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A comparative study to evaluate the effect of Shampaakadi Aasthapana Basti and Saindhawadya Tail Matra Basti in the management of Pristha Graha w.s.r. to Lumbar Spondylosis

Article History:

Name of Author:
Dr. Chander Lata[1], Dr. Bharat Bhushan[2]*, Dr. Manoj Kumar Thakur[3]

Affiliation: *[1]Assistant Professor, Department of Panchkarma, Shiva Ayurvedic Medical College & Hospital Bilaspur (H.P.).*
[2]Assistant Professor, Department of Agada Tantra, Shiva Ayurvedic Medical College & HospitalBilaspur (H.P.).
[3]Associate Professor, Department of Swasthavritta, Shiva Ayurvedic Medical College & HospitalBilaspur (H.P.).

Corresponding Author:
Dr. Bharat Bhushan

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Abstract: ***BACKGROUND OF STUDY:*** Spondylosis is the degenerative process irrespective of the causes and Pristha Graha comes under Vataj Nanatamaj Vyadhi. Vata Vyadhi occurs mainly in old age and taking improper diet, doing excessive activities or injury results in production of Vata Vyadhi. Symptoms of Pristha Grahamimic with the features of Lumbar spondylosis. ***AIMS AND OBJECTIVES:*** To evaluate the comparative effect ofAasthapana Basti and Matra Bastiin the management of Pristha Graha. ***MATERIAL AND METHOD:*** Patients were randomly categorized into two groups – 1. ShampaakadiAasthapanaBasti+Anuvasana Basti in Kala regime.2. Matra Basti for 16 days. ***STATISTICAL TEST:*** For objective assessment criteria, paired t-test was applied to observe the significance between before and after treatment and unpaired t–test for intergroup comparison.For Subjective Assessment Criteria, Wilcoxon signed-rank test was applied to compare the before and after effects of therapy. Mann-Whitney U test was applied to analyze the difference in effect of therapy between bothgroups. ***RESULT:*** In this study, Group-1 showed more significant results in comparison with Group-2. ***CONCLUSION:*** Patients with symptoms of vitiated Vata and KaphaDosha should be selected for administration of Aasthapana Basti, whereas patients who have been emaciated from exposure to heavy work, heavy weight lifting, excessive exercises should be selected for Snehana Karma i.e., Matra Basti.

Keywords: Lumbar Spondylosis, Pristha Graha, Matra Basti, Aasthapana Basti, Vata Vyadhi.

INTRODUCTION

Spondylosis is the degeneration of the spinal column from any cause. Involvement of facet joint may be referred as spinal osteoarthritis, the age-related wear and tear of the spinal column is considered as leading cause of spondylosis.1 The degenerative process in osteoarthritis predominantly affects the vertebral bodies, the neural foramina and the facet joints (facet syndrome). Improper sitting postures, heavy weight lifting, lack of regular exercise, doing excessive exercises, fracture, prolapsed disc, over exertion, jerking movements during travelling and sports cause

undue pressure over the musculoskeletal system. In Ayurveda, Pristha Grahahas been mentioned as a disease under Vataj Nanatamaj Vyadhi and described as Lakshana under variable diseases like Prakupita Vata, Gridhrasi, Arsha, Pakvashaya Gat Kupit Vayu, Aptanak Laskhan etc.

Vitiated Vata Dosha develop features like contracture (Sankoch), stiffness in interphalangeal joints (Parva Stambha), sharp pain over bony regions (BhedainAsthi), stiffness/ catch in extremities, back and head region (Paani Pristha Shiro Graha), limping or inability to walk (Khanj, Pangu), kyphotic spine (Kubjta), muscular atrophy (Anga Shosha), deprivation of sleep (Anidra), numbness (Suptata).2 When it comes to the treatment of disease, Ayurveda has provided "SamraptiVighatan" concept.Vitiated Doshas should be the center of attention for treating any kind of disease. Vata Dosha is the main Samprapti Ghatak in Pristha Graha.Basti Karma has been awarded as a mind – boggling therapy for Vata Vyadhi and also considered as "Ardha Chikitsa" in the field of Kayachikitsa.3Matra Bastimitigates vitiated Vata Doshaand is known for Brihan Karma.4Considering the high prevalence rate, rate of disabilities, sleep deprivation, symptomatic relief of treatment, a supreme modality of Ayurveda i.e., Basti Karma was selected.

MATERIALS AND METHOD

STUDY DESIGN – Comparative group clinical study.

SAMPLE SIZE -In the present study, 23 patients were registered and divided randomly into two groups as below:

Group 1: In this group, 10 patients of Lumbar spondylosis were registered and treated with Shampaakadi Aasthapana Basti and Murchitta Til Tail Anuvasana Vasti in Kala Krama regimen.

Group 2: In this group, 13 patients of Lumbar spondylosis were registered. 3 patients dropped out due to personal issues. Patients in this groups were managed with Saindhawadya Tail Matra Basti for 16 days.

INCLUSION CRITERIA

a. Age group 25 – 75 years irrespective of gender, race, religion and socio-economic status.
b. Patient with clinical features of Pristha Grahaas described in Samhitas.
c. Patients who have given their consent for clinical study.

PLAN OF THE STUDY -

LITERARY SOURCE –

Data about the disease, drugs and procedure was collected from various classical Ayurvedic,modern texts and various research journals.

SAMPLE SOURCE -

Patients were selected from OPD and IPD of the Panchkarma department.

DRUG SOURCE –

The drugs required for the clinical study had been procured and prepared in the department of Rasa Shastra and Bhaishajya Kalpana.

EXCLUSION CRITERIA –

a. Patients not willing for the study.
b. Patients below 25 and above 75 years.
c. Patients having any associated chronic ailments like Diabetes Mellitus, Tuberculosis, Anemia, Traumatic condition, Pregnant women and lactating mother.

ASSESSMENT CRITERIA

Assessment was done on the basis of objective and subjective criteria before and after the treatment.

OBJECTIVE CRITERIA –

VAS Score
Oswestry Disability Questionere (ODI)
SLRT
Active Range of Motion of Lumbar Spine

SUBJECTIVE CRITERIA –

1.1. Stiffness (Stambha)

Features	Grade
No stiffness	0
Stiffness for few minutes after sitting for long duration but relieved by mild movements	1
Stiffness for 1 hour or once a day but routine work is not disturbed	2
Stiffness lasting for more than 1 hour or many times a day, mildly affecting the daily routine	3
Episodes of stiffness lasting for 2–6 hours, daily routine is hampered severely	4

1.2. Pain –

Features	Grade
No Pain	0
Mild pain occurs on doing activity (does not hamper daily routine)	1
Moderate pain occurs on doing activity (hampers some of routine activity)	2
Severe pain (can't perform routine activity)	3
Very Severe pain (does not allows patient to even move)	4

1.3. Numbness (Suptata) -

Features	Grade
No numbness	0
Occasionally once in a day for few minutes	1
Daily once a day for few minutes	2
Daily for 2 or more times/ 30-60 minutes	3
Daily more than 1 hour/ many times a day	4

Duration of the study – 16 days
Follow up -15 and 30 days after completion of study.

PROCEDURE

AASTHAPANA BASTI –

Stages	Procedure
Purva Karma	Patient was advised to get free from all of his/her natural urges before administration of Basti. Abhyanga and Swedana of abdominal and low back region was done.
Pradhan Karma	Then patient was instructed to lie down in the left lateral position and keep his/her left arm below the head as a pillow, extend the left leg completely and flex the right leg at the knee joint. Then lukewarm oil was oleated over the anal region and on thefront portion of Basti Netra,air bubbles were removed and then index finger was kept on the Netra till inserting it into the anal canal.Then Basti Netra was introduced gradually & carefully in the parallel direction to that of the vertebral column up to 1/4th part of the Netra i.e., till the first Karnika fixes over the anus. Then Basti Putaka was hold in the left hand from the base and right hand was kept on the top of Putaka, Putaka was pressed gradually with the constant pressure. Patient was instructed to take a deep breath and then Basti Dravya was pushedinto the rectum till a little quantity remained in the Putaka, after that the Netra was withdrawalgradually. After BastiDravya administration, patient was guided to lie down in the supine position gradually andSphika-Tadanawas done slowly and softly for 3-4 times withthe foot end of the table and legs of the patient were lifted three times slowly. Then patient was guided to lie in a comfortable position with a pillowbelow the head till patient gets the urge for defecation.
Paschata Karma	After observing theSamyakaNiruhita Lakshana, the patient was guided to take hot water bath and light diet as per dominance of Dosha i.e., Yusha, Kshira&Mamsa Rasa in Kapha, Pitta and Vata respectively.

MATRA BASTI –

Stages	Procedure
Purva Karma	Patient was advised to get free from all of his/her natural urges before administration of Basti. Localized Abhyanga with Murchitta Tila Tail was done, followed by bath with hot water. Then 1/4th part of daily intake of meal was given to patient. Patient was asked to do a little walk.
Pradhan Karma	Patient was instructed to lie in left lateral position with left leg straight and flexed right knee. Patient's anal region and catheter was oleated. Then lukewarm Saindhawadya Tail was administered with equal pressure in between 30 Matra kala. After proper administration of Matra Basti, patient was instructed to lie in supine position and then count up to 100. Patient was made to flex his/her legs and arms each thrice times. After that soles and buttocks were stroked gently and pelvis was elevated thrice times.
Paschata Karma	Patient was instructed to take light meal after the digestion of meal taken in morning hours.

RESULTS

DEMOGRAPHIC DATA

Variable	Category	Number of Patients
Age	25–35 years	8
	36–45 years	2
	46–55 years	5
	56–65 years	5
	66–75 years	3
Marital Status	Married	21
	Unmarried	2
Gender	Male	14
	Female	9
Occupation	Employees	7
	Household chores	5
	Labourer	5
	Retired	4
	Students	2
Habitat	Rural	15
	Urban	8

OBJECTIVE CRITERIA (GROUP -1)

Criteria	BT (Before Treatment) Mean Score	AT (After Treatment) Mean Score	Mean Difference	% Relief	S.D.	S.E.	p-value	Result
ODI	1.7	0.4	-1.3	76.47%	0.823	0.260	< 0.001	HS
SLR	40.60	67.0	-26.4	65.02%	10.885	3.441	< 0.001	HS
VAS	6.8	1.8	5.0	73.52%	1.414	0.447	< 0.001	HS
Flexion	35.4	53.8	-18.4	51.90%	10.480	3.314	< 0.001	HS
Extension	16.30	30.1	-13.8	84.66%	12.320	3.898	< 0.05	S
Lateral Rotation	11.5	19.1	-7.60	66.08%	5.719	1.809	< 0.05	S

SUBJECTIVE CRITERIA (GROUP -1)

Criteria	N	BT (Mean Score)	AT (Mean Score)	Mean Difference	% Relief	S.D.	S.E.	p-value	Result
Ruja	10	2.1	0.5	1.6	76.19%	0.516	0.163	< 0.05	S
Stambha	10	2.4	0.2	2.2	91.66%	0.918	0.290	< 0.05	S
Suptata	10	1.6	0.4	1.2	75.00%	1.229	0.388	< 0.05	S

OBJECTIVE CRITERIA (GROUP – 2)

Criteria	BT (Before Treatment) Mean Score	AT (After Treatment) Mean Score	Mean Difference	% Relief	S.D.	S.E.	p-value	Result
ODI	1.4	0.4	1.0	71.42%	0.471	0.149	< 0.001	HS
SLR	48.9	70.9	-22.0	44.98%	12.650	4.003	< 0.001	HS
VAS	7.0	2.2	4.8	68.57%	1.398	0.442	< 0.001	HS
Flexion	45.2	63.3	18.1	40.04%	10.610	3.358	< 0.001	HS
Extension	20.3	23.5	-5.2	25.61%	3.584	1.133	< 0.05	S
Lateral Rotation	14.6	20.1	-5.5	37.67%	3.866	1.222	< 0.05	S

SUBJECTIVE CRITERIA (GROUP – 2)

Criteria	N	BT (Mean Score)	AT (Mean Score)	Mean Difference	% Relief	S.D.	S.E.	p-value	Result
Ruja	10	2.2	0.5	1.7	77.27%	0.674	0.213	< 0.05	S
Stambha	10	1.7	0.3	1.4	82.35%	1.173	0.371	< 0.05	S
Suptata	10	1.5	0.4	1.1	73.33%	1.286	0.406	> 0.05	Insignificant

OVERALL EFFECT OF THERAPY –

Status of the Patient	% Relief	Group I (Number of Patients)	Group II (Number of Patients)
Cured	100%	1	0
Marked Improvement	76–99%	1	0
Moderate Improvement	51–75%*	7	2
Mild Improvement	26–50%	1	7
No Improvement	< 25%	0	1

DISCUSSION

AGE:
Maximum patients in the research work were in the age group of 46-65 years. Research work on Lumbar Spondylosis done by Dr. Ishwar Dutt Sharma suggested that most affected age group is 50-60 years[5]. 85.5% of individuals aged 45–64 years show lumbar spine osteophytes[6].

GENDER:
Maximum number of patients i.e., 61% were males. This is new era where females also match their standards with men, in every field. Still men appear to perform more heavy work, they travel more and have more active life style. So, men are more prone for degenerative process and or associated PIVD.

MARITAL STATUS:
Maximum number of patients i.e., 91.3% were married in the present clinical study. This can be explained as marriage probably causes increased household responsibilities that directly causes physical exertion. Responsibilities of upbringing of the offspring etc., may cause mental as well as physical pressure. In the language of Ayurveda, these all aggravatesVata Dosha. Asthi Dhatu is the location of Vata Dosha. Also enraged Vata Dosha is responsible for degenerative changes in Asthi Dhatu.

Physical exertion as well as lack of nutritive diet due to stress may probably cause degenerative changes in the joints/bone.

OCCUPATION:
Above mentioned data suggests that maximum patients were exposed to physical exertion. Physical exertion causes stress over joints and causes degenerative changes. Remained data suggests prolonged sitting routine of patients. This can be explained as prolonged sitting may cause huge amount of pressure over lumbo-sacral spine and may causes disc and joints to get degenerate. In terms of Ayurveda, lack of physical activity causes Kapha Dosha to get accumulate and restrict the circulation of Vata Dosha. This condition can be termed as "Kaphavrita Vata", which creates the symptoms like "Pristha Graha" etc.

HABITAT –

In the present study, maximum patients were from rural area. Now a days rural areas are also upgraded but still some rural areas have unmetalled roads, less facilities, unawareness to health etc. So, people living in rural areas are more exposed for physical exertion which is the leading cause for degenerative changes.

MODE OF ACTION OF BASTI ON VARIOUS SYMPTOMS -

Shampaakadi Aasthapana Basti has been specially indicated for providing benefits in pain over back, sacral region, obstruction of Vata Dosha. This Basti is said to increase Rakta & Mamsa Dhatu and provide strength to the body.This Basti also has Jivaniya and Brimhaniya effects on the entire body as well as targeted effects.[7]

Vata – Kapha Shamaka properties of Basti drugs are supposed to remove the obstruction of Kapha over Vyan Vayu. Vyan Vayu is responsible for all types of movements in the body. By removing the Avarana of Kapha Dosha, Vyan Vayu comes back to its original state, feeling of stiffness goes away and thus improves the range of motion of various joint (Flexion, Extension and Lateral rotation) and along with this there is improvement in SLRT .

Pain is the marker sign and symptom of vitiated Vata Dosha. Basti is said to work primarily on the Vata Dosha, so by pacifying Vata Dosha symptoms like pain goes away. With the relief in pain, visual analogue scale (VAS Score) shows improvement.

MODE OF ACTION OF DRUGS USED IN BASTI –

On the basis of Rasa –

Rasna, Amaltas, Punarnava, Karchura, Shalparni, Prishnparni, Brihati, Kantkari, Guduchi, Devadaru, Madanphal, Nagarmotha, Hriber, Kutaj, Rasanjana, Priyanguhave Katuand Tikta Rasa. Both Rasaare Agnideepak, Aam-Pachak and SrotoShodhak. Aam Pachan causes lightness and thus relieves stiffness which further improves range of motion of the joints. Strotoshodhanmeans clearance of circulating channels, thus obstruction of Vayu by vitiated Kapha Dosha goes away which implies Vata and Kapha Dosha come back to their original state. This helps in reducing symptoms like Pain, Numbness, Stiffness and also improves range of motion, VAS Score.

On the basis of Guna –

Punarnava, Ashwagandha, Karchur, Prishnparni, Brihati, Guduchi, Devdaru, Madanphal, Nagarmotha, Kutaj, Priyangu have Laghu and Ruksha Guna. These properties serve the purpose of Kapha Shamana, therefore removing the obstruction caused by vitiated Kapha Dosha. This leads to clearing of circulating channels and thus enhancing the circulation of absorbed drugs as well as proper flow of Vata Dosha. Removal of vitiated Kapha Dosha can be responsible for reducing stiffness, Numbness-like symptoms.

Snigdha Guna present in Basti material is Vata-Shamaka and thereby reducing the symptoms like Pain, Numbness and Tenderness.

On the basis of Veerya –

Ushna Guna present in the Rasna, Eranda, Ashwagandha, Karchura, Shalparni, Prisnparni, Brihati, Kantakri, Devadaru, Madanphala, Hriber, Rasanja. Ushna Guna can be responsible for Vata Anulomana properties, thus reducing pain and may help to acquire improvement in Range of motion of the spine.

On the basis of Vipaka –

Rasna, Amaltas, Karchur, Brihati, Kantkari, Devadaru, Madanphal, Nagarmotha, Hriber, Kutaj, Priyangu possess Katu Vipaka. Katu Vipaka present in the drug is Agnideepak, Aampachakand Strotoshodhan. Madhura Vipakahelps in Vataanulomanand Dhatupushti, ultimately leading to Dhatupushti.

Based on chemical constituent of Drugs -

1. Flavonoids, Triterpenoids present in Rasna possess muscle relaxant, anti – inflammatory & analgesic properties.[8]
2. Anthraquinones present in Shampaakshow anti – inflammatory and immunomodulatory properties.[9]
3. Flavonoids present in Eranda have anti-oxidant and anti – inflammatory properties. Saponins, steroids and alkaloids have Antinociceptive activity.[10]
4. Boeravinine present in Punarnava possess analgesic and anti-inflammatory properties.[11]
5. Alkaloids of Ashwagandha have relaxant and anti-spasmodic effects.[12]
6. The ethanolic extract of Gokshura inhibits the expression of mediators related to inflammation and expression of inflammatory cytokines, which has a beneficial effect on various inflammatory conditions.[13]
7. Choline, Tinosporin like alkaloids in Guduchishow anti-inflammatory effects.Glycosides present in this plant treat neurological disorders like MND, dementia, motor and cognitive deficits.Diterpenoids lactones have vasorelaxant and anti-inflammatory properties.[14]
8. Himachalol is one of the major constituents of wood of Devadaru which have anti-spasmodic activity.[15]

Mode of action of Matra Basti -

Matra Basti is mainly indicated in Vata predominant

diseases. In this type of Basti,only Sneha is used. It protects the Purishdhara Kala, it has smoothening effect and also protect the integrity of colon. Direct application of this kind of treatment to Pakvashaya helps not only in regulating Vata Dosha in its site, but also controls the other Dosha involved in the pathogenesis of the disease.

According to modern medicine, administration of enemas has many benefits over oral route. Lipid soluble drugs get readily absorbed into the rectal mucosa which is rich in lymph and blood supply. Drugs can cross the rectal mucosa like any other lipid membrane in the trans-rectal route. As a result of entering general circulation, Basti medicines have an effect on the entire body. Abhyanga (oil massage) is performed before the Matra Basti to strengthen the muscles. Snayu(ligaments), Tvacha (skin) and Raktavahini are the roots of Mamsavaha Srotas. So, at MamsavahaSrotas, there is a direct benefit along with strengthening of ligaments, tendon with Snehana Karma either done internally or externally.

Mode of Action of Drugs used in Basti –

Name of the Drug	Rasa	Guna	Veerya	Vipaka	Doshaghnata
Shunthi	Katu	Laghu, Snigdha	Ushna	Madhura	Kapha–Vata Hara
Saindhava Lavana	Lavana	Snigdha, Tikshna, Laghu	Shita	Madhura	Tridosha Shamaka
Chitraka	Katu	Laghu, Ruksha, Tikshana	Ushna	Katu	Kapha–Vata Hara
Pipplamula	Katu	Laghu, Ruksha	Ushna	Katu	Kapha–Vata Hara
Bhallataka	Madhura, Katu, Tikta, Kashaya	Laghu, Snigdha	Ushna	Madhura	Kapha–Vata Shamaka
Kanjika	Amla	—	Sheeta	Amla	Vata–Kapha Hara

Based on chemical constituent of Drugs -

1. Accumulating evidences suggests that 6-Gingerol, a phenolic compound, is the major gingerol in ginger rhizomes with diverse pharmacological activities, including, anti-inflammatory and anti-oxidant effects[16].
2. Anti-bacterial, Anti-inflammatory and immunostimulatory properties in piperine.Pharmacological screening of β-sitosterol present in Pippalirevealed various activities like anti- inflammatory, antioxidant, immunomodulatory, antinociceptive properties.[17]
3. Root and shoot extracts of Plumbago zeylanica show anti- inflammatory activity.[18]
4. Cyclooxygenase inhibitory flavonoids from ethyl extract of the stem bark and bioflavonoids from the seeds of Bhallatakahave been documented for anti-inflammatory activity.[19]
5. Rock salt is used as a home remedy to cure many ailments such as rheumatic pains , skin disorders. It reduces pain and inflammation.[20]

CONCLUSION

Degenerative processes of bones can be corelated with enraged Vata Dosha. Vitiated Vata Dosha causes Asthi Dhatu Kshya. In lumbar spondylosis, symptoms point towards involvement of Vata and Kapha Dosha. Vitiated Kapha Dosha causes Ajirna, Strotorodhaand Agnimandya. So, further formation of Dhatu gets hampered and in turn Dhatu Kshya takes place.Vitiated Vata Dosha along with Kapha Dosha causes Shoshan of Sleshaka Kapha and Kshyaof Asthi Dhatu. The selected trial drugs have Vata and Kapha Shamaka properties causingSamprapti Vighatana and thus normalizing the vitiated Dosha and thereby alleviating the disease. On the basis of statistical analysis, it can be said that group-I was more effective as compared to Group – II:

- (Group I) Shampaakadi Aasthapana Basti with Murchitta Tila Taila Anuvasana Basti in Kala Krama.
- (Group II) Matra Basti with Saindhawadya Taila for 16 days.

Drugs used in the present study were well tolerated by the patients without any undesirable side effects. The final outcomes of the study were encouraging. Thus, it can be concluded that the above treatment protocol may be helpful for the management of Pristha Graha w.s.r to Lumbar spondylosis in future too.

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