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Effect of *Shampakadi Niruha Basti* in the management of *Katigraha* w.s.r. to Lumbar Disc Herniation - A Pilot Clinical Study

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ABSTRACT

Lumbar disc herniation (LDH) is the most common lumbar spinal disorder that produces low back pain and/or leg pain. A herniated disc is a displacement of disc material (nucleus pulposus or annulus fibrosis) beyond the intervertebral disc space. LDH may be correlated with *Katigraha* in Ayurveda on the basis of clinical features of the disease where *Vatadosha* with or without *Aamadosha* settles in *Katipradesh* (lumbar region). and cause pain and stiffness. In the present study 6 patients of lumbar disc herniation were advised the treatment modalities like *Shampakadi Niruha Basti* along with *Rasnaerandadi Kashayam* and *Trayodasang Guggulu* orally for 16 days which was found very effective in relieving the sign and symptoms of LDH.

Key words: *LDH, Katigraha, Shampakadi Niruha Basti.*

INTRODUCTION

Lumbar disc herniation and disc protrusion are one of the most common spinal degenerative disorders, which leads to low back pain and radicular leg pain.[1] It is a pathological condition that frequently affects the spine in young and middle aged adults.[2] This condition is defined as a displacement of disc component (nucleus pulposus and annulus fibrosis) beyond the intervertebral disc space.[3] The incidence of herniated disc is about 5 to 20 cases per 1000 adults annually and is the most common in people in their third to the fifth decade of life with a male female ratio of 2:1. The estimated prevalence of symptomatic herniated disc of lumbar spine is about 1-3% of patients.[4]

Kati, Shroni and *Trika* are the synonymously used in *Ayurvedic* classics which usually refers to lumbar region. Lumbar disc herniation may be correlated with *Katigraha* based on clinical features of the disease. *Katigraha* is an independent disease entity described in *Gadnigraha* in *Vatavyadhi* chapter,[5] with the same description made available in *Bhavaprakash Samhita* where the *Vata Dosha* with or without *Ama Dosha* settles in *Kati* and causes pain and stiffness in the *Katipradesh* (lumbar region).[6] *Aacharya Sharangdhar* also mentioned *Katigraha* in *Vataja Nanatmaja Vyadhi.*[7]

In this disease pain, stiffness and numbness are found to be present at lumbar region, therefore local *Abhayanga* and *Swedana* are claimed to be very effective and provide relief. *Basti Chikitsa* is mainly useful in disorders related to *Vata Doshas*. It is highly acclaimed by *Aacharya Charak* and described as *Ardha Chikitsha* or some *Aacharya* accept as *Sampporna*

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Chikitsa.[8] *Aasthapan Basti* (*Niruha Basti*) is a medicated enema containing, honey, salts and medicated drugs are said to be effective in pain relief with providing *Bala, Varna* and *Mardavta.*[9] Various *Vatik* are formulated for alleviating *Vata Dosha* in different classics. Among than *Shampakadi Niruh Basti* is described in Sushruta Samhita (Su.Chikitsa 38/43-45) which is specially indicated in *Katishool*. *Rasna Erandadi Kashyam* is also indicated for alleviation of *Vata* Dosha (*Sahasra Yog* 1/448). *Trayodasanag Guggulu* is also well known for its *Vata Shamak* & *Vrihan* effect. So, in this clinical study *Shampakadi Aasthapan Basti* along with *Rasana Erandadi Kashayam and Trayodasang Guggulu* are planned as treatment regimen for managing *Katigrah.*

Aims and Objectives

To evaluate the effects of *Shamapakadi Niruha Basti* along with *Rasnaerandadi Kashayam and Trayodasang Guggulu* in the management of *Katigraha* w.s.r. to lumbar disc herniation.

Material and Methods

In the present study, 6 patients who were attending the OPD and IPD of Pt. Khushilal Sharma Govt. Auto. Ayurvedic Hospital Bhopal with clinical sign and symptoms of *Katigraha* w.s.r. to LDH were selected for the study.

Diagnostic criteria

- Pain in lower back with or without radiation.
- Stiffness of the lumbar region.
- Restriction of movement of lumbar region.
- Tingling sensation or Numbness in one or both lower limbs.
- MRI changes suggestive of lumbar disc herniation.

Inclusion criteria

- Patients fulfilling the diagnostic criteria.
- Patients willing to sign the consent for participation in study.
- Patients fit for *Basti Karma*.

Exclusion criteria

- Patients contraindicated for *Basti Karma.*
- Patients having Spinal tumour, Tuberculosis, malignant disease of the pelvis, fracture of spine, Congenital or acquired skeletal deformity.
- Any traumatic condition of spine leading to paralysis.
- Recent lumbar surgery or implanted instrumentation or prosthesis.
- Pregnant and lactating women.
- Having Chronic pathologies e.g., Ankylosing spondylosis, Rheumatoid Arthritis, Psoriatic arthritis, Gouty Arthritis or any other chronic systemic illness.

Treatment regimen

1. *Mahanarayan Taila* for local *Abhyanga.*
2. *Kala Basti* (16 days)
3. *Shamapakadi Niruha Basti*[10] - 625ml
4. *Anuvasana Basti* with *Sahachara Taila* - 100ml
5. *Shamana* drugs
   a. *Rasnaerandadi Kashayam*[11] 20 ml twice a day.
   b. *Trayodashanga Guggul*[12] 1gm bd

Ingredients of *Shamapakadi Niruha Basti*

Dravya	**Botanical name**	**Dose**
Madhu	Honey	70ml
Saindhav lavana	Rock salt	5gm
Sahachara Taila		70ml
Kalka Dravya		
Pippali	*Piper longum*	10 gm
Satpushpa	*Juniperus communis*	
Priyangu	*Callicarpa macrophylla*	
Mulethi	*Glycyrrhiza glabra*	

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Hriber	*Anethum sowa*	
Rasanjana	*Berberis aristate*	
Indrayava	*Holorrhena antidysenterica*	
Nagarmotha	*Cyperus rotundus*	
Kwatha Dravya		
Shampak (Phala Majja)	*Cassia fistula*	450 ml
Eranda	*Ricinus communis*	
Punarnava	*Boerhavia diffusa*	
Ashwagandha	*Withania somnifera*	
Bilva	*Aegle marmelos*	
Agnimantha	*Premna mucronate*	
Shyonak	*Oroxylum indicum*	
Patala	*Sterospermum suaveolens*	
Gambhari	*Gemilna arborea*	
Bala	*Sida cordifolia*	
Rasna	*Pluchea lanceolata*	
Guduchi	*Tinospora cordifolia*	
Devadaru	*Cedrus deodara*	
Madanphala	*Randia spinosa*	

Rasna Erandadi Kashyam[11]

Drug	Latin Name	Family
Rasna	*Pluchea lanceolata*	Compositae
Yastimadhu	*Glycorriza glabra*	Fabaceae
Amrita	*Tinospora cordifolia*	Menispermiacea
Bala	*Sida cordifolia*	Malvaceae
Gokshura	*Tribulus terrestris*	Zygophyllaceae
Eranda	*Ricinus communis*	Euphorbiacea

Ingredients of *Trayodashang Guggulu*[12]

Contents	Latin Name	Proportion
Aabha (Babbul)	*Acasia arabica*	1 part
Ashwagandha	*Withania somnifera*	1 part
Hapusha	*Juniperus communis*	1 part
Guduchi	*Tinospora cordifolia*	1 part
Shatavari	*Asparagus recemosus*	1 part
Gokshur	*Tribulus terrestris*	1 part
Vriddhadaru	*Argyria speciosa*	1 part
Rasna	*Pluchea lanceolata*	1 part
Shatapushpa	*Foeniculum valgare*	1 part
Karchur	*Curcuma zedoaria*	1 part
Yavani	*Trachhyspermum ammi*	1 part
Shunthi	*Zingiber officinale*	1 part
Guggulu	*Commiphora mukul*	13 parts
Ghee	Clarified butter	1/2 part

Duration of study - 16 days

Follow up period - 15 days

Criteria of Assessment

Both subjective and objective parameters were employed for the assessment of the effect of the treatment.

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Subjective Criteria

Pain

Parameters	Gradation
No pain	0
Mild pain but no difficulty in walking	1
Moderate pain and slight difficulty in walking	2
Severe pain with severe difficulty in walking	3

Stiffness

Parameters	Gradation
No stiffness	0
Sometime for 5-10 minutes	1
Daily for 10-30 minutes	2
Daily for 30-60 minutes/more than 1hrs	3

Numbness

Parameters	Gradation
No numbness	0
Occasionally once in a day for 5-10 minutes	1
Daily once in a day for 10-30 minutes	2
Daily for more than 30-60 minutes	3

Tingling

Parameters	Gradation
No tingling	0
Occasionally once in a day for 5-10 minutes	1
Daily once in a day for 10-30 minutes	2
Daily for more than 30-60 minutes	3

The Roland-Morris low back pain and disability questionnaire.

Please read instructions: When your back hurts, you may find it difficult to do some of the things you normally do. Mark only the sentences that describe you today.

[ ] I stay at home most of the time because of my back.

[ ] I change my position frequently to try to get my back comfortable.

[ ] I walk more slowly than usual because of my back.

[ ] Because of my back, I am not doing any jobs that I usually do around the house.

[ ] Because of my back, I use a handrail to get upstairs

[ ] Because of my back, I lie down to rest more often.

[ ] Because of my back, I have to hold on to something to get out of an easy chair.

[ ] Because of my back, I try to get other people to do things for me.

[ ] I get dressed more, slowly than usual because of my back.

[ ] I only stand up for short periods of time because of my back.

[ ] Because of my back, I try not to bend or knee down.

[ ] I find it difficult to get out of a chair because of my back.

[ ] My back is painful almost all of the time.

[ ] I find it to turn over in bed because of my back.

[ ] My appetite is not very good because of my back.

[ ] I can only walk short distance because of my back pain.

[ ] I have trouble putting on sock (or stocking) because of the pain in my back.

[ ] I sleep less well because of my back.

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[ ] because of my back pain, I get dressed with the help of someone else.

[ ] I sit down for most of the day because of my back.

[ ] I avoid heavy jobs around the house because of my back.

[ ] Because of my back pain, I am more irritable and bad tempered with people than usual.

[ ] Because of my back, I go upstairs more slowly than usual.

[ ] I stay in bed most of the time because of my back.

Score: _____

Objective Criteria

SLR test

Angle	Gradation
Equal to or greater than 90°	0
71-<90°	1
51-70°	2
31-50°	3
< 30°	4

Braggard's sign test

Grade 0 - Negative

Grade 1 - Positive

Femoral nerve stretch test

Grade 0 - Negative

Grade 1 - Positive

Statistical analysis

The score was analysed statistically in terms of mean values of B.T. (Before Treatment), A.T. (After Treatment), S.D. (Standard Deviation) and S.E. (Standard Error). The results obtained were considered significant for p value <0.01 and insignificant for p value >0.05.

RESULTS

On Subjective Parameters

Table 1: Showing effect of therapy in subjective parameter.

SN	Symptoms	Mean		Difference	% of changes	SD	W	P
		BT	AT					
1.	Pain	2.667	0.1667	2.5	93.73	0.5477	21	<0.05*
2.	Stiffness	2.00	0.1667	1.833	91.65	0.7528	21	<0.05 *
3.	Numbness	1.167	0.3333	0.8333	71.40	0.9832	6	>0.05***
4.	Tingling	1.667	0.3333	1.3333	79.98	1.033	15	>0.05***
5.	Ronald and morris law	2.167	0.3333	1.833	84.58	0.4082	11	<0.005**

* - Significant, ** - High Significant, *** - Not significant

In present pilot study, the effect of therapy was analysed by computed statistically using Wilcoxon test for subjective parameter the obtained result was interpreted as follow-

- The pain criteria before treatment mean score of "SEI was 2.667, which was reduced to 0.1667, after treatment with percentage improvement of 93.73%, which was statistically significant.
- The stiffness criteria before treatment mean score of "SEI was 2.00, which was reduced to 0.1667, after treatment with percentage improvement of 91.65%, which was statistically significant.
- The numbness sensation criteria before treatment mean score of "SEI was 1.167, which was reduced to 0.3333 after treatment with percentage improvement of 71.40%, which was statistically not significant.
- The tingling sensation criteria before treatment mean score of "SEI was 1.667, which was reduced

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to 0.3333 after treatment with percentage improvement of 79.98%, which was statistically not significant.

- The Ronald & morris law criteria before treatment mean score of "SEI was 2.167, which was reduced to 0.3333 after treatment with percentage improvement of 84.58%, which was statistically very significant.

On Objective criteria

Table 2: Showing effect of therapy in objective parameter

SN	Objective Parameter	Mean		Difference	% of changes	SD	t	p
		BT	AT					
1.	SLRT	1.833	0	1.833	1	0.7528	5.966	<0.005*
2.	Braggard's sign test	5	0	0.5	0.1	0.5477	2.236	>0.05***
3.	Femoral nerve stretch test	0.3333	0	0.3333	1	0.5164	1.581	>0.05***

SD: Standard Deviation, SEM: Standard Error of Mean, * - Significant, *** - Not significant

The effect of therapy was analyzed by computed statistically using Wilcoxon test for objective parameter the obtained result was interpreted as follow-

- The SLRT Testcriteria before treatment mean score of "SEI was 1.833, which was reduced to 0, after treatment with percentage improvement of 1%, which was statistically significant.
- The Braggard's sign test criteria before treatment mean score of "SEI was 5, which was reduced to 0, after treatment with percentage improvement of 0.1%, which was statistically not significant.
- The Femoral nerve stretch test criteria before treatment mean score of "SEI was 0.3333, which was reduced to 0 after treatment with percentage improvement of 1%, which was statistically not significant.

Follow-Up Result

After completion of the treatment period the patients were followed up for another 15 days to assess further any complain of lower back ache.

Adverse Effects

There were no any adverse effects or adverse drug reaction was noted during and after the study duration.

DISCUSSION

Discussion on Diseases

LDH is a common lower back disorder in the present era. Disturbed lifestyle and postural defects leads to this disorder. A herniated disc is a displacement of disc material beyond the intervertebral disc. A variety of therapeutic intervention has been proposed for the treatment of symptomatic LDH, including conservative treatment with NSAIDs, analgesics, steroids and physical therapy and surgical treatment with Discectomy, epidural steroid injections but in modern medicine most probably used intervention is surgical process which is not much effective. LDH may be correlated with *Katigraha* in Ayurveda classics, *Gadanigraha* considers *Katigraha* to be one among the *Vatavyadhis*. It clearly projects *Vata Dosha* as the major factor behind the whole pathogenesis.it explains that the vitiated *Vayu* takes its *Ashraya* in the *Kati Pradesha* causing pain and stiffness.

Discussion on Therapy

A convincing treatment approach is available in Ayurveda for this disease. Ayurveda advocates *Panchakarma* therapies like local *Abhyanga, Swedan, Kati Basti* and *Basti* procedure along with *Shamana* therapy in the management of *Katigraha*.

Sthanik Abhyanga (massage) acts on the root of *Mamsavahasrotas* i.e., *Snayu, Twak* and *Raktavahini*. The medicated oil used for massage remain in the skin for 300 seconds (*Matras*) and gradually and

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consecutively permits through different tissues elements like *Rakta, Mamsa, Meda, Asthi, Majja,* the medicated oil takes about 100 *Matras* each, to persuade and permeate through these different categories of tissue elements. It may thus nourish the superficial and deep muscles and make the joints stable.

Swedan removes stiffness (*Stambhagna*) and excess *Vata* and *Kaphadosha* (*Kapha-Vata Nirodhana*). Thus, by its action, the breakdown the pathogenesis by removing obstruction in the micro channels (*Sroto Sanga Vighatana*) may take place and stiffness of the joints relieved.[13]

Mode of action of *Basti*

Acharyas's told the importance of *Vayu* in the production of diseases and there is none other than *Basti* is the best treatment for aggravated *Vata*. So, *Acharya Charaka* praised *Basti* as half of the treatment and some scholars called it complete treatment.

Chakrapani quotes *Parashara's* opinion *"Mulam Gudam Shareerasya, Sirah Tatra Pratistitah: Sarvam Shareeram Pushnati Murdhanam Yavadashritah"* the *Guda* is the root of the body & also it is the *Pratishtana* of *Siras*. *Basti* produce *Tarpan* of the *Moordagata Siras* & also increases the strength, potency.

According to Goyal & Hirano (1996) the Enteric Nervous System (ENS) is a collection of neurons in the G.I.T. that constitutes the "Brain of Gut" & can function independent of C.N.S. The ancient wisdom of Ayurveda considering the *Pakvasaya* as the seat of *Vata*. *Basti* drug reaches first to the *Pakvasaya* and then to the *Grahani*. *Pakvasaya* is the site of *Purishadhara Kala* and *Grahani* is the site of *Pittadhara Kala.* So, *Basti* directly acts on *Purishdhara Kala* and *Pittadhara Kala.* Commentator *Dalhana* has commented that *Purishdhara* and *Asthidhara Kala* are same and *Pittadhara Kala* and *Majjadhara Kala* are one and same. So, from these evidences it is clear that *Basti* has directed action on *Asthi* and *Majja Dhatu.*

Shamapakadi Niruha Basti contains *Aragwadha, Eranda, Punarnava, Ashwagandha* which mainly pacifies the *Pristha-Trik-Uru Shula* and reduces symptoms like stiffness and numbness by its *Vaatkaphhar* property indicated in pain and stiffness located lumbar region.[14]

Sahachara Tail (*Anuvasana*) is indicated in *Daruna Vatavyadhi* by *Acharya Charaka* so, it is helpful in pain and nourish the root place of *Vayu* (*Pakwashaya*).

Discussion on *Shaman* Drug

Rasnaerandadi Kashayam contains *Rasna, Eranda, Sahachara, Devadaru, Musta, Ativisha* having *Rasa Tikta-Katu, Veerya Usna* and *Vatakaphahara* effect and slightly *Mutrala, Sophagna, Sula Hara* effects.

Trayodashanga Guggul is a combination of 13 herbs including *Guggulu* processed in ghee. The ingredients like *Shatavari, Ashwagandha*, and *Guduchi* are known as rejuvenators and provides strength to *Dhatus*. *Shunthi* and *Ajamoda* improve *Jatharagni* whereas *Babbul* is especially acts on *Asthidhatwagni*. Ghee with its *Yogavahi* property helps in better absorption and penetration of the drug. Thus, *Trayodashang Guggulu* directly impacts on the etiology of *Katigata Vata* and helps in the disintegration of the *Samprapti* and settles down the vitiated *Vata Dosha.*

Discussion on Result

Shamapakadi Niruha Basti shown better effect on subjective criteria i.e., pain with percentage of improvement 93.73%. In stiffness the percentage of improvement was 91.65% which was statistically significant.

The pilot study (Effect of Erandamooladi Niruha Basti with Rasnaerandadi Kashayam in the Management of Katigraha w.s.r. to Lumbar Disc Herniation - A Pilot Clinical Study by Dr. Neetu Dixit in Journal WJPR Article Received on 09 June 2020) with *Erandamooladi Niruha Basti* shown better effect on subjective criteria i.e., pain with percentage of improvement 81.25%. In stiffness the percentage of improvement was 90.94% which was statistically significant.

Therefore, it can be discussed that *Shamapakadi Niruha Basti* shown better result than *Erandamooladi Niruha Basti* on comparing result.

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Thus, this treatment regimen shows significant improvement in the *Katigraha* (LDH).

Conclusion

The result shows that *Shamapakadi Niruha Basti* and *Rasnaerandadi Kashayam* with *Trayodashanga Guggul* were found very effective in relieving the sign and symptoms in LDH (*Katigraha*) with increased functional activities. However, further work should be done on large samples to draw the final conclusion.

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