

International Research Journal of Ayurveda & Yoga

Vol. 5 (8),26-32, August, 2022

ISSN: 2581-785X;<https://irjay.com/>DOI: [10.47223/IRJAY.2022.5804](https://doi.org/10.47223/IRJAY.2022.5804)

A Comparative Clinical Study of *Matra Basti* and *Kati Basti* with *Nirgundi Taila* in the Management of *Kati Graha* (Lumbar Spondylosis)

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Article Info

Article history:

Received on: 04-07-2022

Accepted on: 21-08-2022

Available online: 31-08-2022

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ABSTRACT:

Lumbar spondylosis can be described as all degenerative conditions affecting the discs, vertebral bodies, and associated joints of the lumbar vertebrae. Spondylosis is very common disease (more than 1 crore cases per year in India). Low back pain affects approximately 60%-80% of adults and LS is responsible for about 10% of all the back pain conditions. Lumbar spondylosis has been correlated with *Kati Graha* due to similarity of clinical manifestation. *Kati Graha* has been categorized under *Vatika Nanatmaja Vyadhi*. It is *Shosha*, *Stambha* and *Shula* predominant *Vyadhi*. This Clinical study shows that *Nirgundi Taila Matra Basti* and *Nirgundi Taila Kati Basti* give good result, but comparison in both therapies, *Nirgundi Taila Matra Basti* provided much better relief in the cardinal symptoms of *LS*.

Keywords: *Katigraha* Lumbar Spondylosis, *Nirgundi Taila*

INTRODUCTION

There is no single disease in *Ayurveda* that can be exactly correlated with Lumbar Spondylosis. According to *Nidana* and symptoms of disease *Katigraha* is near to Lumbar Spondylosis. *Vata* is associated with *Aama*, the natural aging phenomenon *Dhatukshaya* in terms of degeneration is prime cause of the origin of *Katigraha* /Lumbar Spondylosis. *Saama* or *Niraama Vayu* movement in to *Kati* hence this suggests of presence of *Dhatu Kshayatmaka* and *Marga Avarodhaka* type of *Samprapti*.¹Lumbar spondylosis May also lead to abnormal growths on the vertebrae. Pain can be produced when a neural foraminal stenosis is formed, which comes from the formation of osteophytes In some cases the degenerative changes in the

lower back due to lumbar spondylosis can lead to compression of the spinal nerve resulting in lower back pain and pain that radiates to the buttocks and legs. The patient can also experience joint stiffness, lower back pain, leg pain, numbness which can limit motion. Often is the lumbar region the most affected, because of the exposure to mechanical stress. The L4-L5 segment is most frequently affected compared to other lumbar segments. It is due to its heavy load-bearing function and wide range of flexibility. However, L1-L2, L3-L4 and L5-S1 can also be involved. *Katigraha* is one of the *Vatavyadhi*, which is commonly found in today's practice. In pre-sent study we selected *Nirgundi Taila Matra Basti* and *Nirgundi Taila Kati Basti*.^{2,3}



MATERIALS AND METHODS

Ethical Clearance No-DSRRAU/UCA/IEC/19-20/287

1. Selection of patients:-

60 Clinically diagnosed patients of Lumbar Spondylosis (*Kati Graha*), willing to be part in study and follow up were selected on the basis of medical history sheet i.e according to *Trividha*, *Ashtavidha*, *Dashavidha Pariksha* and necessary investigation from OPD/IPD of P.G. department of *Panchakarma* in DSRRAU, Jodhpur. They have been given selected treatment in accordance with the inclusion and exclusion criteria.

2. Selection of drugs:-

Nirgundi Taila for *Matra Basti* (internal administration) and *Kati Basti* (external application) was prepared in the Pharmacy of DSRRAU Jodhpur as per classical texts.

3. Study Design:-The present study supposed to be-

- Level of study - OPD / IPD
- Masking - Open label
- Number of Group – Two
- Sample size - 60
- Duration: 7 days
- Follow up period - 15th day and 30th day of enrollment
- **Grouping of patients:-**As per Inclusion and Exclusion criteria 60 patients will be divided randomly into two groups (30 patients in each group).
- Group A: *Nirgundi Taila Matra Basti*
Drug: - *Nirgundi Taila*
Dose: one and half *pala* (60ml)
- Group B: *Kati Basti*
Drug: - *Nirgundi Taila*

4. Inclusion Criteria: -

- Patients suffering from classical signs and symptoms of *Kati Graha* (Lumbar Spondylosis).
- Patients between 25 yrs. to 55 yrs. of age.
- Patients regardless of their gender, ethnicity or socioeconomic status.
- A patient who is willing and able to take part in the study for a period of 7 days.
- Patient *Yogya* for *Basti Karma*.

5. Exclusion Criteria: -

- Patients with major systemic disorders that may interfere with the course of treatment.
- Recent Lumbar or spinal surgery or implanted instrumentation or previous surgery for Lumbar spondylotic myelopathy, Pregnant Women's.

- Patients suffering from Scoliosis, kyphosis, Potts spine, Metastatic disease of spine, Stenosis of Spinal Canal, uncontrolled hypertension and history of HIV.
- Patients with acute/infectious/metabolic/chronic illnesses (like Rheumatoid Arthritis, DM, Gout, TB, SLE, Ankylosing spondylitis etc)

6. Assessment Criteria:-

Subjective parameters-table 1 Pain Assessment by VAS (Visual analog scale)

Objective Parameters-Table 2

Table 3 Shows INVESTIGATIONS: –

OBSERVATIONS

1. Maximum incidence was in the age group 45-55 years, Male sex, Hindu religion, Married, Urban Area, Middle class, Vegetarian dietary habit, Graduate educated patients.
2. Majority of the patients i.e. 43.33% were having *Krura Koshttha* and 46.67% were having *Vishamaagni*.
3. Maximum number of patient's i.e. 0-1 year's chronicity, 83.33% patients had no Family history of Lumbar Spondylosis. 83.33% were having gradual onset.
4. Maximum number of patient's i.e. 78.33% having *Vata* predominant *Prakurti*, 70% patients had *Madhyama Saara*, 58.33% patients had *Madhyama Samhanana*, 53.33% patients had *Madhyama Satva*, 48.33% patients had *Madhyama Satmya*, 55.00% patients had *Madhyama Vyayama Shakti*, 92.5% of the patients had *Madhyam Pramana*.
5. Out of 60 patients maximum i. e. 60 patients (100%) presented with the symptom of *Ruka* (Pain). 37 patients (61.66%) were presented with the symptom of *Stambha* (Stiffness) and 31 patients (51.67%) were presented with the symptom of Tingling & numbness, and 51 Patients (85%) were Presented with the Symptom of Painful movement, followed by 29 patients (48.33%) presented with *Toda* (Pricking sensation).described as main symptoms of Lumbar Spondylosis were observed in all patients of this series.
6. In X-Ray findings reduction of space between L₁-L₂ found in 13.33% patients whereas space between L₂-L₃ was diminished in 15% patients, space between L₃-L₄ was diminished in 16.67% patients, space between L₄-L₅ was diminished in 40% patients, Reduction of space between all vertebrae was found in 15% of patients. Presence of Osteophytes was found in 58.33% of patients and Degenerative Changes was found in 60.00% of patients. Abnormal Lumbar Lordosis was found in 45% of patients.

7. No side-effects were found in any patients during the course of therapy. All the patients tolerated *Panchakarma* procedures very well.

RESULTS

Effect of therapy in intra group:-

- i. Subjective parameters (wilcoxon matched pairs signed ranks test)table no.: -4
- ii. Objective parameters (paired ‘t’ test) table no.: -5

Effects of therapy in inter group:-

- i. Subjective parameters (mann-whitney test table no.: -6
- ii. Objective parameters (unpaired t test) table no 7

Comparison of overall effect in both groups:-

- i. Percentage relief in two groups in subjective parameters table no 8
- ii. Percentage reliefs in two groups in objectives parameters table no 9

Total effect of therapy in the patients of *katigraha*:-
table no.: - 10

DISCUSSION

30 patients of *Kati Graha* (Lumbar Spondylosis) were treated with *Matra Basti* i.e. (Group A). This therapy has provided extremely significant relief in Back pain, *Stambha* (Stiffness), Painful movement, Numbness, Tingling sensation. Extremely Significant result was found in objective parameter X-Ray, Walking Distance Test and SLR test and Very Significant result was found in HB and not significant result was found in RBS, TLC. 30 patients of *Kati Graha* (Lumbar Spondylosis) were treated with *Kati Basti* i.e. (Group B). This therapy has provided extremely significant relief in Back pain, *Stambha* (Stiffness), Painful movement and tingling sensation. Numbness found very significant results. Extremely significant result was found in objective parameter X-Ray, Walking Distance Test and SLR. Not significant relief in found HB, RBS and TLC. Inter Group comparison *Pain* (P value =0.0003), Painful movement (P value=0.0008) and Numbness (P value =< 0.0001) Showed extremely significant result. Stiffness (P value =0.2554) Showed not significant result. Tingling (P value =0.0253) Showed significant result. Non Significant result was found in

objective parameter X-Ray, Walking Distance Test, SLR, RBS, TLC and HB. Extremely significant result was found in Walking Distance Test. Percentage relief was more in Group-A compared to Group- B in all cardinal symptoms of Lumbar Spondylosis. Therapies (*Matra Basti*) are more effective treatment modality than *Kati Basti* in management of *Kati Graha*(Lumbar Spondylosis).

CONCLUSION

From the present study it can be concluded that-Although *Nirgundi Taila Matra Basti* and *Nirgundi Taila Kati Basti* give good result, but comparison in both therapies, *Nirgundi Taila Matra Basti* provided much better relief in the cardinal symptoms of *LS*.

Acknowledgements - Nil

Conflict of interest - None

Source of finance & support - Nil

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How to cite this article: Devis S, Sharma G.P, Sharma M “A Comparative Clinical Study of *Matra Basti* and *KatiBasti* with *Nirgundi Taila* in the Management of *Kati Graha* (Lumbar Spondylosis) ”IRJAY.[online]2022;5(8); 26-32.

Available from: <https://irjay.com>

DOI link- <https://doi.org/10.47223/IRJAY.2022.5804>

Table 1 Subjective parameters-

Gradation						
Symptoms	0	1	2	3	4	5
Back pain (<i>Ruka</i>)	No pain	Intermittent mild pain on lower back movement	Continues mild pain radiating to hip region	Continues moderate (bearable) pain radiating to hip region	Continues sever, pain radiating to hip & lower limb	Sever (non bearable) pain with numbness
Painful movement	Complete movement without lower pain	Complete movement with mild pain	Incomplete movement with mild pain	Incomplete movement with moderate (bearable) pain	Incomplete movement with severe pain	Restricted movement with severe pain
Stiffness (<i>Stambha</i>)	No stiffness	Mild stiffness along the lower back	Mild stiffness along back & hip region	Moderate stiffness along hip & lower limb	Severe stiffness with incomplete lumber movement	Severe stiffness with restricted movement
Tingling & Numbness	No numbness	Mild tingling sensation without numbness	Mild tingling sensation with intermittent numbness	Moderate tingling sensation with continuous numbness	Severe tingling sensation with continuous numbness up to toe	Severe tingling & numbness over entire lower limb

Pain Assessment by VAS (Visual analog scale)

Table 2 Objective Parameters-

Walking Distance Test (In Meter)	More than 80m up to 100m within 5mintues	1
	More than 60m up to 80m within 5mintues	2
	More than 40m up to 60m within 5mintues	3
	More than 20m up to 40m within 5mintues	4
	Up to 20m within 5mintues	5
Straight Leg Raised Test (SLR)	No pain at 90 ⁰	0
	Pain >71 ⁰ up to 90 ⁰	1
	Pain >51 ⁰ up to 70 ⁰	2
	Pain >31 ⁰ up to 50 ⁰	3
	Pain below 30 ⁰	4
X-ray of Lumbar spine AP View Lat. View	No disc space narrowing, no end plate sclerosis, and no osteophyte formation.	0
	25% Decrease in disc space narrowing, with barely visible end plate sclerosis and osteophyte formation.	1
	50% Decrease in disc space narrowing with moderate end-plate sclerosis and a moderate size osteophyte formation.	2
	75% Disc space narrowing, severe end-plate sclerosis, and large osteophyte formation.	3

Table 3 INVESTIGATIONS: –

Hemoglobin		
Total WBC Count		
Differential leucocyte count	Lymphocytes	
	Neutrophils	
	Eosinophils	
	Basophils	
	Monocytes	
Erythrocyte Sedimentation Rate		
Fasting Blood sugar		
MRI (If Required)		

Table No.: -4 SUBJECTIVE PARAMETERS (WILCOXON MATCHED PAIRS SIGNED RANKS TEST)

Variable	Gr	Mean score		Diff	% Relief	S.D ±	S.E ±	P value	Result
		BT	AT						
Back pain (<i>Ruka</i>)	A	3.03	1.73	1.30	42.86	0.5350	0.09767	< 0.0001	ES
	B	2.30	1.46	0.83	36.23	0.3790	0.06920	< 0.0001	ES
Painful movement	A	2.70	1.60	1.10	40.74	0.3051	0.05571	< 0.0001	ES
	B	1.96	1.23	0.73	37.28	0.44	0.08212	< 0.0001	ES
Stiffness (<i>Stambha</i>)	A	2.300	1.367	0.933	40.57	0.4498	0.08212	< 0.0001	ES
	B	2.067	1.267	0.800	38.70	0.4068	0.07428	< 0.0001	ES
Numbness	A	3.300	1.767	1.533	46.45	0.7303	0.1333	< 0.0001	ES
	B	2.00	1.70	0.300	15	0.4661	0.08510	0.0039	VS
Tingling	A	3.033	1.90	1.133	37.35	0.3457	.06312	< 0.0001	ES
	B	2.933	1.96	0.967	32.95	0.1826	0.03333	< 0.0001	ES

Table 5 OBJECTIVE PARAMETERS (PAIRED ‘T’ TEST)

Variable	Gr	Mean score		Diff	% Relief	S.D ±	S.E ±	P value	T Value	Result
		BT	AT							
Straight Leg Raised Test	A	2.200	1.100	1.10	50	0.30	0.0557	<0.0001	19.746	ES
	B	2.800	1.800	1.00	35.71	0.26	0.0479	<0.0001	20.857	ES
Walking Distance Test	A	3.400	1.667	1.73	50.97	0.58	0.106	<0.0001	16.276	ES
	B	2.167	1.133	1.03	47.66	0.18	0.033	<0.0001	31.000	ES
X RAY	A	2.300	1.300	1.00	43.47	0.37	0.067	<0.0001	6.158	ES
	B	2.267	1.33	0.933	41.16	0.36	0.066	<0.0001	14.000	ES
HB	A	12.62	12.400	0.2267	1.795	0.39	0.071	0.0037	3.152	VS
	B	12.45	12.397	0.05667	.4550	0.28	0.051	0.2768	1.108	NS
RBS	A	99.03	97.467	1.567	1.58	7.16	1.308	0.2409	1.197	NS
	B	99.36	99.200	0.1667	0.1677	5.83	1.065	0.8767	0.1565	NS
TLC	A	8498.0	8394.7	103.33	1.21	621.1	113.4	0.3697	0.9112	NS
	B	8264.7	8231.3	33.333	0.40	463.5	84.64	0.6966	0.3938	NS

Table 6 OBJECTIVE PARAMETERS (UNPAIRED T TEST)

S.N.	Variable	Mean diff. Group A	Mean diff. Group B	MW- U	P value	Results
1.	Ruka(Back pain)	1.300	0.8333	275.00	0.0003	ES
2.	Painful movement	1.100	0.7333	297.00	0.0008	ES
3.	Stiffness	0.9333	0.8000	396.00	0.2554	NS
4.	Numbness	1.533	0.3000	81.000	< 0.0001	E.S.
5.	Tingling	1.133	0.9667	377.00	0.0253	S

Table No 7

Variable	Mean diff Group B	Mean diff Group B	T-Value	P-Value	Result
SLR	1.100	1.000	1.361	0.4239	NS
Walking Distance Test	1.733	1.033	6.273	< 0.0001	ES
X Ray	1.000	0.9333	0.7011	0.4861	NS
HB	0.2267	0.05667	1.927	0.0589	NS
RBS	1.567	0.1667	0.8300	0.4100	NS
TLC	103.33	33.333	0.4947	0.6227	NS

Table 8 PERCENTAGE RELIEF IN TWO GROUPS IN SUBJECTIVE PARAMETERS

S.no.	Variable	Relief in percentage	
		Group A	Group B
1.	Ruka(Back pain)	42.86%	36.23%
2.	Painful movement	40.74%	37.28%
3.	Stambha(Stiffness)	40.57%	38.70%
4.	Numbness	46.45%	15%
5.	Tingling	37.35%	32.95%
	Average	41.69%	32.03%

Table 9 PERCENTAGE RELIEFS IN TWO GROUPS IN OBJECTIVES PARAMETERS

S.No	Variable	% Relief	
		Group A	Group B
1.	SLR Test	50.00	35.71
2.	Walking Distance Test	50.97	47.66
3.	X Ray	43.47	41.16
4.	HB	1.795	0.4550
5.	RBS	1.58	0.1677
6.	TLC	1.21	0.40

Table 10 TOTAL EFFECT OF THERAPY IN THE PATIENTS OF KATIGRAHA:-

Overall Effect	Group A		Group B	
	N	%	N	%
Cured	1	3.33	2	6.67
Marked Improvement	4	13.33	2	6.67
Moderate Improvement	9	30	12	40
Mild Improvement	14	46.66	13	43.33
No Improvement	2	6.66	1	3.33
TOTAL	30	100.00	30	100.00