



## Research Article

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### PANCHAKARMA PROCEDURES ALONG WITH TRAYODASHANGA GUGGULU IN THE MANAGEMENT OF KATISHOOL WITH SPECIAL REFERENCE TO LUMBAR SPONDYLOSIS

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#### ABSTRACT

Lumbar spondylosis is a common age related degenerative condition in the region of Lumbar spine with gradual formation of bony overgrowths (Osteophytes). No satisfactory management is available in modern medicine. Here a case series is reported in which 24 diagnosed patients of Lumbar spondylosis were divided into two groups and treated with Panchakarma procedures and Ayurvedic oral medication. The Ayurvedic diagnosis was considered as Katishool. In group A, 12 patients were treated with Trayodashanga guggulu for 16 days in a dose of 01g twice in a day with lukewarm water after meal. In group B, 12 patients were treated with Panchtikta kshira basti (Kala basti manner) and Kati basti with 100ml of Dashamula Taila (oil) /day for 45 min. along with Trayodashanga guggulu in the dose of 01g twice in a day for 16 days with lukewarm water after meal. Assessments were done on Modified Oswestry Low Back Pain Disability Index (MOLBPDI questionnaires), Pain on Visual Analogue Scale (VAS), tenderness and walking time duration (10 meter walking test). For statistical analysis paired and unpaired t test were used. Significant results were obtained in both groups on all parameters. Group B was more effective. It can be concluded that Panchtikta kshira basti and Kati basti with Dashmool taila, along with Trayodashanga guggulu are very effective treatment modalities and can be used effectively in the management of Lumbar spondylosis.

**Keywords:** Kala basti, Lumbar spondulosis, Kati basti, Panchtikta ksheer basti, Trayodashanga guggulu.

#### INTRODUCTION

Lumbar spondylosis is a common age related degenerative condition in the area of Lumbar spine with gradual formation of bony overgrowths (Osteophytes) predominantly those at the anterior, lateral and less commonly posterior aspects of the superior and inferior margins of vertebral bodies.<sup>1</sup> Pathology of Spondylosis increases with age. If it is allowed to progress, it can lead to a narrowing of the spinal canal, resulting in impingement of the spinal cord, which can cause symptoms of poor bladder control, unsteady gait, and other severe neurological problems. If severe, it may cause pressure on nerve roots lead to loss of muscle functions and radiating pain to the back of legs. The prevalence of Lumbar spondylosis is 13% in the third decade, rising to nearly 85% by age of 70 years in both men and women, ranged from 15% in the fourth decade to 80% in those older than 60 years. The highest incidence age group is 45 to 65 years. Incidence of Lumbar spondylosis in Jammu was 34.7% in 2003, in rural North India it was 23% in 2003, in West Bengal was 48.8% in 2007, in Andhra Pradesh was 92% in 2011, in Maharashtra 67% in 2011, in Jaipur 28.5% in 2012 and in Kolkata 31.1% in 2012. In Ayurveda there is no exact clinical entity mentioned in classics as Katishool, but it can be considered under the Vata vyadhi (~musculoskeletal and neurological diseases) as Asthigata Vata (vitiated Vata affecting bones) because pathogenesis of Katishool is Asthi pradoshaj (~degeneration of bone tissue) in the Kati (lumbosacral region) region due to vitiation of Vata.<sup>2</sup> Line of treatment of Vata Vyadi are abhyanga (~massage), swedana (~fomentation), basti (~medicated enema) and nivata sthana (resides in a warm place where temperature fluctuations are minimum) etc.<sup>3</sup> So these line of management was adopted for Katishoola. Basti and Kati basti (local application of oil surrounded by a ring made of black

gram flour) are being practiced widely by majority of Panchkarma physician because of its effectiveness. According to Ayurveda, Basti (enema) with substance like milk, ghee and tikta rasa dravya (bitter taste drugs) is best suitable for the Asthi pradoshaj vikar (~diseases occurring in bones). Keeping these in view, Panchtikta kshira basti was selected in Kala basti (16 enema) manner for this trial. Modern medicine provides various type of medical and surgical therapy but none of the therapy is satisfactory in Lumbar spondylosis, all the treatments are having just symptomatic and conservative relief. As a holistic medical system, Ayurveda is having safe and cost effective remedies. So through Ayurveda we may find a safe, cost effective and successful therapy for lumbar spondylosis.

#### Aim and objective

Hypothesis is postulated to be proving as Shodhana (bio purification therapy) is foremost effective than the Shamana therapy (palliative therapy). Evaluation of the efficacy of Shamana drug and some Panchkarma procedures such as Panchatikta kshira basti and Kati basti in the management of Katishool (Lumbar spondylosis) as well as comparison of Shodhana (biopurification) therapy and Shamana (pacification) therapy in the management of Katishool were the aims and objectives of present case series.

#### Study design

This was a prospective clinical case series in which 24 registered patients that fulfil the inclusion criteria were randomly allotted and treated in two parallel groups. These patients were selected from O.P.D. and I.P.D. of National Institute of Ayurveda. The case series was conducted in accordance with the Helsinki Declaration.

#### Diagnostic criteria

Walking disability (10m walking test), tenderness with confirmative degenerative changes in X-rays of Lumbar spine anteroposterior and lateral view, fulfilling the Modified Oswestry Low Back Pain Disability Index (MOLBPDI).

#### Inclusion criteria

Patients that fulfilling the diagnostic criteria and ages between 30-60 years were included.

#### Exclusion criteria

Lumbar carcinoma, Diabetes Mellitus, Chronic Renal Failure, Rheumatoid Arthritis, Gout, Systemic Lupus Erythematosus, Tuberculosis in bone, Ankylosing Spondylosis, pregnancy, lactation or any other systemic illnesses.

#### Laboratory investigation

Complete blood count (CBC), erythrocyte sedimentation rate (ESR), haemoglobin (Hb%), C reactive protein(CRP), rheumatoid factor(RF), Renal Functional Test, X-ray (Anteroposterior & Lateral view).

### MATERIAL AND METHOD

**Group A:** 12 patients were treated with Trayodashanga guggulu for 16 days in a dose of 01g twice a day with lukewarm water after meal.

**Group B:** 12 patients were treated with Panchtikta kshira basti (in Kala basti manner) and Kati basti with 100ml of Dashamool taila (oil)/day for 45 min along with Trayodashanga guggulu in the dose of 01g twice a day for 16 days with lukewarm water after meal.

In the present case series, Basti was scheduled in Kala basti manner. At the beginning 02 Anuvasan (an oil enema) was given and then 06 Niruha (decoction enema) and 6Anuvasan was given at alternate days and finally 02 Anuvasana was given.

#### Contents of Panchatikta Kshira Basti<sup>4</sup>

- Honey - 50 g
- Rock salt(Saindhava lavana) -10 g
- Oil-Bala Taila -50 ml
- Cow's Ghee - 50ml
- Paste - Kalka- 40 g
- Decoction -Panchatikta kwath - 400 ml
- Milk - Kshira- 400ml

**Ingredients of Panchatikta kshira basti** – Patol (*Trichosanthes dioica*), Vasa (*Adhatoda vasica*), Saptaparna (*Alstonia scholaris*), Nimba (*Azadirachta indica*), Rasna (*Pluchea lanceolata*) for decoction and Shatpuspa (*Anethum Sowa*), Pippali (*Piper longum*), Madanphal (*Randia dumetorum*) as a Kalka (paste) were used.

#### Method of preparation of Panchatikta kshira basti<sup>4</sup>

Approximately 16 times of water is taken and 100g of Panchtikta yavkuta (coarse powder of Panchtikta drugs) is added into it and boiled up to ¼ of total. So ultimately 400 ml decoction can be obtained. 400 ml of milk is added to the prepared Panchtikta decoction and boiled it again until water is completely evaporated. Then 10g of rock salt and 50 ml of honey are mixed together in mortar. Honey, is first of all poured and triturated well with rock salt. 50 ml of Bala Taila and 50ml of cow's ghee is poured in the mixture of honey and rock salt and triturated well. To prepare Kalka 40g of particular powder is taken and adequate amount of water is added into it and mixed vigorously to obtain paste like consistency. Then it is added to

the mixture and mixed well till the mixture become homogenous. Decoction and mixture in the mortar are to be mixed and stirred well. 600ml of Basti dravya (materials of enema) is made lukewarmly by keeping it into hot water.

#### Method of administration of Basti<sup>5</sup>

**A)Purva Karma (pre-operative procedure)** - After evacuation of the stool and urine the patients were subjected to local Abhyanga (massage) and Nadi swedana (fomentation therapy) at the lower abdomen and lumbosacral region with Dashamool taila and Dashamool vapor.

**B) Pradhana Karma(main procedure)** – Advised to patient in left lateral position with left leg held out stretched while the right leg flexed at knee and held near abdomen. Movements at the time of Basti were prohibited. Basti netra (nozzle) and Basti putaka (polythen bag) were used for administration of Basti. Basti netra was attached to the Basti putaka for enema which already filled with Basti dravya (materials of enema) and Netra was lubricated with oil and introduced it into already oil anointed anus steadily and slowly parallel to the vertebral column with gently pressing of Basti putaka. Care should be taken that some Basti dravya should be remained inside the polythen bag to prevent entering the air into the anus. Netra was removed after administration of Basti and patient was advised to relax in supine position. For Niruha basti (decoction type of enema) patient was advised to sit in toilet.

**C) Paschatha Karma (post-operative procedure):** After evacuation of Basti without taking any effort asked to patient to have a bath with lukewarm water.

**Method of administration of Anuvasan basti:** Anuvasan basti was given with the help of plastic syringe and 08 no. rubber catheter. Patients were advised to have some food before coming for Anuvasana basti. The Dashamool taila should be warmed and the plastic syringe was filled with it. Then the rubber catheter was attached to the syringe. After performing local Abhayanga, lubricated catheter was inserted into anus slowly. Then the oil was poured steadily by pressing the handle. Catheter was removed after administration of Basti and patients were advised to relax in supine position. Then gentle pats were given on the soles and buttocks of the patients. After sometimes patients were advised to get up from the table and to take rest in their beds.

#### Follow up

Follow up was conducted in every two weeks upto one month.

#### Assessment criteria

Subjective improvement and clinical improvement was assessed based on relief of sign and symptoms scored on Visual Analogue Scale(VAS) ranging from 0-10 for pain and tenderness, MOLBPDI and distance walked in 10m (10m walking test)<sup>6</sup> were evaluated at before treatment and after treatment. MOLBPDI is sort of some questionnaires regarding the low back pain was used as the main subjective measure of functional disability & these questionnaires are divided into 10 sections. Grading of MOLBPDI are,

- 0-Pain free full activity
- 1- perform independently with pain
- 2-perform with minimal assistance
- 3- perform with maximum assistance
- 4-unable to perform

#### Statistical analysis

Statistically in terms of mean score (X), Standard deviation (S.D.), Standard Error (S.E.). Paired and unpaired t test was

carried out at the level of 0.05, 0.01, and 0.001 of p levels. The results were interpreted as:

P>0.05 Non significant (N.S.)

P< 0.05 Significant (S.)

P< 0.001 Highly Significant (H.S.)

## DISCUSSION

Lumbar spondylosis is involving the changes of the disc, facet joints and their complimentary ligaments and muscle system which respond to stress at Lumbar intervertebral joints. Katishoola is not considering as a separate disease in Ayurveda classics but it mentioned under Vata vyadhi due to its sign and symptoms. General line of treatment of Vata Vyadi is Abhyanga, Sweda, and Basti etc. So this can be adopted for the management of Katishoola. Basti is the superlative treatment among in Panchkarma therapy for Vata vyadhi.<sup>8</sup> Various study have been published which shows the inspiring result of Basti in various Vatavyadhi.<sup>9, 10</sup> Good relief with the use of Anuvasan basti in lumbar spondylosis is also documented.<sup>11</sup> Niruha basti retards aging and maintains the life-span.<sup>12</sup> Basti with substance like milk, ghee and Tikta rasa dravya is a superlative treatment for the Asthi pradoshaja vikara. Keeping in this view that Panchtikta kshira basti is useful in the management of Katishool.

In this case series we found the high incidence of Katishool in female than male with age group above than 50 years of age. Labour class and housewives had shown high incidence. According to Prakriti (body constitution) backache predominantly found in Vata kapaja prakriti (a type of body constitution). Most of the patients were obese. There was prevalence of Mandagni (low digestive power). Maximum patients were reported Asthivaha srotodushti (~vitiation of bones) and mainly showed Apathya viharaja sewana (uses of unwholesome daily routines). All the patients were found under some mental stress. Excessive exercise or lack of exercise, low calcium diet, improper sitting or prolong sitting, sedentary life style & weight bearing activities were found. All are attributing in the manifestation of Vatavyadhi and Katishool.

In present case series 24 diagnosed Lumbar spondylosis patients were distributed in two groups. Group A was treated with internal medicine of Trayodashanga guggulu. Group B was treated with Panchtikta khira basti in Kala Basti (16 basti) manner with Dashamool taila Anuvasan and Kati basti with Dashamool taila along with Trayodashanga guggulu. All patients had completed the treatment duration. On analysis of result significant improvement was found in both group. Before treatment, MOLBPDI score for Group A was 2.5 and it changed to 1.40 after treatment with SD  $\pm$  0.31. The results was significant(<0.001). Before treatment VAS score for Group A was 3.3 and it changed to 1.6 after treatment with SD  $\pm$  0.48. The results was significant(<0.001). Before treatment tenderness for Group A was 1.57 and it changed to 0.85 after treatment with SD  $\pm$  0.43. The results was significant(<0.02). Before treatment walking time duration for Group A was 7.10 and it changed to 4.20 after treatment with SD  $\pm$  0.56. The results was significant(<0.02). Before treatment MOLBPDI score for Group B was 3.0 and it changed to 1.0 after treatment with SD  $\pm$  0.51. The results was significant(<0.001). Before treatment VAS score for pain in Group B was 3.40 and it changed to 0.60 after treatment with SD  $\pm$  0.48. The result was significant(<0.001). Before treatment tenderness for Group B was 1.50 and it

changed to 0.23 after treatment with SD  $\pm$  0.35. The result was significant(<0.001). Before treatment walking time duration for Group B was 7.0 and it changed to 3.50 after treatment with SD  $\pm$  0.47. The results was significant(<0.001). Both groups were showed significant improvement after one month treatment compared to base line data(p<0.001). In inter group comparison it was found that Group B was more significant than the Group A on all the parameters. These result showed that Trayodashanga guggulu either alone or along with Panchtikta khira basti and Kati basti were effective in the management of lumbar spondylosis. But Trayodashanga guggulu was more effective along with Panchtikta kshira basti and Kati basti due to synergistic effect.

Thus classical preparation namely Trayodashanga guggulu, and Panchtikta kshira basti and Kati basti were effective in the management of lumbar spondylosis for the current case series. Ushna veerya (hot potency), Madura vipaka (~one of the taste takes place after completion of digestion), Snigda (oleated) & Sukshma (subtle) Guna (properties) as well as properties of Vedanasthapana(diminution of pain sensation), Vatanulomana (normalisation of vata functions), Shothahara (antioedemous), Aamapachana(digestion), are likely helpful in the management of Katishool. Taila is considered to the best formulation for managing Vata disorders and the drugs of the Dashamool taila which was used in Kati basti and Basti karma is also having all these properties. Thus this oil was helpful in treating low backache.

There is dominance of Akasha mahabhuta in Tikta rasa. Though Tikta rasa aggravate Vayu, it may enhance the pathogenic process of Katishool. One of the main principle of Ayurveda treatment is 'Stanam Jayate Purvam'. Katishool specially associate the site of Sandhi(joints) at Kati region. Generally Shleshaka kapha (a type of Kapha dosha) is located in Sandhi. So by applying Tikta rasa it helps to decrease the vitiated Kapha dosha. Further Tikta rasa increases Kharata(roughness) in Dhatu (tissue elements) thus improve the quality of Asthi dhatu (bone tissue). Mainly Panchtikta kshira have the properties of Tikta and Katu Rasa (bitter and pungent taste), Ushna veerya & Madura vipaka. The Tikta & Katu Rasa improve the Dhatvagni (digestive power). So all Dhatus can get proper nourishment with uses of it. So Asthi dhatu(bone tissue) and Majja dhatu (bone marrow) Kshaya (depletion of tissue elements) can be reduced. So degeneration process may be reduced. Tikta rasa has Lekhana(scraping) property, it helps in the weight reduction & it helps in the protection of weight bearing joint specially Kati and Trika sandhi (lumbosacral and coccyx region). Milk has Madura rasa, Guru (heaviness) and Pachhilya guna (sticky property) and Jeevaneeya (rejuvenation) properties. So patient gets the effect of Rasayana (immunomodulation property), Vrishya (aphrodisiac), Balya (strength), Shramahara (antifatigue), Medhya (nervine tonic), and Brihamana (nourishing) benefits. Rock salt disintegrates Pachhilya property of honey and potentiates the power of penetration of micro channel of Basti. Honey is extensively Yogavahi (~property to assimilate other properties of other drugs and procedures), Rasayana and Tridosahara (elimination of augmented Vata, Pitta and Kapha). It scraps adhered Doshas from Srotas. Kalka serves the functions of Utkleshana (augmentation) & Doshaharana (elimination of waste product) depending on its contents. It also gives required thickness to the Basti material so that the Basti may be retained in Pakvashaya (large colon) for appropriate time.

**Table 1: The pattern of clinical recovery in 12 patients of *Katishool* treated with Group A**

Symptoms	Number of Patients	Mean		Diff.	% of Relief	SD	SE	t	p	Result
		BT	AT							
Pain	12	3.3	1.6	1.70	51.50	0.48	0.15	11.1	<0.001	HS
MOLBPDI	12	2.50	1.40	1.10	44.00	0.31	0.1	11.0	<0.001	HS
Tenderness	07	1.57	0.85	0.72	45.45	0.43	0.18	3.8	<0.02	S
Walking time duration	10	7.10	4.20	2.90	42.85	0.56	0.17	5.01	<0.02	S

BT: Before Treatment, AT: After Treatment

MOLBPDI- Modified Oswestry Low Back Pain Disability Index, BT =before treatment, AT =after treatment, SD = standard deviation, SE = standard error, t = t value, p = probability, < = smaller than. S-significant , HS-highly significant

**Table 2: The pattern of clinical recovery in 12 patients of *Katishool* treated with Group B**

Symptoms	Number of Patients	Mean		Diff.	% of Relief	SD	SE	t	p	Result
		BT	AT							
MOLBPDI	12	3.0	1.0	2.0	46.66	0.51	0.16	8.57	<0.001	HS
Pain	12	3.40	0.60	2.80	59.33	0.48	0.15	11.1	<0.001	HS
Tenderness	08	1.50	0.23	1.27	52.33	0.35	0.12	7.0	<0.001	HS
Walking time duration	10	7.00	3.50	3.50	45.45	0.47	0.14	6.70	<0.001	HS

BT: Before Treatment, AT: After Treatment

MOLBPDI- Modified Oswestry Low Back Pain Disability Index, BT =before treatment, AT =after treatment, SD = standard deviation, SE = standard error, t = t value, p = probability, < = smaller than. S-significant , HS-highly significant

**Table 3: Comparison of Groups A and Group B unpaired t test**

Assessment criteria	Group A			Group B		
	t	p	results	t	p	results
MOLBPDI	10.0	<0.001	HS	9.43	<0.001	HS
Pain	13.1	<0.001	HS	13.1	<0.001	HS
Tenderness	4.8	<0.02	S	8.0	<0.001	HS
Walking time duration	4.01	<0.02	S	5.70	<0.001	HS

MOLBPDI- Modified Oswestry Back Pain Disability Index, t = t value, p = probability, < = smaller than. S-significant , HS-highly significant

Trayodashanga guggulu is a compound herbal formulation of Ayurveda drugs and classical preparation indicated in Vatavyadhi. The main content is Guggulu. It is having properties of Tikta, Katu rasa, Laghu (lightness), Ruksha, Teekshna (~penetrating property/sharpness) Guna Ushna veerya and Katu vipaka. Ushna property is considered as Vatahamaka (pacifying of Vata Dosha).<sup>13</sup> According to Sushruta, Guggulu has Lekhana property which helps in reduction of body weight. Due to Katu rasa it increases Agni(appetite). Thus helps in the improvement of general conditions of the patient. It may prevent the degeneration of the bones. Due to Ruksha and Ushna veerya this act as a Vedanasthapana.

Thus Panchtikta kshira and Thrayodashanga guggulu have the drugs which are predominant in Ushna veerya which helps in nourishing the Asthi Dhatu. Milk and the Sneha (oily substance) of the Basti are also helping to pacify the aggravated Vata and subsides the pain.

Basti has the Srothoshodaka property(bio purification of micro channels). By this way the drug can properly reach upto cell level due to biopurification of micro channels. Sneha pacify the Vata, softness the body and increase laxity due to its Snigdha property. So it is concluded that patients suffering from low back pain was more benefited with Shodhana therapy as well as conservative therapy and Shamana therapy.

This study has been done as a case series for Lumbar spondylosis and it has shown significant result, so it is recommended that similar clinical study should be carried in large number of patients at multicenter and for a longer duration to evaluate and analyze the results. Being a chronic degenerative nature of disease, follow up should be kept for longer duration.

## CONCLUSION

In combine therapy group, Panchtikta kshira basti and Dashamool Kati basti, along with Trayodashanga guggulu has synergistic effects in the management of Katishool and results are more encouraging. Therefore it can be concluded that Panchtikta kshira basti and Kati basti, along with Trayodashanga guggulu are very effective treatment modalities and can be used effectively in the management of Katishool(Lumbar spondylosis).

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