



Research Article

MANAGEMENT OF 'KATIGAT VATA' W.S.R. TO LUMBAR SPONDYLOLISTHESIS

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ABSTRACT

Introduction: Lumbar Spondylolisthesis is a degenerative disorder of vertebral column, and describes the anterior displacement of a vertebra or the vertebral column in relation to the vertebrae below. It occurs most often in the lumbar spine and produces symptoms such as Low back pain, Painful Lumbar movement, Stiffness in lumbar region, Tingling numbness and weakness in Lower limb. This condition can be correlated with *Katigat Vata*.

Methodology: The purpose of the study was to observe the efficacy of '*Panchtikta Ghrith Guggulu*'- internally adjuvant to *Kati Basti* with *Til Oil*, in the management of *Katigat Vata* w.s.r. to Lumbar Spondylolisthesis. The subjective assessment of dependent variables such as Pain, Lumbar movement, Stiffness, Tingling numbness and weakness in Lower extremities was done & appropriate statistical test was applied to find out the significance of treatment.

Result: The result showed 79.23% patients got complete relief from Low back pain, 88.55 % patients got relief from Painful Lumbar movement and 93.02% patients relieved from Lumbar stiffness. Further, Tingling numbness present was relieved in 62.87% patients. Similarly, the patients having weakness in Lower limb were relieved to 58%.

Conclusion: In this study, *Panchtikta Ghrith Guggulu*- internally and *Til Oil Kati Basti* (Locally), revealed practically workable, effective and complication free treatment, proved statistically significant and efficacious in the management of *Katigat Vata*.

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INTRODUCTION

The description about is *Katigat Vata* is not available as a separate disease entity in any Ayurvedic text. It is mentioned as one of the *Vatavyadhi* in Charak Samhita (Eighty *Nanatmaja Vatavyadhi*).^[1]

Spondylolisthesis describes the anterior displacement of a vertebra or the vertebral column in relation to the vertebrae below. It occurs most often in the lumbar spine and produces symptoms such as pain in the low back, thighs, and/or legs, which radiates into the buttocks, muscle spasms, leg pain, or weakness, tight hamstring muscles, and irregular gait can be seen.^[2]

This condition can be correlated with *Katigat Vata*. Some ancient texts also describe few disorders having resemblance such

as *Kati Graha*, *Trika Graha*, *Prushta Graha*, *Kati Vayu*, *Trika Shoola*, *Prushta Shoola*, *Vataja Shoola*, *Trika Vedana*, and *Grudrasi*.^[3,4]

Allopathy has Analgesics, Anti inflammatory agents, Corticosteroids, Muscle relaxants, Calcium and Vitamin D supplements, Lumbar Belt, Traction, and Physiotherapy to offer. But, these drugs have obvious side effects which limits their use for long period. Further, progressive worsening of symptoms may result in Lumbar Canal Stenosis, which needs surgical intervention like Hemi facetectomy, Laminectomy or Disc excision etc. with due risk.^[5]

This opens an opportunity to try Ayurvedic medicine that has Analgesic, Anti inflammatory, Muscle relaxant action without any side effects

along with 'Dhatuposhan' capacity; so treatment for longer duration benefits more and more. Few works has been already done in this context with encouraging therapeutic results. [6]

Ayurvedic texts suggest that *Asthigat Vata* is best treated by *Panchkarma upakrama*, with *siddha* (medicated) *Ksheer-siddha Ghrita* using drugs having *Tikta rasa* such as *Panchtikta*. Further, texts advocate that vitiated *Vata* which is located in 'Kati' region i.e. around Lumbar region, should be treated by 'Basti karma therapy' and *Sthanik Snehan Swedan* with drugs having *Vata & Kapha* pacifying properties. [7, 8]

In this context, during pilot study, '*Panchtikta Ghrita Guggulu*' was found very effective. In *Chikitsa upakrama*, *Kati Basti* therapy (Luke warm *Til Oil*) was selected. The present study was undertaken to establish a potent Ayurvedic modality for '*Katigat Vata*' w.s.r. to Lumbar Spondylolisthesis, which proves effective and complication free.

Aim of the Study

To study the efficacy of '*Panchtikta Ghrit Guggulu*'- internally and *Til Oil Kati Basti* (Locally), in the management of '*Katigat Vata*' w.s.r. to Lumbar Spondylolisthesis.

Objective of Study

- To assess the efficacy of '*Panchtikta Ghrit Guggulu*'- internally, in relieving symptoms of patients suffering from '*Katigat Vata*'.
- To propose possible mechanism of action of drug.

PLAN OF RESEARCH

Type of study-Open (Non Blind), Uncontrolled (Single Arm), Clinical study.

Place of Study- *Shalya* Department of D.Y.Patil Ayurvedic Hospital, Navi Mumbai.

Sample Size-50 patients

Name of the Drug- *Panchtikta Ghrit Guggulu* (Internally) and *Til Oil- Kati Basti*.

Dosage & Time -

1. *Panchtikta Ghrit Guggulu* - 2 Tablet (Each 250 mg.) twice a day.
2. *Anupan* - Luke warm water for 1 Month.
3. *Kati Basti*- 2 sittings (Each of 10 days) with Luke warm *Til Oil*- at 10 days interval.

Criteria for Inclusion

Subjects those are being diagnosed as to have Lumbar Spondylolisthesis and fulfilling working definition of the study.

Gender- Male and Female both

Age group- 40 to 60 years.

Criteria for Exclusion

Pott's spine, Scoliosis, Kyphosis, Ankylosing spondylosis, Lumbar canal stenosis, Metastatic disease of spine, Rheumatoid arthritis, Traumatic Inter vertebral disc prolapsed, Diabetic neuropathy with radiculopathy, Multiple sclerosis

Investigations

Essential (Mandatory)

X- ray of Lumbo-Sacral spine AP/LAT view, CBC & ESR, Blood sugar, Urine R / M

Desirable (Subject to affordability & availability and necessity)

M.R.I. of Lumbo-Sacral spine

Investigations like Serum Calcium, Serum Alkaline Phosphatase, Lipid profile & ECG wherever required. Above investigations were done at base line & at the end of therapy.

DRUG PROFILE

Panchtikta Ghrit Guggulu- Drug Ingredients & Processing [9]

Nimb, Amrita, Vasa, Patol, Nidigdihika, water purified Guggulu, Murchhit Cow Ghee, Patha, Vidanga, Surdaru, Gajpippali, Yavkshar, Svarjika-kshar, Shunthi, Haridra, Aniseeds, Chavya, Kushtha, Tejovati, Marich, Vatsaka, Dipyaka, Chitrak, Rohini, Arushkara, Vacha, Pippalimula, Manjishtha, Haritaki, Vibhitak, Amalaki, Yavani.

Process of Drug making, as per API, Part 2- (Formulations)

470 gm each of *Nimb, Amrita, Vasa, Patol & Nidigdihika (Kantakari)* taken. Coarsely powdered them together & boiled in water measuring 13 Liter. Reduced the liquid to one fourth of the original quantity. 240 gm of Purified *Guggulu* & 750 gm of *Murchhit Cow ghee* added to this decoction,. After it is cooked; 12 gm each of the following -*Patha, Vidanga, Surdaru, Gajpippali, Yavkshar, Svarjika-kshar, Shunthi, Haridra, Aniseeds, Chavya, Kushtha, Tejovati, Marich, Vatsaka, Dipyaka, Chitrak, Rohini, Arushkara, Vacha, Pippalimula, Manjishtha, Haritaki, Vibhitak, Amalaki & Yavani* added to it. The preparation stirred properly.

Kati Basti - actual procedure practiced in the study (SOP)

Poorva Karma: *Poorvakarma* procedure includes gentle massage of Lower back and lower extremities with *Til Oil* & mild fomentation by *Nadiswed* (Steam) of the whole part.

Pradhan Karma: Patient is placed in prone position, Demarcation of Lumbo-sacral spine done and specially designed elliptical *Kati Basti* instrument made of fiber is placed -fixed to skin covering Lumbo-sacral spine with the help of sticky

dough of black gram flour to avoid leaking. Thereafter, luke warm *Til* Oil (Temp. 42^o C) was poured filling 2/3rd of the *Kati Basti* instrument. Half of this luke warm oil was removed with the help of cotton and replaced with warm oil every 10 min. This procedure was continued for 30 minutes every sitting to sustain uniform temperature. Lastly,

Oil is removed by detaching instrument and oil is removed followed by keeping the area covered with warm oil wrung cotton swab, so as to maintain heat over the lumbar region for next 10 min. Thereafter, patient was asked to take rest in supine position on hard bed with minimal ventilation in room for 1 hour to get optimum benefit of *Kati Basti* therapy.

Parameters and Gradations for Assessment of Results

Table 1: Showing parameters and gradation criterion

Parameter	Gradation					
	0	+	++	++	+++	++++
Back Pain	No pain	Intermittent mild pain on lower back movement	Continuous mild pain radiating to Hip region	Continuous moderate (bearable) pain radiating to Hip.	Continuous severe pain radiating to Hip & Lower limb	Severe (non bearable) pain with Numbness
Mild = up to 6 hr Intermittent, Moderate.= 8-12 hr, Severe= 24 hrs continuous						
Painful Movement	Complete movements without pain	Complete movements with mild pain	Incomplete movements with mild pain	Incomplete movements with moderate (bearable) pain	Incomplete movements With Severe pain	Restricted movements with Severe pain
Stiffness	No stiffness	Mild stiffness along the lower back	Mild stiffness along back & Hip region	Moderate stiffness along Hip and Lower limb	Severe stiffness with Incomplete lumbar movements	Severe stiffness with Restricted movements
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
Weakness in Lower Limb	No weakness grade V muscle power	Mild weakness with grade IV muscle power	Moderate weakness with grade III muscle power	Moderate weakness with grade II muscle power	Severe weakness with grade I muscle power	Weakness in lower limb with No muscle power
Radio-graphic findings	Within normal limit	Early spondylotic changes without osetophytic changes	Early spondylosis changes with osetophytic changes	Moderate spondylo- listhesis without nerve root compression	Severe spondylo- Listhesis with mild nerve root compression	Severe spondylo- listhesis with severe nerve root compression

ASSESSMENT OF DRUG RESPONSE**Table 2: Showing Assessment of drug response in the clinical study**

Cured	Complete relief in both aspects (clinical symptoms as well as change in Radiograph)
Markedly improved	Complete relief in clinical symptoms but partial relief in Radiograph
Improved	Partial relief in both aspects
Failure	No relief in clinical symptoms as well as no change in Radiograph (X-Ray image)

STATISTICAL ANALYSIS**Table 3: Showing Statistical Analysis (by Wilcoxon-matched-pairs signed-ranks Test)**

Symptom		Mean	SD	SE	Sum of all Signed Ranks	No. of Pairs	p
Lower Back Pain	BT	2.62	1.67	0.09	1176	48	<0.0001 Extremely Significant
	AT	0.54	1.05	0.15			
	DIFF	2.08	0.80	0.11			
Painful Movement	BT	1.66	0.72	0.10	946	43	<0.0001 Extremely Significant
	AT	0.2	0.40	0.05			
	DIFF	1.46	0.86	0.12			
Stiffness	BT	1.72	1.03	0.15	990	44	<0.0001 Extremely Significant
	AT	0.12	0.33	0.05			
	DIFF	1.60	1.16	0.16			
Tingling Numbness	BT	0.82	0.69	0.097	276	23	<0.0001 Extremely Significant
	AT	0.32	0.65	0.09			
	DIFF	0.50	0.58	0.08			
Weakness in Lower Limb	BT	0.28	0.45	0.06	36	09	<0.01 Very Significant
	AT	0.12	0.33	0.04			
	DIFF	0.16	0.37	0.05			
X-Ray Findings	BT	1.26	0.92	0.13	0	0	Insignificant / Unchanged
	AT	1.26	0.92	0.13			
	DIFF	0	0	0			

OBSERVATION AND RESULT

'Panchtikta Ghrith Guggulu'- internally and *Til Oil Kati Basti* (Locally), proved efficacious in the management of 'Katigat Vata' with 'p' value less than 0.001, except for X-ray findings.

Back Pain', 'Painful Lumbar movement' and 'Stiffness' were the symptoms which were present in all the patients. The statistical observations on dependable variables revealed that 79.23% patients got complete relief from 'Back pain'. Further, 88.55 % patients got relief from 'Painful Lumbar movement', 93.02% patients relieved from 'Stiffness', 62.87% patients relieved from 'Tingling numbness' and 58% Patients relieved from 'Weakness in Lower limb'.

Similarly, patients with onset of less duration i.e. between 0 to 3 months and who didn't had Tingling numbness and Weakness in Lower limb showed faster recovery. All of them got complete relief at the end of 10th day of *Kati Basti* treatment only.

However, other patients having higher grade of Tingling numbness, Lower limb weakness and in whom the disease chronicity i.e. onset of disease was more than 1year got relief on further treatment sittings of *Kati Basti* along with palliative treatment.

DISCUSSION

The *Hetu* or causes of Spondylolisthesis & 'Katigat Vata' (motioned in Ayurvedic *Samhita*) causing *Vataprakop* & *Dhatukshaya* are similar. They are degenerative changes due aging or trauma, changing in lifestyle & work pattern causing strain over lower back & travelling for prolongs duration (causing continues jerk) and indulge in un salutary- unhealthy food habits causing nutritional deficit.

Due to all above aetiological factors, when the vitiated *Vata Dosha* gets logged in 'Kati' i.e. Lumbo-sacral region, 'Katigat Vata' condition occurs. The resembling clinical features of Lumbar Spondylolisthesis & 'Katigat Vata' which explore the co relation between these two ailments such as Lower backache (*Kati shool*), Stiffness (*Kati grah*), Restricted Lumbar movement (*Savedana Kati gati*), Radiating pain to the lower extremities (*Sanchari vedana*) and Degeneration of Lumo-sacral spine (*Kati Asthi sandhi Dhatukshay*).

In this study, the subjective assessment of Dependent variables was done & appropriate statistical test was applied to find out the significance of treatment.

Out of these 50, 79.23% patients got complete relief from Back pain, 88.55 % patients got relief from 'Painful Lumbar movement' and 93.02% patients relieved from Stiffness, with 'Panchtikta Ghrith Guggulu'- internally and *Til* Oil *Kati Basti* (Locally) treatment. Further, 'Tingling numbness' present was relieved in 62.87% patients and patients having weakness in Lower limb were relieved to 58%.

For this study, Demographical data i.e. Age, Gender, Religion, Socio economic status, Occupation, Diet, *Prakruti* of the patients were the secondary aspects. They did not showed much significance in drawing conclusion, as the assessment was based on clinical findings.

Probable Mechanism of Action of Therapy

Action of 'Panchtikta Ghrith Guggulu'

In this formulation, mainly, action of drugs acting synergistically is potentiated and secondly, some drugs which appear to act antagonistically are added to nullify untoward side effects.

'Panchtikta Ghrith Guggulu' is combination of total 31 ingredients. Out of which, *Panchtikta* i. e. *Nimba*, *Amruta*, *Patol*, *Kantakari* and *Vasa* are in large quantity along with *Goghrita* and *Guggulu*. Rest of 24 drugs are in lesser quantity, still have remarkable role in action of 'Panchtikta Ghrith Guggulu'. Action of drug is mainly related to

characters of *Tikta Rasa* drugs, *Goghrita* and *Guggulu*.

Further, *Tikta* drugs having adaptogenicity are included in combination to make it *Vataghna* and *Rasayan* (*Dhatuwardhan*). It strengthens *Jatharagni* as well as *Dhatwagni* i.e. metabolic fire. It digests and metabolizes abnormal *Kapha*, *Kleda* (*Pachan* & *Parinaman*), thus destroying *Srotorodha*, ultimately, leading to promotion of movement of *Vata Dosha* in body channels (*Vatanulomana* by *Srotoroshodhana* by *Aamapachan* and *Dhatwagni deepan*).

The drugs also lead to formation of *Dhatu* of good quality (*Dhatu Poshan*, *Dhatu Prasadana* by *Prashasta*, *Sanhat Dhatu Nirman*). Generally, *Tikta Rasa* is supposed to vitiate *Vata*. But, *Vagbhata* in *Ashtang Hridaya* has clearly mentioned it that drugs like *Guduchi*, *Patol*, *Haritaki*, *Bhallataka* etc. though possess *Tikta Rasa* as dominant *Rasa*; still exhibit *Rasayan Karma* in various ways. Further, majority of drugs in formulation are included in '*Shoola-prashamana Gana*'. *Charak* has made groups of drugs as per their main and potent/ best action.

One of the ingredients is *Guggulu* also. It possesses *Vataghna*, *Kaphaghna*, *Shoolaghna*, *Shothaghna*, *Asthiposhak*, *Yogavahi*, *Rasayan*, *Vrishya* properties. *Guggulu* helps drugs in combination to reach to minute channels and deeper structures (*Sookshma Srotogamitva*). *Yogavahi* property of *Guggulu* is useful to increase potency of other drugs.

Beauty of formulation is due to special drugs like *Maricha* and *Vacha* which are *Pramathi* in their action. *Pramathi* are the drugs that has potency to remove *Mala* (causing *Srotorodha*) those lead to deprivation of *Dhatu* from nutritive material from *Srotas*. This further facilitates *Vatanulomana* and *Dhatuposhana*. The *Ksharadvaya* added in the formulation, helps in promoting *Vatanulomana* & decrease *Shool* (Pain).

Furthermore, *Goghrita* is *Vatapittashamak*, *Sookshma srotogami*, *Yogavahi*, *Rasayan* and best of *Sneha dravya*. *Goghrita* possess special feature of *Sanskaranuvartan* means it facilitates actions of drugs which are mixed with it and its characters can be altered by processing as per requirement. Addition of *Goghrita* as one of the main content of formulation makes it potent *Sneha kalpa*. It also takes care of little *Roukshya* which can be there due to combination of all *Tikta Rasabhuyishtha* drugs.

Thus, 'Panchtikta Ghrith Guggulu' proved one of the best *Vataghna*, *Shoolaghna*, *Rasayan* combination that acts in both types of *Katigata Vata* viz. *Dhatukshayajanya* and *Margavarodhajanya*.

Action of Snehan- Swedan and Kati Basti**Procedure**

Snehan- Due to *Snehan karma* i.e. local oleation procedure, the vitiated *Doshas* which are adherent to the *Srotasas* i.e. channels become soft & gets displaced from its places.

Swedan- Due to *Swedan karma* i.e. local fomentation, the vitiated *Doshas* gets liquefied & come to nearest *Koshta* i.e. passage or cavity, from where it can be easily removed.

Kati Basti- Vitiated *Doshas* and unwanted metabolites causing pressure on end nerves inducing pain can be easily eliminated by '*Kati Basti*' procedure. It helps in pacifying the supply of nutrients to the adjacent muscle fibers and Lumbo-sacral vertebrae, forms newer healthier tissues thus, help in arresting degenerative process and strengthens the muscles and bony tissue.

CONCLUSION

The resembling clinical features of Spondylolisthesis and *Katigat Vata* such as Gradual Pain in the Lumbar region which worsens in morning, Painful movements, Stiffness, Tingling Numbness & Weakness in Lower limbs explores the co relation between these two ailments. The Ayurvedic concept of pathogenesis (*Samprapti*) can be explained as- Vitiated *Vata* diminishes *Shleshak Kapha* causing degeneration of *Asthi Dahau* and further involving *Mans Dhatu* to produce symptoms of *Katigat Vata* like tenderness, pain, stiffness, restriction of the movements etc.

In this study, the common symptoms of '*Katigat Vata*' were relieved with '*Panchtikta Ghrith Guggulu*'- internally and *Til Oil Kati Basti* (Locally) which proved statistically significant. The study revealed that majority of the patients were having *VataKaphaj* or *VataPittaj Prakruti*. As the disease '*Katigat Vata*' is a '*Vatavyadhi*', *Vata* predominance in the *Prakruti* of the patient indicates that these people were prone to acquire *Vatavyadhi*. The interpretation of efficacy and probable mechanism of action of therapy can be explained by combined

result of Action of the drug- '*Panchtikta Ghrith Guggulu*' and *Kati Basti* Therapy.

However, it is recommended that the further study should be carried out in large number of patients to evaluate and analyze the results. Similarly, controlled study (with comparator drugs) can be performed to prove better therapeutic efficacy of the trial drug.

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