Research Article

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EFFECT OF MASHADI TAILAM ANUVASAN BASTI IN MANAGEMENT OF KATIVATA WITH SPECIAL REFERENCE TO LUMBAR SPONDYLOSIS

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ABSTRACT

Approach of human being towards life has created various dissonances in his biological system. Busy, professional and communal life, important sitting posture in offices, factories, unremitting and physical exertion, jerking activities during travelling and sports-all these factors create too much pressure to the spinal cord and play a vital role in producing low backache. The disease Kativata correlated with lumbar spondylosis has become a huge problem, in spite of advances in modern science. There are many medicines and surgical procedures to treat Lumbar Spondylosis in modern science which have both merits and demerits. The present study is concerned with the efficacy of "Mashadi Tailam Anuvasan Basti" in management of Kativata w.s.r. to Lumbar Spondylosis, to see whether any significant relief can be provided by this therapy and drug. Total 60 patients of Kativata (Lumbar Spondylosis) were selected randomly from OPD and IPD of Govt. Ayurved Hospital, Nanded and given Mashadi Tailam Anuvasan Basti 60 ml (total 9 anuvasan and 4 niruha basti i.e. after each 3 anuvasan 1 niruha basti) with lumbar traction to treatment group (30 pts.) and only lumbar traction in control group (30 pts.) for 13 days. After a course of therapy symptomatic improvement has been observed in treatment group which is statistically significant.

Keywords: Kativata (Lumbar Spondylosis) Mashadi Tailam, Anuvasan Basti, Lumbar Traction, Straight Leg Raise Test (SLRT)

INTRODUCTION

In urban area about 70% of population is prone to develop disorders of vertebral column, like Lumbar Spondylosis, Prolapsed Inter-vertebral Disk (PID), Osteoporosis and other degenerative diseases of spine. Majority of them are suffering from PID or Lumbar Spondylosis. Conservative and surgical treatments are exercised for these diseases in conventional system of medicine. The principal line of treatment involves use of steroids, physiotherapy, NSAID which are having severe side effects on hepatic and renal systems. The other treatment such as surgical intervention may inherit drawbacks like disability.

Pain, tingling sensation, numbness, stiffness of spine are major symptoms of Lumbar spondylosis which is predominantly due to vitiated Vata Dosha[1]. Sneha Basti is indicated for alleviation of Vata Dosha[2]. The varieties of Sneha like Ghrita, Tailam, Vasa and Majja can be utilised for this purpose. Among them Tailam is cost effective and easily available as compare to other snehas. Yogratnakar 'Mashadi Tailam' is indicated in the management of Kativata. The contents of Tailam can be easily procured which are having properties like Vataghna and Balya[3]. An attempt was made to study the efficacy and to prove Mashadi Tailam Anuvasan basti in Kativata (Lumbar Spondylosis) [3] and substantiate its role in such conditions.

Aim

To study effect of Mashadi Tailam Anuvasan Basti in Kativata.

Objectives

To develop evidence based support for effect of Mashadi Tailam as a Kati Shoolaghna and Vataghna.

MATERIALS AND METHODS

Before the initiation of the study, the study protocol and related documents were reviewed and approved by Institutional Ethics Committee at Government Ayurved College, Nanded, Maharashtra, India. Study was carried out as per the Institutional ethical clearance number - GACN/SS/D-3/164-184/08 Dated 11/01/2008

In the present study patients were selected from O.P.D. and admitted in I.P.D. irrespective of sex, education and occupation. These patients were subjected to detailed clinical examinations.

Inclusion Criteria

Patients having textual symptoms of Kativata (Lumbar Spondylosis) was taken as a subject to the study.

- Patients of either sex were included in the study.
- Patients of age group between 20-60 yrs.
- Patients with low back pain with radiograph of lumbosacral spine showing –
  a) Loss of Natural Lumbar lordosis.
  b) Reduction in disc space.
  c) Formation of osteophytes.
  d) Osteoporosis.
  e) Subluxation of one vertebra over another.

Exclusion Criteria

- Children and pregnant women (Below 20 years and above 60 years) were not selected.
- Patients with other joints deformities or diseases which are not related to Kativata (lumbar spondylosis) such as Amavata, Sandhigata Vata, T.B. of spine, carcinoma of joint, fracture spine, Systemic Lupus Erythematous (SLE), congenital scoliosis, kyphosis

etc. (Because scoliosis may be present due to backache).
- Patients on treatment from any other system of medicine for the same problem during clinical trials.
- Patients with lumbar spondylosis need in other emergency treatment.

Withdrawal Criteria

The patients were withdrawn from the trial if-
- Occurrence of adverse effects with given treatment, also if patient needs emergency management.
- The investigator feels that the protocol has been violated.
- Further continuation of the study is likely to be detrimental to health of the patients.
- The patient is not willing to continue the trial.

METHOD

Grouping of Patients

Patients fulfilling the inclusion criteria were selected for treatment in random fashion.
- The study was designed in two groups.
- 30 patients in group A and
- 30 patients in Group B
- Total 60 patients were examined and distributed by Randomised method (Lottery method).

Treatment of Subjects

Period of Treatment - 13 days
Trial Group - 30 Patients
Dosage - 120 ml (12 Tola) Mashadi Tailam Anuvasan basti with Lumbar traction.
Dosage Schedule - After meal (full stomach) in day time
Control Group - 30 Patients
Treatment - Lumbar Traction for 13 days (Patients Weight in Kg/10)
Follow up - 0, 7th, 13th days

Investigations

Haematological

Hb%, Blood Sugar level (BSL) Random, Total leucocytes Count (TLC), Differential Leucocyte Count (DLC), Bleeding Time; Clotting Time; Erythrocyte Sedimentation Rate (ESR).

Urine

Albumin, Sugar, Micro-organism, Bile Salt, Bile Pigment

Special investigation

Digital X-ray L-S Spine: AP and Lateral view

Preparation of Decoction used in Mashadi Tailam

Mashadi Tailam was prepared according to method of Sharangdhar Samhita Madhya Khanda[4].
The ingredients divided in 3 groups for preparation of decoctions used for Sneha siddhi & summarized in Table 1 and 2 also Kalka (Gandha) dravya are summarized in Table 3.

Preparation of Decoction No. 3

Goat Meat (640gm) + Water (10240ml) – heated – reduced to ¼ -- Decoction (2560ml)

Table 1: Ingredients used in preparation of Decoction No. 1

Name of Drug	Latin Name	Quantity
Mash	*Phaseolus mungo* Linn.	280gm
Yava	*Hordeum vulgare* Linn.	280gm
Atasi	*Linum usitatissimum* Linn.	280gm
Kshudra	*Solanum xanthocarpum* Schrad and Wendl	280gm
Markati	*Mucuna pruriens* Linn.	280gm
Kurantaka	*Barleria cristata* Linn.	280gm
Gokshura	*Tribulus terestris* Linn.	280gm
Aralu	*Oroxylum indicum* Linn.	280gm

Table 2: Ingredients used in preparation of Decoction No. 2

Name of Drug	Latin Name	Quantity
Karpas	*Gossypium herbaceum* Linn.	56gm
Badar	*Ziziphus jujube* Lam.	56gm
Shanbija	*Tectona grandis* Linn.	56gm
Kulattha	*Dolichos biflorus* Linn.	56gm

Table 3: Gandha Dravya (Prakshep Dravya)

Name of Drug	Latin Name	Quantity
Amruta	*Tinospora cordifolia* Miers.	2 gms
Kushtha	*Saussurea lappa* CB Clark	2 gms
Nagarmotha	*Cyprus rotundus* Linn.	2 gms
Rasna	*Pluchea lanceolata* Oliver and Hiern	2 gms
Punarnava	*Boerhaavia diffusa* Linn.	2 gms
Eranda	*Ricinus communis* Linn.	2 gms
Pippali	*Piper longum* Linn.	2 gms
Shatapushpa	*Foeniculum vulgare* Linn	2 gms
Bala	*Sida Cordifolia* Linn.	2 gms
Prasarani	*Paederia foetida* Linn.	2 gms
Jatamansi	*Nardostachys Jatamansi* Linn.	2 gms
Kutaki	*Picrorhiza kurroa* Linn.	2 gms

Preparation of Mashadi Tailam

After preparation of above three decoctions, all were mixed in Sesame oil (2240 ml) after that paste of gandha dravya mixed and it was heated at a medium heat till all the moisture evaporates and the oil reaches the 'Mridu paka' stage

Result of Analysis of Mashadi Tailam

Analysis of Mashadi Tailam was done as per Food and Drug Administration (FDA) approved laboratory and results obtained are tabulated as below.

Table 4: Results of Physicochemical analysis of Mashadi Tailam

Parameter	Value
Moisture	0.12%
Specific gravity	0.9735
Refractive index	1.4648
Saponification value	180.35
Unsaponificable matter	2.10
Iodine value	100.52
Acid value	2.80

Clinical study

Criteria of Assessment

The effect of therapy had been evaluated on the basis of symptoms mentioned below-

- SLR Test
- Flexion of spine
- Extension of spine
- Pain (Visual Analogue Scale)
- Tingling numbness in lower extremities.

Criteria of Assessing the Improvement

SLR Test: Minimum 10 inches rise in SLR Test was considered as improved.

Lumbar flexion: Minimum 3 inches decrease in flexion was considered as improved.

Lumbar extension: Minimum 3 inches increase in extension was considered as improved.

Pain

VAS score 0 mm: None
VAS score 1mm-20mm: Annoying
VAS score 20-40mm: Uncomfortable
VAS score 40-60mm: Dreadful
VAS score 60-80mm: Horrible
VAS score 80-100mm: Agonizing

Tingling Sensation: Paraesthesia and tingling sensation completely absent was considered as improved.

Overall Assessment

Relieved: Improvement of all five Parameter

Partially Relieved: Improvement in any four Parameters

Not Relieved: No improvement in any Parameter

Table 5: Distribution of patients in both groups

Parameter	χ^2	P
Age wise distribution	0.68	p>0.05
Sex wise distribution	2.41	p>0.05
Occupation wise distribution	1.00	p>0.05
Residence wise distribution	0.27	p>0.05

Table 6: Effect of Therapy in Trial Group

Parameter	X_1	S.D.	S.E.	t	p
S.L.R.T.	17.83	6.50	1.19	15.03	P<0.001
Flexion	- 4.70	2.04	0.37	12.64	P<0.001
Extension	8.80	5.06	0.92	9.52	P<0.001
Pain	-74.80	19.20	3.50	21.34	P<0.001

Parameter	χ^2	P
Tingling sensation	42.42	P<0.001

Table 7: Effect of Therapy in Control Group

Parameter	X_2	S.D.	S.E.	t	P
S.L.R.T.	3.10	3.42	O.76	3.60	P<0.001
Flexion	-1.13	1.38	0.25	4.49	P<0.001
Extension	-0.57	1.10	0.20	2.81	P>0.001
Pain (VAS scale)	-40.93	11.95	2.18	18.76	P<0.001

Parameter	χ^2	P
Tingling sensation	1.40	p>0.001

Table 8: Comparison of effect of therapy of both groups

Parameter	X_1	X_2	S.E.	t	P	
S.L.R.T.	17.83	3.10	1.34	10.99	P<0.05	P<0.001
Flexion	-4.70	- 1.13	0.45	7.94	P<0.05	P<0.001
Extension	8.80	- 0.57	0.95	9.90	P<0.05	P<0.001
Pain(VAS scale)	-74.80	- 40.93	4.13	8.20	P<0.05	P<0.001

Parameter	χ^2	P
Tingling Sensation	35.41	P<0.05, p<0.001

Table 9: Overall effect of treatment

	Control Group		Trial Group	
	No. of pts.	%	No. of pts.	%
Relieved	01	3.33	26	86.67
Partial Relieved	02	6.67	0	0
Not Relieved	27	90.00	04	13.33

χ^2= 37.45; P<0.05

RESULTS

The Observation noted according to special case record form at regular interval. The confidence limit had been fixed at 95% and the level of significance had been at 5%. Paired and Unpaired Students't' test had been applied for objective parameter and 'Chi' Square test had been applied for subjective parameters. The results obtained are summarized in Table 5 to 9.

Table 5 shows that the patients distributed in both groups were comparable at base line. The observed difference in distribution was statistically insignificant. Table 6 shows that Group A i.e. Mashadi Tailam anuvasan basti along with traction (wt in kg/10) was significantly effective in increasing SLR Test, Extension of spine and Reduction in pain, Flexion of spine, tingling numbness at the level of significance p< 0.001. Table 7 shows that control Group i.e. only traction (wt in kg/10) was not highly effective in increasing S.L.R.T., Extension of spine and Reduction in Pain, Flexion of spine, Tingling numbness. It was effective at level of 5%. Table 8 shows that increase in S.L.R.T., Flexion of spine and Extension of spine were better in trial group as compared to control group. The Table 9 illustrates that the patients relieved in trial group were 86.67% and not relieved 13.33% whereas the Patients relieved in control group were only 3.33% and 90% patients were not relieved. The patients partially relieved in control group were only 6.67%. The 'Chi' square test showed p<0.05.

DISCUSSION

The patients relieved in trial group were 86.67% and not relieved were 13.33% whereas the patients relieved in control group were only 3.33% and 90% patients were not relieved. The patients partially relieved were only 6.67% in the control group. Hence Mashadi Tailam Basti along with lumbar traction was completely effective than only lumbar traction. The 'Chi' square (χ^2) test shown that p<0.05.

The statistical analysis of the observational parameters clearly indicates that Mashadi Tailam Anuvasan Basti along with lumbar traction was better in symptomatic relief of Lumbar Spondylosis than only lumbar traction.

Mashadi Tailam posses Madhur, Katu, and Kashaya rasa, Snigdha, Guru, Tikshna Sukshma guna, Ushna veerya, Madhur vipaka and Vata-kapha shamak properties. Drugs act in accordance with their Rasa, some (in accordance) with their Veerya, other in accordance with their Guna or Vipaka or Prabhava. When Rasa, Vipaka and Veerya are of equal strength, the action of each is superseded by the other in succession and terminally all the composite properties are over powered by the extraneous force-Prabhava.[5]

Basti therapy is one of the most important therapeutic procedures in Ayurveda. The patients exclusively suffering from Vata rogas may be given Anuvasan Basti.[6] Its effect are not only limited up to rectum and Samshodhana of malas (faeces), but also it produces widespread systemic effects. The pharmacological action and therapeutic effects of basti are as follows-

Charaka states that anuvasan basti when given, nourishes the whole body[7] He also states a particular position for administering basti, so that basti can go deep into gastrointestinal tract and produce widespread effects. By proper volume basti also produces mechanical (pressure) effect and helps in various motility disorders.

In the process of basti karma, various drugs are used for specific purposes. The basti is having its pharmacological effect due to the cumulative pharmacodynamic and pharmacokinetic effect of various drugs used in the process.

The sesame oil used in the preparation of Mashadi Tailam basti is rich in polyunsaturated fatty acids (PUFA), which are the essential components of cell membrane and nerve tissue. The linoleic acid present in sesame oil is essential for functioning of vascular, immune, nervous and renal systems and are anti-atherogenic, anti- thrombotic and anti-inflammatory in nature.

Basti therapy by virtue of its medicaments greatly influences the normal bacterial flora of colon. By doing so, it modulates the rate of endogenous synthesis of Vitamin B_{12} i.e. pyridoxine, which is normally manufactured by colonic flora. This Vitamin B_{12} have a role to play in the maintenance of regeneration of nerves.

Again it is also reported in some studies (Ayurvedic panchakarma by Kasture) that after basti karma there is reduction of pyruvic acid content of ketoacids in blood. Due to the reduction in pyruvic acid content there is rise in Vit. B_1 in blood which is responsible for integrity of peripheral nerve functioning and prevents its degeneration. This vitamin also influences the heart and circulatory system.

In Ayurveda much importance has been given to Vayu. It controls the entire physiological functions in the human body. Pakwashaya is supposed to be the main seat of vayu. Basti chikitsa is supposed to be the best therapy for vayu. This is most probably due to its controlling and regulating mechanism over the enteric nervous system (ENS).

The enteric nervous system or gut brain is an independent, integrative system with structural and functional properties that are similar to those in central nervous system. The physiological and pharmacological properties of basti chikitsa are said to be the outcome of modulation of gut brain upto certain extent.

Thus, by improved functioning of neural system basti could help in vatika disorder, secondly basti through the volume of its contents may produce a therapeutic intraintestinal pressure influencing various receptors in rectum and lower part of colon and result may be absorption of medicament leading to added basti effect.

Therefore the Mashadi Tailam basti by virtue of its actions mentioned previously help in reducing pain, tingling sensation, restricted and painful movement of lumbosacral spine, which are cardinal signs of lumbar spondylosis.

Basti reduces the inflammation of soft tissues and hyper sensitivity of nerves which is the basic pathology of lumbar spondylosis. The endogenous synthesis of Vit. B_{12} and Vit. B_1 helps in reducing the tingling sensation of the lower extremities and further prevents the degeneration of nerves.

CONCLUSION

From above observation and analysis this may be concluded that the Mashadi Tailam Anuvasan Basti with Lumbar traction is statistically significant with subjective and objective parameters in Kativata (Lumbar Spondylosis) as compared to only Lumbar Traction.

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