

A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFICACY OF SHATAKA PRASARINI TAILA KATI BASTI AND MATRA BASTI IN THE MANAGEMENT OF KATIGRAHA (LUMBAR SPONDYLOSIS)

Sreeraj S¹, Karthikeya prasad²

¹PG Scholar, ² Associate Professor, Department of P.G studies in Panchakarma, Karnataka Ayurveda Medical College and Hospital, Mangalore, D.K District, Karnataka,

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ABSTRACT

In a normal daily life, living without ambulation is almost impossible for any human being, from the time immemorial to ultramodern life. Low back pain is a miserable condition which creates obstacle in living of person. Low back pain is the most common cause contributing to a large number of lost work days and disability claim. According to a survey, low back pain is extraordinarily common, and second only to the common cold. There are a number of surveys in multiple countries that reveal a point-prevalence of 17–30%, a 1-month prevalence of 19–43% and a lifetime prevalence of 60–80% and an annual incidence of 5%. Term katigraha has elaborated in classics of Ayurveda suggesting pain at low back. The word Katigraha is originated from the union of two words viz., kati and Graha. The word Kati signifies the region of low back. The term Graha is indicative of pain. Hence the occurrence of pain at low back, which in turns restrict the normal movement is called as katigraha.

An attempt is made to study the efficacy of Shataka prasarini taila both as Kati basti and Matra basti and comparing the therapeutic effect of two different procedures. In the present study both Kati basti and Matra basti are safer and better treatments which fulfils all the criteria in the pathogenesis of Katigraha. Hence an attempt is made to see the comparative effect of 'Efficacy of Shataka Prasarini Taila Kati basti and Matra basti in the management of Katigraha'. The present study is a comparative study to assess the efficacy of procedures Matra Basti and Kati Basti in katishoola. The patients were randomly divided in two groups. The assessment were done before, after treatment and at follow up by using parameter as schobers test, lateral flexion, rotation, flexion, pain and tenderness. The study has shown a significant improvement clinically and statistically among both groups. Both groups have shown significant improvement in all the parameters as before treatment and after treatment. Also the improvement was persisting till follow-up in all the parameters. Except in group A OLB score it was shown that effect of therapy was declining till follow-up in comparison with after treatment. In concern with the samyaka swedana lakshanas, sheetavyuparama and swedasrava observed since first day. Shoolavyuparama observed significantly earlier for Kati Basti than Matra Basti. Stambhanigraha, gouravanigraha and laghutva observed significantly earlier for Matra Basti than neutral spinal bath. Kati Basti needs more duration for the onset of vyadhihani.

KEY WORDS: KATIGRAHA, LOW BACKPAIN, KATI BASTI, MATRA BASTI

INTRODUCTION

In Ayurveda Katigraha is explained one among the 80 nantmaja vatavikara and also as a symptoms in other vyadhi¹. As in Katigraha shoola and restricted movements are present in whole of Katipradesha ie in between uraha and nitamba (lumbo sacral region). The number of patients suffering with low back ache is increasing day by day. Katigraha is characterized by shoola (pain) and stabdhata (stiffness) in Katipradesha². Acharya sharangadhara has also laid stress on Katigraha amnd has included under vataja nanatmaja vyadhi³. In Gadanigraha also Katigraha is explained in vata vyadhi adhyaya⁴. In Ayurvedic samhithas Katigraha has been mentioned as a very common problem, characterized by pain and restricted movements of Katipradesha. The etiopathogenesis of katigraha is suggestive of vatapradhana vyadhi⁵. About 40-80% of general population in life time in India suffer from low back pain due to several stressfull factors seen in their professional or social life and also due to wrong postural habits. It affects both men and women alike and common in the age group of 25-65 years. In view of this a clinical study has been designed as per samanya vata

vyadhi chikitsa as described in vangasena's chikitsa sara sangraha. One of the medicines recommended by him in vata vyadhi chikitsa is Shataka prasarini taila which can be used both internally and externally. An attempt is made to study the efficacy of this taila by administering it as Kati basti and Matra basti in Katigraha w.s.r to lumbar spondylosis. Acharya charaka has mentioned matra basti as brhmana sneha and as katigraha to lumbar spondylosis as a degenerative disorder. Matrabasti with Shataka prasarini taila is taken for the present study.

AIMS AND OBJECTIVES

1. To evaluate the efficacy of Kati basti with Shataka Prasarini Taila in the management of Katigraha.
2. To evaluate the efficacy of Matra basti with Shataka Prasarini Taila in the management of Katigraha.
3. To compare the efficacy of Kati basti and Matra basti with Shataka Prasarini Taila in the management of Katigraha.

METHODOLOGY

METHOD OF COLLECTION OF DATA

Sample Size – 40 patients fulfilling the diagnostic and inclusion criteria of *Katigraha* (Lumbar spondylosis) for the study and randomly assigned into 2 equal groups *Shataka prasarini taila*

Kati Basti (Group A) *Shataka prasarini taila Matra Basti* (Group B).

DIAGNOSTIC CRITERIA

- Shoola,
- Stabdatha
- Episodic mechanical back pain (more than 3 months),
- Tenderness,
- Numbness.

INCLUSION CRITERIA

- Patients of either sex between 20-65 years of age.
- Fulfilling the diagnostic criteria, having signs & symptoms of *Katigraha* and radiological early degenerative changes.
- Able and willing to comply the treatment schedule.

EXCLUSION CRITERIA

- Patients having spinal tumour, malignant diseases of the pelvis, tuberculosis of the vertebral bodies.
- Recent lumbar surgery or implanted instrumentation or prostheses.
- Chronic metabolic pathologies ie, Ankylosing spondylosis, rheumatoid arthritis, psoriatic arthritis or gouty arthritis.
- Pregnancy, Epilepsy or any other serious systemic illness.

STUDY DESIGN

- Patients were assigned into two groups consisting minimum of twenty patients

each group fulfilling the inclusion criteria.

INTERVENTION: Treatment procedure.

Group A (*Kati Basti*)

Poorva Karma: Preparation of the dough (ring). Preparation of the Patient.

Pradhana Karma: Luke warm Shataka prasarini taila poured slowly inside the ring. Heat is maintained for 45 minutes by replacing warm oil frequently

Paschath Karma: Abhyanga is given after the ring is removed.

Group B (*Matra Basti*)

Poorva Karma: *Abhyanga* is done with *Shataka prasarini taila* for Group B followed by *Nadi Sweda*. Patient is advised to have Light Diet, Patient is asked to evacuate bowel and bladder, Patient is made to lie in the left lateral position with the right leg flexed.

Pradhana Karma: The Tip of the catheter is smeared with oil. The anal orifice is lubricated with oil. The catheter is then introduced into the anal canal till 4- 6 inches. When all the oil is pushed into the rectum, the catheter is gently pulled out.

Paschath Karma: *Sphik Thadana* is done. Patient is made to lie on supine

position. Patient is made to rise the legs by flexing the hip 3-4 times.

STUDY DURATION:

- 7 days of Kati basti and Matra basti is done for both the group of patients.
- After 7 days of treatment, the patients of both the groups will be assessed after 14 days, Readings will be taken on 0th, 7th and 21st day.

ASSESSMENT CRITERIA

Patients were graded into 5 groups to assess the overall effect of therapy.

- Cured: 76-100% improvement in subjective and objective parameters.
- Marked Improvement: 51-75% improvement in subjective and objective parameters.
- Moderate Improvement: 26-50% improvement in subjective and objective parameters.
- Mild improvement: < 25% improvement in subjective and objective parameters.
- Unchanged: No improvement in subjective and objective parameters.

RESULTS

Statistical analysis of Subjective and Objective parameters

Group	Mean score				%	S.D (±)	S.E (±)	t value	p value
	BT			BT-AT					
Group A on Katishoola	1.7	AT	1	0.7	41.17	0.571	0.128	5.48	<0.05
		FU1	1.05	0.65	38.23	0.489	0.109	5.940	<0.05
		FU2	1.1	0.6	35.29	0.681	0.152	3.943	<0.05

SUBJECTIVE PARAMETERS

- *Katigraha*
- *Katishula*

OBJECTIVE CRITERIA:

- Foreign body sensation
- *Range of movements*

LABORATORY INVESTIGATIONS:

1. Blood Routine (Hb%, TC, DC, ESR, FBS)
2. X-Ray- LS spine (AP view and Lateral view)

STATISTICAL ANALYSIS

Statistical analysis will be made by using unpaired t-test.

OBSERVATIONS AND RESULTS

The observations give a detail descriptive statistical analysis about all the 40 patients suffering from *Katigraha* according to their Age, Sex, Religion, Education, Socioeconomic status, Marital status, Occupation, *Vyayama*, Duration of illness, Mode of action, Course of disease, *Ahara*, *Prakrithi*, *Lakshanas*.

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		FU3	1.15	0.55	32.35	0.683	0.153	3.584	<0.05
Group B on Katishoola	1.75	AT	1.1	0.65	37.14	0.489	0.109	5.940	<0.05
		FU1	1.15	0.6	34.28	0.598	0.134	4.485	<0.05
		FU2	1.15	0.6	34.28	0.598	0.134	4.485	<0.05
		FU3	1.2	0.55	31.42	0.510	0.114	4.819	<0.05
Group A on FORIEGN BODY SENSATION	1.8	AT	1.1	0.7	38.88	0.470	0.105	6.658	<0.05
		FU1	1.15	0.65	36.11	0.745	0.167	3.901	<0.05
		FU2	1.15	0.65	36.11	0.489	0.109	5.940	<0.05
		FU3	1.2	0.6	33.33	0.503	0.112	5.339	<0.05
Group B on FORIEGN BODY SENSATION	1.8	AT	1.2	0.6	33.33	0.883	0.197	3.040	<0.05
		FU1	1.3	0.5	27.77	0.688	0.154	3.249	<0.05
		FU2	1.3	0.5	27.77	0.688	0.154	3.249	<0.05
		FU3	1.3	0.5	27.77	0.688	0.154	3.249	<0.05
Group A on RESTRICTED SPINE	1.85	AT	1.15	0.7	37.83	0.470	0.105	6.658	<0.05
		FU1	1.3	0.55	29.72	0.605	0.135	4.067	<0.05
		FU2	1.3	0.55	29.72	0.605	0.135	4.067	<0.05
		FU3	1.3	0.55	29.72	0.605	0.135	4.067	<0.05
Group B on RESTRICTED SPINE	1.7	AT	1.2	0.5	29.41	0.513	0.115	4.359	<0.05
		FU1	1.2	0.5	29.41	0.761	0.170	2.939	<0.05
		FU2	1.2	0.5	29.41	0.761	0.170	2.939	<0.05
		FU3	1.25	0.45	26.47	0.887	0.198	2.269	<0.05
Group A on SPINAL MOVEMENT	1.9	AT	1.25	0.65	34.21	0.671	0.150	4.333	<0.05
		FU1	1.25	0.65	34.21	0.671	0.150	4.333	<0.05
		FU2	1.2	0.7	36.84	0.571	0.128	5.480	<0.05
		FU3	1.25	0.65	34.21	0.671	0.150	4.333	<0.05
Group B on SPINAL MOVEMENT	2.1	AT	1.3	0.8	38.09	0.616	0.138	5.812	<0.05
		FU1	1.3	0.8	38.09	0.616	0.138	5.812	<0.05
		FU2	1.3	0.8	38.09	0.616	0.138	5.812	<0.05
		FU3	1.35	0.75	35.71	0.716	0.160	4.682	<0.05

Comparative results of Signs and Symptoms of Group-A and Group-B.

Characteristics Signs and Symptoms	Group-A			Group-B		
	Mean score		Percentage of relief	Mean score		Percentage of relief
	BT	AT		BT	AT	
PAIN IN LS SPINE	1.7	1	41.17	1.75	1.1	37.14
FORIEGN BODY SENSATION	1.8	1.1	38.88	1.8	1.2	33.33
RESTRICTED SPINE	1.85	1.15	37.83	1.7	1.2	29.41
SPINAL MOVEMENT	1.9	1.25	34.21	2.1	1.3	38.09

The percentage of improvement in Group A on PAIN IN LS SPINE is 41.17%, Restricted Forward to Backward Bending is 33.33%, RESTRICTED SPINE is 37.83%, SPINAL MOVEMENT is 34.21%. The percentage of improvement in Group B on PAIN IN LS SPINE is 37.14%, Restricted Forward to Backward Bending is 33.33%, RESTRICTED SPINE is 29.41%, and SPINAL MOVEMENT is 38.09%.

DISCUSSION

DISCUSSION ON CONCEPTUAL STUDY:

Katigraha is described as a most common joint disorder. In this disorder, *Sandhi* is primarily affected due to provocation of *Vata Dosha*. *Sandhi* (joint) is a joint between two *Asthi* lined by *Sleshmadhara Kala*, which secretes

Sleshaka Kapha for lubrication and reducing the friction during movements of *Sandhis*. Various *Snayu* and *Peshi* are responsible for the stability of the joints and support its functions. *Marmas* are vital points, located in the *Sandhis* and protection of that from injuries is utmost important in maintaining the normal functions of *Sandhis*. *Vyana Vayu* is an important functional unit to maintain range of movements of any *Sandhi*. The functions of *Shleshaka Kapha* and *Sleshmadhara Kala* can be co-related with annulus fibrosus and nucleus pulposus which work as cushion and helps for proper functioning of the vertebral joints. The *Marmas* can be considered as the various important structures like nerves, vessels and ligaments which are vital for the functioning of the

joints. Functions of the *Peshi* and *Snayu* are similar to that of muscles and ligaments related to the joints.

All *Vataprakopaka Nidanas* and *Dhatu Kshaya* in *Vardhakya Avastha* (Old age) are responsible for *Katigraha*. The physical activities like *Pradhavana* (excessive physical labor) and *Abhighatas* due to *Prapatana* (fall), *Marma Abhighata* (injury), *Dukha Shayya* (faulty bed) and *Dukha Asana* (faulty position) are being considered as *Vataprakopaka Nidanas* for *Katigraha*. Due to exposure of these *Nidanas*, vitiated *Vata Doṣha* is localized at *Katipradesha* and reduces functions (*Karma Hani*) of the *Kati Sandhi*. Simultaneously *Kaphavrita Vyana Vayu* restricts the *Rasa Rakta Samvahana* (Blood circulation). There by the process of getting nutrition and waste removal is hampered. Gradually nucleus pulposus loses its normal water imbibing abilities & it can be correlated with decrease of *Shleshaka Kapha* between the *Sandhi* due to increase in *Rukṣa* property of *Vayu*.

DISCUSSION ON RESULTS: The data obtained in this clinical study was analyzed by adopting statistical tests as mentioned below:

Katigraha (Backache):- The percentage of relief in *Katigraha* after *Kati Basti* (Group A) was 41.17% which was statistically highly significant ($P < 0.001$). According to Ayurveda, basic humor responsible for causation of *Shoola* in *Vata* and pain is cardinal symptoms in most of *Vatavyadhis*. In *Katigraha Vegvidharana*, *Dhatukshaya*, *Vishmasana* and bad posture habits are main causative factors which leads to body reaction to it. There are changes in bodily humours at biochemical levels that may lead to inflammatory fluids to collect near the site of lesion or all over the body that manifest as symptoms like pain, expulsion of such humours outside body can give relief in pain. So in *Katigraha*, *Kati Basti* is found effective to relieve pain by expelling vitiated *doshas* from affected site. The percentage of relief in *Katigraha* after *Matra Basti* (Group B) was 37.14 % which was statistically highly significant ($P < 0.001$.)

On comparing the effect of both Groups on pain, value of $P = 0.596$ which is statistically non-significant it indicates that *Kati Basti* (Group A) and *Matra Basti* (Group B) have similar effect on *Katigraha* but percentage relief in Group B 37.14% is less than Group A

41.17%. Hence on the basis of clinical findings Group A is said to be better than Group B.

***Katistambha* (Back stiffness):** The percentage of relief in *Katistambha* after *Kati Basti* (Group A) was 38.88% which was statistically highly significant ($P < 0.001$). Back stiffness is caused by *Vata* and *Kapha Dosa*. Due to *Ruksha* and *Khara Guna* of *Vata* produce dryness and decrease the sliminess or *Snigdhatva* or *Shalakshanata* (*Shleshaka Kapha*) in *Mansa Dhatu* (muscle Tissue) that is essential for proper contraction and relaxation of back muscles. The percentage of relief in *Katistambha* after *Matra Basti Guggulu* (Group B) was 33.33 % which was statistically highly significant ($P < 0.001$). In *Katistambha* *Kati Basti* was helpful in pacifying vitiated *Vata* and *Kapha Dosh* because *Shunthi* and *Eranda* has *Ushna Virya Katu Rasa* and *Vata-Kapha shamak* property. On comparing the effect of both Groups on *Katistambha*, value of $P = 0.776$ which is statistically non-significant it indicates that *Kati Basti* (Group A) and *Matra Basti* (Group B) have similar effect on *Katistambha* in *Katigraha* but percentage relief in Group B is less than Group A. Hence on the basis of clinical findings *Kati Basti* is said

to be better than *Matra Basti* in *Katistambha*.

***Katisuptata* (Tingling sensation / Numbness):** 37.83% relief was found in *Kati Basti* (Group A) which was statistically highly significant ($P < 0.001$). According to Ayurveda *Suptata* might have produced by complete obstruction of *Shrotas* of *Vata-vaha Nadi*. According to modern science Tingling sensation / Numbness is found most commonly due to involvement of peripheral nervous system (PNS = Sacral plexus) i.e. Sciatic nerve. Probably it can be due to relaxation of the surrounding muscles and ligaments and might be due to release of pressure on Sciatic nerve. 29.41% relief was found *Matra Basti* (Group B) which was statistically highly significant ($P < 0.001$). In *Katisuptata* *Kati Basti* was helpful in pacifying vitiated *Vata* and *Kapha Dosh* because *Shunthi* and *Eranda taila* has *Ushna Virya Katu Rasa* and *Vata-Kapha shamak* property. Due to such potent quality these drugs able to remove the obstruction in *Srotomarga* of *Vata-vaha Nadi* and increase the *Rasa Rakta sambahana* to the *Kati Sandhi*. On comparing the effect of both Groups on *Katisuptata*, value of $P =$

0.484 which is statistically non-significant it indicates that *Kati Basti* (Group A) and *Matra Basti* (Group B) have similar effect on *Katisuptata* in *Katigraha* but percentage relief in Group A is more than Group B. Hence on the basis of clinical findings *Kati Basti* is said to be better than *Matra Basti* in *Katisuptata*.

Akunchana Prasarana Pravrutti Savedana (Range of motion/ROM)

- In the Group A i.e. *Kati Basti* percentage of relief in *Akunchana Prasarana Pravrutti Savedana* was 34.21% which was statistically highly significant ($P < 0.001$). Aggravation of *Vatadosha* due to *Dhatukshya* may lead to improper joint nourishment & may cause discomforts in the joint mobility. Also due to *Margavarana Janya Samprapti, Vikruta Kapha Avarita Vata* might be hampered the normal *Rasa Rakta Samvahana* at *Katipradesha* and caused for improper joint nourishment and loss of structural arrangement of lumbar joint. The pain and restriction during flexion and extension may be due to compression of nerve roots and stretching of sacro spinalis muscles. 38.09% relief was found in *Matra Basti* (Group B) which was statistically highly significant ($P < 0.001$). On

comparing the effect of both Groups on *Akunchana Prasarana Pravrutti Savedana*, value of $P = 1.0$ which is statistically non-significant it indicates that *Kati Basti* (Group A) and *Matra Basti* (Group B) have similar effect on *Akunchana Prasarana Pravrutti Savedana* in *Katigraha* but percentage relief in Group B 38.09% is more than Group A 34.21%. Hence on the basis of clinical findings *Matra Basti* is said to be better than *Kati Basti* in *Akunchana Prasarana Pravrutti Savedana*.

Forward flexion- In Group A, 52.94% improvement was found which was statistically highly significant ($P < 0.001$). In Group B, 60% improvement was found which was statistically highly significant ($P < 0.001$). On comparing the effect of both Groups on Forward flexion P value is 1.0 which is statistically non-significant and on the basis of percentage relief in Group-B (60%) is more than Group-A (52.94%). Hence on the basis of clinical findings *Matra Basti* is said to be better than *Kati Basti* in Forward flexion

Extension: In Group A, 46.66% improvement was found which was statistically significant ($P = 0.01$). In Group B, 52.38% improvement was

found which was statistically highly-significant ($P < 0.001$). On comparing the effect of both Groups on Extension P value is 0.556 which is statistically non-significant in Extension, it indicates that *Kati Basti* (Group A) and *Matra Basti* (Group B) have similar effect on *Katisuptata* in *Katigraha* but percentage relief in Group B 52.38% is more than Group A 46.66%. Hence on the basis of clinical findings *Matra Bastis* said to be better than *Kati Basti* in Extension.

Visual analogue scale (VA scale):

The percentage of relief in VA scale after *Kati Basti* (Group A) was 47.05% which is statistically highly significant ($P < 0.001$). The percentage of relief in VA scale after *Matra Basti Guggulu* (Group B) was 50% which was statistically highly significant ($P < 0.001$). On comparing the effect of both Groups on VA scale P value is 0.134 which is statistically non-significant, it indicates that *Kati Basti* (Group A) and *Matra Basti* (Group B) have similar effect on VA scale in *Katigraha* but percentage relief in (Group B) 50% is more than Group A 47.05%. . Hence on the basis of clinical findings *Matra Bastis* said to be better than *Kati Basti* in VA scale.

Straight leg raising (SLR): The percentage of relief in SLR after *Kati Basti* (Group A) was 41.17% which is statistically highly significant ($P < 0.001$). The percentage of relief in SLR after *Matra Basti Guggulu* (Group B) was 45% which was statistically highly significant ($P < 0.001$). On comparing the effect of both Groups on SLR-test, P value is 1 which is statistically non-significant, it indicates that *Kati Basti* (Group A) and *Matra Basti* (Group B) have similar effect on SLR in *Katigraha* but percentage relief in Group B 45% is equal the percentage relief Group A 45%. Hence on the basis of clinical findings *Kati Basti (Group-A)* and *Matra Basti (Group-B)* are Equally effective in SLR test.

Probable Mode of Action of *Matra Basti*:

Kashaya Dravya in the formulation mainly has *Kapha Vatahara* properties, *Kalka* which is the *Prana Dravya* of *Basti* along with helping formation of the much required emulsion (due to presence or saponins in these drugs) for easy absorption in large intestine also possess *Vata Kapha Shamaka* properties. Further, drugs have their own pharmacological properties like analgesic, anti-inflammatory,

adaptogenicity, anti-nociceptive activity and anti-oxidant property which augments the action of *Basti*. Fructose, glucose, minerals and vitamins present in honey, electrolytes present in salt, different fatty acids (mainly in length) present in *Sneha*, active principles present in drugs of decoction and *Kalka* absorb due to cohesive action of fructose. *Basti dravya* enters into the *Pakwasaya*. It is the place where the water and minerals are absorbed in proximal colon. Sodium and potassium which are essential fundamental factors for nerve impulses and Vitamin B12 which is essential factor for the development and proper functioning of the nervous system are also absorbed from the colon i.e. *Pakwasaya*. *Basti* karma helps to increase the absorbing capacity of the colon by its actions. Behind the *Pakwasaya*, there are large numbers of nerve plexuses originating from the hypo gastric plexus and lumbo-sacral plexus etc. These plexuses will get nourishment and soothing effect from *Basti* karma because *Basti* mainly acts on the *Pakwasaya*, here it nourishes, purifies and expels the unwanted toxins from the body. *Basti dravya* prepared by *Madhu*, *Sneha* etc helps in formation of

bacteria in large intestine, some bacteria synthesize vitamins like B and K which are essential for the maintenance and nourishment of nervous system probably to some extent. Approximately 50% of the drugs that is absorbed from the rectum will bypass the liver, the potential foe hepatic first passes the rectum. Another probable method is based on *Veerya*. It is possible the *Veerya* of the *Basti dravya* pass through the autonomic nervous system and expels out vitiated *Dosha* from the body. It is described in the modern physiology that the wall of the rectum has pressure receptors. Whenever the stool enters the rectum, these receptors are stimulated and the defecation reflex is initiated. When *Basti Netra* is introduced in the rectum the same phenomenon may take place, which results in initiation of defecation reflex due to visceral distention and pressure response. *Saindhava* which fulfills the requirement for generating action potential. The release of catecholamine occurs during visceral distention and probably this leads to the development of pressure response and ultimately the defecation reflex is initiated. Also, salt forms an integral part of the body fluids and its

concentration governs the movement of fluids in various compartments under the osmotic pressure. When hypertonic solution is given in the form of *Basti dravya* the introduced fluid circulates from low density to high-density solution i.e. from blood vessels to the outer fluid in the gastro intestinal tract. As mentioned above plants like *Erandmoola, etc. in Kashaya* have been pharmacologically proven to have analgesic, anti-nociceptive effect and as per classics all these plants have *Vedana Sthapana* effect. *Katigraha* or *Ruk* (constant pain at lumbar region) has been mentioned as a symptom of *Purishavrita Vata* and *Pakvashayagata Vata*. Thus, *Apana Vayu* has as important role as *Vyana Vayu* in the production of *Kati Shula*. As many of the patients had history of constipation, *Basti* by removing the impacted stool mass and pacifying *Vata* in *Pakvashaya* has direct effect on *Shoola*.

Thus, *Eranda* having anti-inflammatory, analgesic properties may help in reducing compression of nerve by reducing inflammation of articular cartilages as well as disc. But an equal contribution would have been through the systematic exercise therapy introduced to the patients which might

elicit mechanical traction at lumbar region thereby reducing compression at nerve roots.

Similarly, effect of *Abhyanga* and *Svedana* is worth mentioning, as *Abhyanga* is said to be *Mardavakara* and *Svedana* is said to be *Shulaghna*. Thus irrespective of the material used these two procedures will have a certain positive effect towards reducing *Shoola*.

Probable mode of action of *Kati Basti*:

Due to *Sukshma Guna of Eranda Taila* it penetrates into micro channels which removes *Srotorodha*. Due to *Katu Rasa and Ushna virya of Eranda Taila* it *Potentiate Agni*. Due to *Srotosuddhi and Agnideepana, Ama-pachan* will occur at *Dhatu level* and there is *samana of Vata-Kapha dosha*. Which reduces the sign and symptom of *Katigraha (Lowbackache)*. Due to *Madhura vpiaka of Eranda Taila* they have *Vata shamak effect* which directly results in removing the sign and symptom of *Katigraha(Lowbackache)*. *Eranda Taila (Castor oil)* is a very effective natural anti-inflammatory agent. High vitamin E content contributes significantly to the anti-inflammatory properties of castor oil.

The natural vitamin E present in castor oil has a number of tocopherol specific moisturizing, anti-inflammatory and anti-oxidant property. Ghasemzadeh *et al.* validated the medicinal potential of the leaves and young rhizome of *Z. officinale* (Halia Bara) and the positive relationship between total phenolics content and antioxidant activities in *Z. officinale*.

Gingerol, shogaol, and other structurally-related substances in ginger inhibit prostaglandin and leukotriene biosynthesis through suppression of 5-lipoxygenase or prostaglandin synthetase. Additionally, they can also inhibit synthesis of pro-inflammatory cytokines such as IL-1, TNF- α , and IL-8

CONCLUSION

Group A treated with Kati Basti has shown significant improvement in all the parameters as before treatment and after treatment. Also the improvement was persisting till follow-up in all the parameters. Group B treated with Matra Basti has shown significant improvement in all the parameters as before treatment and after treatment. Also the improvement was persisting till follow-up in all the parameters except OLB score. In OLB

score effect of therapy was declining till follow-up in comparison with after treatment but not raised upto as that of before treatment. Here Kati Basti which does vata shaman, snayumamsamruduta whereas Matra Basti is snigdha which does vata shaman, snayumamsamruduta, snigdhatata and dridhikaran therefore the effect of Kati Basti is persisting than that of Matra Basti. In comparative analysis group B showed higher reduction in schobers test than treated with Group A. Lateral flexion, rotation, tenderness and flexion showed equal improvement in both groups. Statistically in comparative analysis OLB score has shown equal improvement in both the groups. As shoovlyuparam observed earlier in Kati Basti whereas stambhanigraha, gouravanigraha, laghutwa observed earlier for Matra Basti this denotes the strength of two therapies differs at certain instances.

REFERENCES

1. Sushruta; Sushruta Samhitha; Hindi translation by Dr. Anant Ram Sharma, published by Chaukambha Shubharathi Prakashan Varanasi; Reprint-2006, Volume II Nidana sthana page no.459;1:23-

24. Volume II Nidana sthana page no.489;4:5
2. Sharangadharacharya; Sharangadhara Samhitha; edited with foot notes by Pf. Parashuram.
3. Sharangadara samhita English translation by Dr. Himasagara Chandra murthy published by chaukamba Sanskrit samsthan 2007 edition, chapter 7, page no. 84.
4. Shodala: Gada Nigraha Hindi translation by Indradev Tripathi published by chaukamba Sanskrit samsthan, 2005 edition, 2nd volume, chapter 19, page no. 508.
5. Bhavaprakasha: Bhavaprakash of Shri Bhavamishra with hindi commentary by Pandit Shri Brahma Shankara Mishra published by chaukamba Sanskrit bhavan Varanasi 8th edition, vata vyadhi adhikara | 53. page no. 276.

Corresponding author:

Sreeraj S

PG Scholar, Department of P.G studies in Panchakarma, Karnataka Ayurveda Medical College and Hospital, Mangalore, D.K District, Karnataka, India

Email: sreerajs777@gmail.com

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