Journal of
Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences

Charaka Publications

Indexed

Journal of Ayurveda and Integrated Medical Sciences

A Comparative Clinical Study on *Karpasasthyadi* and *Kolakulathadi Choorna Pinda Sweda* in *Katigraha*

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A B S T R A C T

Background: *Katigraha*, a *Vataja Nanatmaja Vyadhi* is a *Swedayogya* condition. Low back pain is one among the perennial problems and surveys reveal that four out of five people around the world are incapacitated by this condition at some time in their lives. *Swedana* plays a major role in relieving the stiffness, heaviness and coldness of the body and induces sweating. *Choorna Pinda Sweda* is one among *Sankara Sweda* and is performed with bolus of medicinal powders. **Objectives:** In the present study *Karpasasthyadi Choorna* and *Kolakulathadi Choorna* both of which have *Vatakaphahara* properties, were taken up for the comparative study. **Method:** Sample size of 40 patients were selected for the study and randomly assigned into 2 groups with 20 patients in each group. Group KP was treated with *Karpasasthyadi Choorna Pinda Sweda* and Group KK was treated with *Kolakulathadi Choorna Pinda Sweda* for 7 days. **Results:** Results were statistically insignificant in the criteria of pain, stiffness, tenderness, forward bending, backward bending, right lateral flexion, rotation and walking time at $p > 0.05$. Only left lateral flexion was statistically significant at $p < 0.05$. **Conclusion:** *Karpasasthyadi* and *Kolakulathadi Choorna Pinda Sweda* provided equal effect to the patients of *Katigraha*.

Key words: *Katigraha, Choorna Pinda Sweda, Karpasasthyadi, Kolakulathadi, Low Back Pain.*

INTRODUCTION

Katigraha (low back pain), a *Swedayogya*[1],[2] *Vataja Nanatmaja Vyadhi*[3]   is explained as a condition characterized by *Shoola* and restricted movements of *Kati* caused by either *Shuddha* or *Saama Vata*. It has not been explained as a separate disease by any of the *Brihatrayees*. However, *Bhavaprakasha Amavata Adhikara*[4] and *Gadanigraha Vatavyadhi Adhikara*[5] gives a brief description of *Katigraha* as a disease with its etiological factors, symptoms and treatment.

Lower back supports most of the body weight and is subjected to most mechanical stress. Low back pain, one of the most common lifestyle disorders, has been termed as "an illness in search of a disease". Lower back pain, caused by strained muscles (lumbar strain) or ligaments (lumbar sprain) is the most common type of mechanical back pain.[6]

Common protocol treatment of *Vatavyadhi* viz. *Snehana, Swedana, Mridu Samshodhana, Basti* etc. can be adopted in case of *Katigraha*. Previous research shows significant result of *Kolakulathadi*[7] *Pinda Sweda* in *Katigraha* wherein 50% patients got marked improvement and 45% got moderate improvement. In traditional methods, *Kolakulathadi Pinda Sweda* dipped in *Kanji* is commonly practiced. *Kanji* possess *Ushna, Teekshna* and *Amla Rasa*. *Karpasasthyadi*[8] is indicated in pain associated with *Vata* and contains drugs that are *Laghu, Ushna, Teekshna* and *Vatakaphahara*. These properties combined with the properties of *Kanji* may help in

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reducing the *Shoola* and *Stambha* associated with *Katigraha*. So this study is undertaken to compare *Karpasasthyadi* and *Kolakulathadi Pinda Sweda* in the management of *Katigraha* (low back pain) to ascertain the better modality.

OBJECTIVES

1. To evaluate the effect of *Karpasasthyadi Choorna Pinda Sweda* in *Katigraha*.

2. To evaluate the effect of *Kolakulathadi Choorna Pinda Sweda* in *Katigraha*.

3. To compare the effect of *Karpasasthyadi* and *Kolakulathadi Choorna Pinda Sweda* in *Katigraha*.

MATERIALS AND METHODS

Source of Data

Patients were selected from Panchakarma OPD and IPD of Alvas Ayurveda Medical College and Hospital, Moodbidri and from other camps and referrals.

Sampling Method

The patients diagnosed with *Katigraha* were randomly assigned into 2 groups.

Group KP: Patients of this group were administered *Karpasasthyadi Choorna Pinda Sweda* for 7 days.

Group KK: Patients of this group were administered *Kolakulathadi Choorna Pinda Sweda* for 7 days.

Criteria for selection of patients

Inclusion Criteria

- Patients fulfilling the criteria of *Katigraha* and willing for the treatment.

- Patients with low back pain of mechanical origin.

- Patients aged between 20 to 70 years of either sex.

- Patients suitable for *Swedana*.

Exclusion Criteria

- Non-mechanical causes for back pain. (eg:- Sciatica, IVDP, degenerative diseases of lumbar spine, spondylolisthesis, spinal stenosis,

carcinoma, vertebral fracture, systemic/visceral diseases, pregnancy and any infection).

- Traumatic and congenital deformity condition of the spine.

- Any surgical condition.

Treatment Module

Poorva Karma

All the drugs were made into fine powder. Then mixed with sufficient quantity of *Kanji* till a homologous paste was obtained. Kora cloth (45 x 45 cm) was spread on the working table. About 350 gms of the paste was placed on the cloth. The free corners of the cloth approximated, folded in the middle and then tied with a cotton thread (85 - 90 cm length) to make a rounded bolus handle. In this way, 2 *Pottalis / Pinda* were prepared. The patient was made to lie on the table with the low back region exposed. *Sthanika Abhyanga* was done to the low back with *Moorchita Tila Taila.*

Pradhana Karma

Pottalis were heated in sufficient quantity of *Kanji*. One *Pottali* was taken and applied gently over the lumbar region after confirming the temperature of the *Pottali* on dorsum of hand. Both *Pottalis* were used alternatively after reheating to maintain uniform temperature throughout the procedure. Procedure was carried out for 30 min.

Paschat Karma

The treated area was cleaned and the patient was asked to take complete rest for 15-20 min and then allowed to take warm water bath. Patient was later advised with *Pathya* and *Apathya*.

Duration of Treatment

The duration of treatment for both groups was for 7 days.

Follow up

After completion of 7 days of treatment patients were assessed on the 7th day and advised to come for follow up study on the 14th day.

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Parameters for assessment

Subjective parameters

- Pain
- Stiffness

Objective parameters

- Tenderness
- Restricted movements of lumbar spine
  - Forward bending (Schober's test)
  - Backward bending (Schober's test)
  - Lateral bending
  - Rotation
- Functional assessment - Walking time

Grading of Parameter

Pain

Grade – 0	No pain
Grade – 1	Pain occasionally, no difficulty in walking, relieved by rest
Grade – 2	Pain occasionally, difficulty in walking, no relief by rest
Grade – 3	Pain often, difficulty in walking, interferes with ADL
Grade – 4	Severe continuous pain, difficulty in walking, interferes with ADL

Stiffness

Grade – 0	No stiffness
Grade – 1	Mild, occasionally, lasting for less than 1 hour, not interfering with ADL
Grade – 2	Moderate, oftenly lasting for more than 1 hour, interfering with ADL
Grade – 3	Moderate, oftenly lasting for more than 2 hours, interfering with ADL
Grade – 4	Severe, often lasting for more than 3

	hours, interfering with ADL

Tenderness

Grade – 0	No tenderness
Grade – 1	Patient says its paining
Grade – 2	Patient winces
Grade – 3	Patient winces and withdraws the part
Grade – 4	Patient does not allow to touch the part

Right Lateral Flexion

Grade – 0	Able to touch below the knee
Grade – 1	Up to knee
Grade – 2	Up to mid thigh
Grade – 3	Unable to move

Left Lateral Flexion

Grade – 0	Able to touch below the knee
Grade – 1	Up to knee
Grade – 2	Up to mid thigh
Grade – 3	Unable to move

Rotation

Grade – 0	Can rotate easily
Grade – 1	Rotate with difficulty
Grade – 2	Rotate with much difficulty
Grade – 3	Cannot rotate

Functional Assessment - Walking Time

Grade – 0	15 - 20 sec
Grade – 1	21 - 30 sec
Grade – 2	31 - 40 sec
Grade – 3	More than 40 sec

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OBSERVATIONS AND RESULTS

40 patients of *Katigraha* were selected and randomly grouped into two comprising of 20 patients each. Out of the 40 selected, 22 (55%) were females, maximum number of patients belonged to the age group of 20–30 years (32.5%) and most of them were housewives (30%). Strenuous household work and lack of proper exercise to the back may be a contributing factor for predominance in females. Majority of the patients belonged to *Vata Kapha Prakruti* (37.5%). This implies that *Vata Kapha Prakruti* people are more prone to *Vata* dominant diseases. *Madhyama Vyayama Shakti* were observed in most of the patients (77.5%) which shows that low back pain hampers the daily activities of most of the patients.

Statistical Analysis of Pain

Group			Mean	S.D	S.E	t	p
Group KP	BT		1.400	-	-	-	-
	AT	7	0.650	0.444	0.0993	7.550	p<0.001
		14	0.800	0.598	0.134	4.485	p<0.001
Group KK	BT		1.550	-	-	-	-
	AT	7	0.650	0.553	0.124	7.285	p<0.001
		14	0.800	0.716	0.160	4.682	p<0.001

The above table denotes that the effect of treatment on pain was statistically highly significant after treatment and after follow up in both groups.

Statistical Analysis of Stiffness

Group			Mean	S.D	S.E	t	p
Group KP	BT		1.200	-	-	-	-
	AT	7	0.150	0.224	0.0500	21.000	p<0.001
		14	0.150	0.394	0.0881	11.917	p<0.001
Group KK	BT		1.200	-	-	-	-
	AT	7	0.1000	0.447	0.1000	11.000	p<0.001
		14	0.200	0.562	0.126	7.958	p<0.001

The above table denotes that the effect of treatment on stiffness was statistically highly significant after treatment and after follow up in both groups.

Statistical Analysis of Tenderness

Group			Mean	S.D	S.E	t	p
Group KP	BT		0.500	-	-	-	-
	AT	7	0.0500	0.510	0.114	3.943	p<0.001
		14	0.0500	0.510	0.114	3.943	p<0.001
Group KK	BT		0.800	-	-	-	-
	AT	7	0.1000	0.571	0.128	5.480	p<0.001
		14	0.150	0.489	0.109	5.940	p<0.001

The above table denotes that the effect of treatment on tenderness was statistically highly significant after treatment and after follow up in both groups.

Statistical Analysis of Forward Bending

Group			Mean	S.D	S.E	t	p
Group KP	BT		18.300	-	-	-	-
	AT	7	18.850	0.759	0.170	3.240	p < 0.05
		14	18.300	0.657	0.147	4.765	p<0.001
Group KK	BT		17.250	-	-	-	-
	AT	7	18.000	0.716	0.160	4.682	p<0.001
		14	18.200	0.826	0.185	5.146	p<0.001

The above table denotes that the effect of treatment on forward bending was statistically significant after

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treatment and highly significant after follow up in Group KP. Whereas, in Group KK the result was highly significant after treatment and after follow up.

Statistical Analysis of Backward Bending

Group			Mean	S.D	S.E	t	p
Group KP	BT		13.200	-	-	-	-
	AT	7	12.500	0.733	0.164	4.273	p<0.001
		14	12.350	0.671	0.150	5.667	p<0.001
Group KK	BT		12.750	-	-	-	-
	AT	7	12.250	0.827	0.185	2.703	p<0.05
		14	12.100	1.040	0.233	2.795	p<0.05

The above table denotes that the effect of treatment on backward bending was highly significant after treatment and after follow up in Group KP. Whereas Group KK showed significant results after treatment and after follow up.

Statistical Analysis of Right Lateral Flexion

Group			Mean	S.D	S.E	t	p
Group KP	BT		0.550	-	-	-	-
	AT	7	0.400	0.366	0.0819	1.831	p>0.05
		14	0.400	0.366	0.0819	1.831	p>0.05
Group KK	BT		0.900	-	-	-	-
	AT	7	0.550	0.489	0.109	3.199	p<0.05
		14	0.500	0.503	0.112	3.559	p<0.05

The above table denotes that the effect of treatment on right lateral flexion was statistically insignificant in Group KP. However, Group KK showed statistically significant effect after treatment and after follow up.

### Statistical Analysis of Left Lateral Flexion

Group			Mean	S.D	S.E	t	p
Group KP	BT		0.600	-	-	-	-
	AT	7	0.1000	0.513	0.115	4.359	p<0.001
		14	0.150	0.510	0.114	3.943	p<0.001
Group KK	BT		0.750	-	-	-	-
	AT	7	0.550	0.410	0.0918	2.179	p<0.05
		14	0.500	0.444	0.0993	2.517	p<0.05

The above table denotes that Group KP showed statistically high significance after treatment and after follow up in left lateral flexion. Group KK showed statistically significant effect after treatment and after follow up.

Statistical Analysis of Rotation

Group			Mean	S.D	S.E	t	p
Group KP	BT		0.550	-	-	-	-
	AT	7	0.250	0.470	0.105	2.854	p<0.05
		14	0.150	0.503	0.112	3.559	p<0.05
Group KK	BT		0.750	-	-	-	-
	AT	7	0.300	0.510	0.114	3.943	p<0.001
		14	0.250	0.500	0.115	4.359	p<0.001

The above table denotes that Group KP showed statistically significance effect after treatment and after follow up in rotation. Group KK showed statistically highly significant effect after treatment and after follow up.

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Statistical Analysis of Walking Time

Group			Mean	S.D	S.E	t	p
Group KP	BT		0.350	-	-	-	-
	AT	7	0.200	0.366	0.0819	1.831	p>0.05
		14	0.250	0.308	0.0688	1.453	p>0.05
Group KK	BT		0.700	-	-	-	-
	AT	7	0.500	0.410	0.0918	2.179	p<0.05
		14	0.500	0.410	0.0918	2.179	p<0.05

The above table denotes that the Group KP showed statistically insignificant effect in walking time. Whereas Group KK showed statistically significant effect after treatment and after follow up.

Comparative Effect of Intervention in Group KP and Group KK

Feature	Mean		MD	t value	p value
	Group KP	Group KK			
Pain	0.650	0.650	0.150	0.946	p>0.05
Stiffness	0.150	0.1000	0.0500	0.447	p>0.05
Tenderness	0.0500	0.1000	0.250	1.459	p>0.05
Forward Bending	18.850	18.000	0.1000	0.456	p>0.05
Backward Bending	12.500	12.250	0.000	0.000	p>0.05
Right Flexion	0.400	0.550	0.200	1.463	p>0.05
Left Flexion	0.1000	0.550	0.300	2.042	p<0.05
Rotation	0.250	0.300	0.150	0.967	p>0.05

Walking Time	0.200	0.500	0.0500	0.406	p>0.05

The above table shows that the comparative difference in treatment is statistically insignificant (p>0.05) between Group KP and Group KK in all the parameters except for the left lateral flexion.

Overall effect of intervention in both groups after treatment
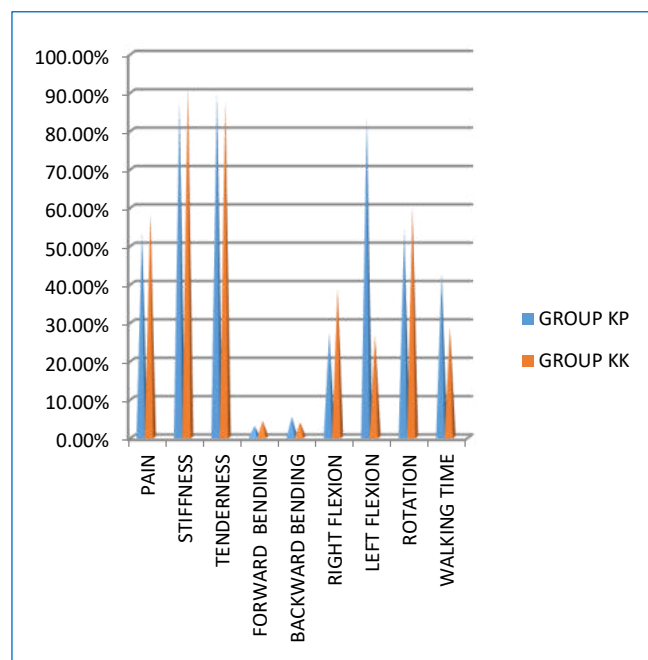
Overall effect of intervention in both groups after follow up
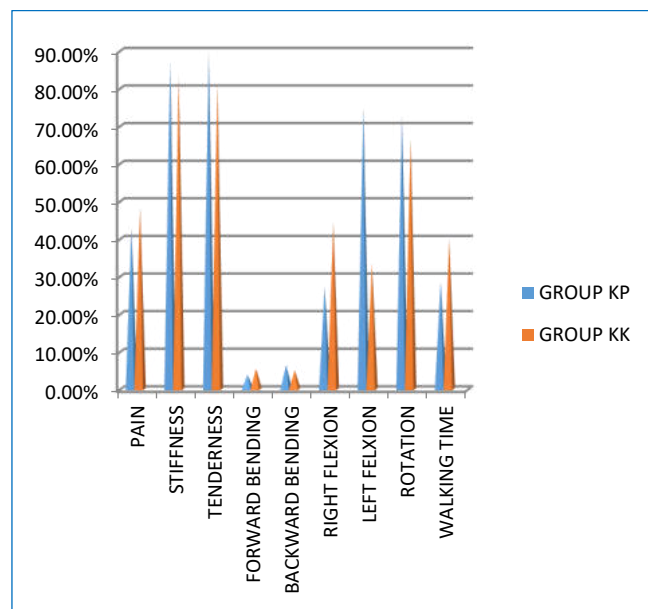
DISCUSSION

Statistically significant difference was found in pain, stiffness and tenderness in both groups. However, on comparison the difference between the two groups was statistically insignificant (p>0.05). Pain, stiffness and tenderness are the cardinal symptoms of *Vata* and *Ama* involvement. *Swedana* is the ultimate choice as it holds good for *Vata Vyadhi* treatment. Here, *Choorna Pinda Sweda* was given as *Snigdha Rooksha Sweda*. The ingredients of both groups shows action of *Shothahara, Vedanasthapaka* and *Swedajanana* due to their *gunas* of *Tikshna Guna, Ushna Virya* and *Katu Vipaka*. All of this controls the vitiated *Vata* and/or *Ama* involved thereby reducing the pain, stiffness and tenderness.

In comparison, only left lateral flexion shows statistically significant difference between the two groups (p<0.05). *Swedana* leads to increased blood supply due to the rise in temperature, which in turn induces muscle relaxation and increases efficiency of muscle. This ensures the optimum conditions for muscle contraction and relieves muscle spasms, thereby contributing in easing the lumbar movements.

When it comes to the mode of action, *Swedakarma* being *Snigdha* and *Ushna* tackles the *Ruksha* and *Sheeta Guna* of *Vata* and helps in relieving stiffness.*Laghu Guna* of *Swedana Dravyas* acts against *Guru Guna.* Moreover, *Swedana* causes the expulsion of *Apya Tatwa* from the body that is *Guru* in nature. *Swedana* drugs by *Ushna* and *Tikshna Gunas* are capable of penetrating the *Srotas* where they activate the sweat glands to produce more sweat. *Laghu* and *Sara Guna* of these drugs enable them to act on the *Dosha* in the channels and excrete them through micropores of the skin in the form of sweat, hence resulting in *Srotoshodhana*.

The increase in metabolism is greatest in the region where most heat is produced (superficial tissues). This heating up of superficial tissues also causes a reflex dilatation of the arterioles. This vasodilatation leads to an increased flow of blood due to which there is not only an increased demand for oxygen and nutrients but also an increased output of waste products, including metabolites. Rise in temperature induces muscle relaxation and increases the efficiency of muscle action, as the increased blood supply ensures the optimum conditions for muscle contraction. This promotes the normal functioning of muscle.Increased activity of sweat glands happens by reflex stimulation of the sweat glands in the area exposed to the heat, resulting from the effect of the heat on the sensory nerve endings.

Most of the drugs used in both groups have dominance of *Tiktha Kashaya Rasa, Ushna Virya* and *Katu Vipaka* and has *Shothahara, Vedanasthapaka* and *Swedanajanana* action. *Moorchita Tila Taila* has dominance of *Kashaya* and *Tikta Rasa*, is *Ushna Virya* and *Katu Vipaka*. *Dhanyamla* has *Amla Rasa*, *Tikshna Guna*, *Ushna Virya* and *Katu Vipaka* and is mainly *Shothahara*, *Vedanasthapaka* and *Swedanajanana* in action.

CONCLUSION

From the above study it can be concluded that both *Karpasasthyadi* and *Kolakulathadi Choorna Pinda Sweda* provided better relief in all the signs and symptoms of *Katigraha*. The significant effect of both groups proves that either may be selected in treating patients with *Katigraha* to reduce signs and symptoms successfully.

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