraha* ( $Z=-5.035$ ,  $P<0.001$ ). For walking time median value was 2.00 before treatment which has come down to 0.00 after treatment. There is a reduction in the score of walking time variable. So, result is statistically significant (P value is less than 0.001).

**Table 4: Effect of Vishatinduka Taila Katibasti on Tenderness**

Parameter	Negative ranks			Positive ranks			Ties	Z	P	Remarks
	N	MR	SR	N	MR	SR				
AT:BT	30	15.50	465.00	0	0.00	0.00	0	-5.324	<0.001	HS

Statistically significant change in total before and after treatment individual with *Katigraha* ( $Z=-5.324$ ,  $P<0.001$ ) for tenderness median value was 1.00 before treatment which has come down to 0.00 after treatment. There is a reduction in the score of tenderness variable. So, result is statistically significant (P value is less than 0.001).

#### Objective Parameters Rom of Spine

**Table 5: Effect Vishatinduka Taila Katibasti on Rom Using Goniometer**

Parameter	Negative ranks			Positive ranks			Ties	Z	P	Remarks
	N	MR	SR	N	MR	SR				
Flexion AT:BT	0	0.00	0.00	30	15.50	465.00	0	-4.819	0.000	S
Extension AT:BT	0	0.00	0.00	30	15.50	465.00	0	-5.031	0.000	S
Rt. Lat AT:BT	0	0.00	0.00	30	15.50	465.00	0	-5.324	0.000	S
Lt. Lat AT:BT	0	0.00	0.00	30	15.50	465.00	0	-5.324	0.000	S
Rotation AT:BT	0	0.00	0.00	30	15.50	465.00	0	-5.324	0.000	S

#### Overall effect of Vishatinduka taila Katibasti on Katigraha

Out of 30 patients maximum 40% were shows moderate improvement and 16.67% shows mild improvement most of them are in the 41-50 and 51-60 years age group and chronic duration of onset of the condition. Mostly due to the advanced age, degenerative changes and chronicity of the disease is the main cause for the moderate effect. 36.67% shows marked improvement where most of acute onset, 6.67% shows complete remission of the disease mainly due to young age and onset of the disease within one year.

#### DISCUSSION

##### Discussion on Katigraha

*Katigraha* is mainly due to vitiated *Vata* either *Kevala Vataja* or *Sama Vataja*, with cardinal features like *Ruk* (pain) and *Sthambha* (stiffness) in *Katipradesha* (lumbo-sacral region). Due to *Dhatukshaya* and *Avarana*. In *Dhatukshaya* due to degenerative changes in *Asthi*, *Snayu*, etc along with progressive age. For *Katigraha* specific *Nidana* is not mentioned so, *Samanya Vatavyadi nidana* is considered. Due to *Nidana sevana* in the *Ahara*, *Vihara* and *Anyu Hetu* the *Vata* gets vitiated and aggravated *Vata* lodges where the *Khavaigunyata* is there, here mainly *Vyana vata* and *Shleshaka Kapha* involved. So *Katigraha* is mainly pure *Vata* origin or *Vata Kaphaja*. It is important to examine the patient properly to

know the involved *Doshas*, which helps to treat the condition.

### Discussion on *Katibasti*

In present study *Katibasti* is selected for treatment using *Vishatinduka Taila*. *Katibasti* is a type of *Ekanga Sthanika Sweda* where effected part i.e., *Katipradesha* is treated Using *Mashapishty* circular ring is constructed and placed in the *Katipradesha* for retaining the warm oil for certain duration, the temperature of the oil is maintained throughout the procedure. As warm *Taila* is used to produce *Swedana* effect, it is also called as a variety of *Snigdha sweda*. The *Katibasti* helps in relieving the *Stambha*, *Gaurava*, *Sheeta*, *Shoola* and stimulates the sweat glands, increases perspiration and circulation. *Swedan* has the *Vata Kapha Shamaka* quality so, indicated many *Vata Kaphaja* diseases. In *Katigraha* the cardinal symptoms are *Shoola*, *Stambha* which can be relieved by local *Swedan* so, *Katibasti* is selected for the treatment.

### Action of *Vishatinduka taila* on *Katigraha*

Most of the Ingredients possess *Ushna Veerya* and *Ushna Guna* which reduces *Vata* and *Kapha doshas*. *Amla dravyas* like *Aranala* and *Jambeera* helps in *Vatanulomana*, *Deepana* and *Pachana* which corrects *Dhatvagnimandhya* which is the main cause for *Vatavyadhis*. *Tila taila* and *Eranda taila* due to their *Sookshma* and *Snigdha guna* enters deeper to *Asthi* and *Sandhi* and nourishes them. *Kupilu* and *Eranda taila* has the *Vedana sthapaka guna* which reduces *Shoola*. *Eranda taila* reduces *Sandhishotha*. The active principle of *Kupilu* i.e., *Brucine* has analgesic and anti-inflammatory activity. *Flavonoids* and *phenolic compounds* of *Jambeera* (*Citrus medica* Linn) also have analgesic property. *Secondary metabolites* of *Eranda* (*Ricinus communis* Linn) such as *alkaloid*, *flavonoid*, *saponin*, *terpenoid*, *tannin*, *carbohydrate* and *glycoside* in root. *Alkaloids* have both analgesic and anti-inflammatory property. *Flavonoids* are known target *prostaglandins* which are present in late phase of acute inflammation and pain perception. *tannins* and *saponin* have anti-nociceptive and anti-inflammatory

activity. *Tila taila* has active principle like *Sesamin* which helps in the treatment of pain and inflammation.

### CONCLUSION

*Katigraha* is a *Sthana vishesha vyadhi* where *Katipradesha* is mainly effected with *Ruk* (pain) and *Graha* (stiffness) is the main cardinal symptom. Any of *Brihatrayis* not explained the *Katigraha* as a separate disease. But considered as a symptom of other disorders like *Vataja jwara*, *Ajeerna* etc. It is explained as a separate disease in *Gada Nigraha* by *Acharya Shodala*. *Acharya Bhavaprakasha* and *Vridamadhava* has explained the symptoms and treatment of *Katigraha* in detail. For *Katigraha* separate *Nidana*, *Samprapti*, *Chikitsa* are not explained so, *Vata vyadhi nidana* etc *Nidana Panchaka* are considered for *Katigraha* also.

In present era due to mechanical lifestyle the prevalence of low back pain is very high. *Katigraha* can be considered as low back pain due to muscle sprain, intervertebral disc prolapse and spondylosis are the conditions included under this study. The *Vishatinduka taila Katibasti* is found statistically significant in all subjective and objective parameters. The symptoms of *Katigraha* like *Ruk*, *Sthambha*, tenderness, etc has significantly reduced and range of movement of spine is improved which is measured by using *Goniometer*.

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