

Practices of *Niruha Vasti* in Low back pain from an Academic Hospital of Kerala - An observational study

Research Article

Shabna P^{1*}, Jigeesh P P^{2*}, Subin V R³

1. PG Scholar, 2. Professor, 3. Assistant Professor,
Department of Panchakarma, VPSV Ayurveda College Kottakkal India.

Abstract

Introduction: *Niruha Vasti* plays a major role when compared to *Anuvasana*, because of its variety of drug combinations and utility in a wide range of clinical conditions. Many formulations of *Vasti* are, in practice which came from the clinical experiences of eminent physicians and from researches. There is a deficit of baseline data regarding the current practices of *Niruha Vasti* in LBP and the preparation of which may help to prioritize the topics for further research. **Materials and Methods:** The study design was prospective cross-sectional observational study and sample included all the patients admitted in VPSV Ayurveda College Hospital, Kottakkal during January-December 2018, presented with LBP and posted for *Niruha Vasti*. Study tool used was a Data collection form which was prepared from available literatures. Data was verified, analyzed and presented with the help of tables and charts. Statistical analysis was done by Microsoft office 2016 and IBM SPSS Statistics version 16. **Observation and Results:** Total 141 patients were observed and among them 474 *Vasti* done in 174 schedules and 16 different types of *Vasti* were used. *Vaitarana Vasti*, *Madhutailika Vasti*, *Kshira Vasti*, *Ruksha Vasti*, *Erandamuladi Vasti* and *Grdhrasihara Vasti* are the major *Vasti* prescribed in LBP patients. **Conclusion:** There are certain characteristic patterns in the practice of *Niruha Vasti* administered in cases of Low Back Pain.

Key Words: Kerala, Low back pain, *Niruha Vasti*, Observational study, Treatment profile, Cross-sectional survey.

Introduction

Among *Panchakarma*, *Vasti* is considered as the supreme therapeutic modality, as it radically weeds out the morbid *Vata*, which is responsible for the pathogenesis of various diseases and movement of other *Dosha*, *Dhatu* and *Mala* within the body (1). Even though *Vasti* is specially indicated for diseases originated from the *pakvasaya* (lower part of the gut), it can also cure diseases affecting the head by different formulations. In practice also, it is very commonly selected for the management of almost all diseases of current scenario irrespective of age, gender or system. *Vasti* is one of the most important areas of research and several studies on *Vasti* are being conducted in postgraduate and other research centres. Most of the studies have focused on the efficacy of different *Vasti* in various conditions. *Niruha Vasti* plays a major role when compared to *Anuvasana*, because of its variety of drug combinations and utility in a wide range of clinical conditions

Low Back Pain (LBP) is one of the most frequently encountered conditions in clinical practice, referred to as the 2nd frequent reason for visiting a doctor (2). Up to 84percent of adults have LBP at some time in their lives (3). Although there is no evidence that LBP prevalence has increased, reported disability and absence from work due to LBP have increased significantly in the last thirty years (4). It is not a specific disease, but rather a complaint that may be caused by a large number of underlying problems of varying levels of seriousness. It can have major adverse impacts on the quality of life and function. In *Ayurveda*, LBP has been explained as a symptom of several pathological states of *Dosha* by different authors. The terms like *Trikasula*, *Katisula*, *Pristasula*, *Gridhrasi*, *Katigraha* refers to similar conditions (5, 6). *Pakvasaya* is the location of vitiated *Dosha* and hence *Vasti* has been advocated as the treatment (7).

Kerala is well acknowledged as one of the premier locations where *Ayurveda* flourishes. *Keraleeya Ayurveda* is a most sought therapy by both patients and healthy and possess a considerable customer base. Innumerable clinics and hospitals prevail in this Indian state and most *Panchakarma* therapies are practiced here commonly. Data taken from VPSV Ayurveda College Kottakkal, a pioneer *Ayurveda* institution of Kerala showed that an average of 200 *Niruha Vasti* is being done per month out of which 10% done for LBP. Previous studies have focused on the efficacy of different *Vasti* formulations and proved to be effective in various clinical conditions. There are no data

* Corresponding Author:

Shabna P

PG Scholar,

Department of Panchakarma,

VPSV Ayurveda College,

Kottakkal. India.

Email Id: shabnapusman@gmail.com

regarding the current practices of *Niruha Vasti* in LBP. It is not known that which *Vasti* is commonly prescribed in LBP and whether pathology of LBP influence the selection of *Vasti*. No data are available about the types of *Vasti* practiced in LBP, their demographic variables, influential factors for selection of *Vasti* and clinical predictors of outcome of *Vasti*; data about the magnitude of complications is also lacking. Hence, this study has been carried out to document the clinical practices of *Niruha Vasti* in LBP patients at the VPSV Ayurveda College Hospital, Kottakkal during 2018.

Materials and methods

This study was conducted as a prospective cross-sectional observational study with ethical clearance obtained from the Institutional Ethics Committee of V.P.S.V Ayurveda College, Kottakkal. (Approval no: Ref IEC/CL/17/17; dated 27/04/2017). Data collection started on January 1st, 2018 and was completed on December 31st 2018. The sample included all the participants admitted in VPSV Ayurveda College Hospital, Kottakkal during January-December 2018, who had presented with LBP and were posted for *Niruha Vasti*. Written informed consents were obtained from all participants. The data were collected from the records available in the hospital like electronic data, case sheets and the patients were also interviewed. The information collected were entered in a data collection form. The pro forma contained sociodemographic information, medical history, details of clinical examinations, available laboratory results, investigations and diagnosis. The details of *Niruha Vasti*, including the formulation with dose of each content, schedule, pattern of doing, placement of *Niruha Vasti* in the course of treatment, diet during *Niruha Vasti*, events (Complications of *Niruha Vasti*) if any, were also recorded.

Stored data were cleaned, duplicate data entry and missing data were checked prior to statistical analysis. It was done by Microsoft office 2016 and IBM SPSS Statistics version 16. All categorical variables were expressed as frequencies and percentages, and continuous variables were expressed as mean with standard deviation or median with range. Dummy tables were prepared for presentation of analysed data.

Results

Data of a total of 141 participants were analysed during the 12 months study period. Among 141 participants 29 participants were posted for two schedules of the *Vasti*, 2 participants had 3 schedules of *Vasti* and the remaining 110 participants had one schedule of *Vasti* in the total course of treatment. Thus, it was estimated that a total of 174 schedules were there in the study period. A total of 474 *Vasti* were done in these schedules. Out of 174 schedules, 14.9% had a *Yoga Vasti* pattern; 23% had done as single *Vasti*; and some other patterns followed at 62.1%. *Karma Vasti & Kala Vasti* were not seen prescribed for LBP during the study period (table 1)

Table 1. Distribution of Niruha Vasti according to pattern

Pattern	Frequency	Percent
<i>Karma Vasti & Kala Vasti</i>	0	0.0
<i>Yoga Vasti</i>	26	14.9
Single <i>Vasti</i>	40	23.0
Other	108	62.1
Total	174	100

Among 108 schedule which had some other patterns of *Niruha*, 28 had followed the pattern of doing 3 *Kashaya Vasti* consecutively and this pattern was seen in schedule of *Vaitarana Vasti* and *Ruksha Vasti*. 7 followed the schedule of two consecutive *Kashaya Vasti* and another 7 followed two *Kashaya Vasti* with rest in between them; the patterns two *Matra Vasti* followed by three consecutive *Kashaya Vasti* and three *Kashaya Vasti* with rest in between each *Vasti* were seen in 6 schedules each. Five and seven consecutive *Kashaya Vasti* were observed in 5 schedules each. Similarly, few other patterns have also been seen with one schedule. 24.1 % had some other patterns which were done in single cases only (table 2).

Table 2. Unclassified patterns of Niruha followed

Pattern	Frequency	Percent
<i>kv kv kv</i>	22	20.4
<i>kv kv</i>	7	6.5
<i>kv rest kv</i>	7	6.5
<i>mv mv kv kv kv</i>	6	5.6
<i>kv rest kv rest kv</i>	6	5.6
<i>kv kv kv kv kv</i>	5	4.6
<i>kv kv kv kv kv kv kv</i>	5	4.6
<i>mv mv kv mv kv</i>	4	3.7
<i>kv mv kv</i>	3	2.9
<i>(kv mv) (kv mv) (kv mv) (kv mv)</i> <i>(kv mv)</i>	3	2.9
<i>mv kv kv</i>	2	1.9
<i>mv mv kv kv mv</i>	2	1.9
<i>mv kv mv kv kv</i>	2	1.9
<i>mv kv kv kv</i>	2	1.9
<i>mv mv kv rest kv</i>	2	1.9
<i>mv kv mv kv mv kv</i>	2	1.9
<i>kv kv kv kv</i>	2	1.9
Other	26	24.1
Total	108	100.0

(NB: *kv* -*Kashaya Vasti*; *mv* – *Matra Vasti*; *(kv mv)* – *Kashaya Vasti* and *Matra Vasti* in bracket indicates both done on same day)

It was observed that among 474 *Niruha Vasti*, 16 types of *Vasti* were done. There were 106 *Kshara vaitarana Vasti*; 84 were *Madhutailika Vasti*; 64 were *Ruksha Vasti*; 47 were *Grdhrasihara Vasti*; 45 were *Erandamuladi Vasti*; 18 were *Kshira vaitarana Vasti*; 17 were *Mustadi yapana Vasti*; 10 were *Dvigunaprasrta Vasti*; 3 each were *Erandamuladi yapana Vasti*, *Manchishtadi kshara Vasti* and *Udavartahara Vasti* respectively; 2 were *Doshahara Vasti* and 1 each were *Kledahara Vasti*, *Kshara Vasti* and *Yapana Vasti* respectively (table 3).

Table 3. Distribution of various types of Vasti

No	Vasti	Frequency	Percent
1	<i>Kshara vaitarana Vasti</i>	106	22.4
2	<i>Madhutailika Vasti</i>	84	17.7
3	<i>Kshira Vasti</i>	69	14.6
4	<i>Ruksha Vasti</i>	64	13.5
5	<i>Grdhrasihara Vasti</i>	47	9.9
6	<i>Erandamuladi Vasti</i>	45	9.5
7	<i>Kshira vaitarana Vasti</i>	18	3.8
8	<i>Mustadi yapana Vasti</i>	17	3.6
9	<i>Dvigunaprasrta Vasti</i>	10	2.1
10	<i>Erandamuladi yapana Vasti</i>	3	0.6
11	<i>Manchishtadi kshara Vasti</i>	3	0.6
12	<i>Udavartahara Vasti</i>	3	0.6
13	<i>Doshahara Vasti</i>	2	0.4
14	<i>Kledahara Vasti</i>	1	0.2
15	<i>Kshara Vasti</i>	1	0.2
16	<i>Yapana Vasti</i>	1	0.2
	Total	474	100.0

The distribution of different Vasti among participants has shown that *Madhutailika Vasti* was done in 42 participants and *Kshara vaitarana Vasti* among 41 participants. *Kshira Vasti*, *Erandamuladi Vasti* and *Grdhrasihara Vasti* were done among 24, 23, and 22 participants respectively. *Ruksha Vasti* was done in 17 participants, *Mustadi yapana Vasti* in 6 participants and *Kshira vaitarana Vasti* among 5 participants. *Dvigunaprasrta Vasti* and *Doshahara Vasti* were done among 2 participants each. *Erandamuladi yapana Vasti*, *Manchishtadi kshara Vasti*, *Udavartahara Vasti*, *Kledahara Vasti*, *Kshara Vasti* and *Yapana Vasti* were done only in one patient each (table 4)

Table 4. Distribution of different types of Vasti among participants

No	Vasti	Frequency	Percent
1	<i>Madhutailika Vasti</i>	42	29.8
2	<i>Kshara vaitarana Vasti</i>	41	29.1
3	<i>Kshira Vasti</i>	24	17
4	<i>Erandamuladi Vasti</i>	23	16.3
5	<i>Grdhrasihara Vasti</i>	22	15.6
6	<i>Ruksha Vasti</i>	17	12.1
7	<i>Mustadi yapana Vasti</i>	6	4.3
8	<i>Kshira vaitarana Vasti</i>	5	3.5
9	<i>Dvigunaprasrta Vasti</i>	2	1.4
10	<i>Doshahara Vasti</i>	2	1.4
11	<i>Erandamuladi yapana Vasti</i>	1	0.7
12	<i>Manchishtadi kshara Vasti</i>	1	0.7
13	<i>Udavartahara Vasti</i>	1	0.7
14	<i>Kledahara Vasti</i>	1	0.7
15	<i>Kshara Vasti</i>	1	0.7
16	<i>Yapana Vasti</i>	1	0.7

Among the total 174 schedules, 84 (48.3%) were placed as the last treatment, 74 (42.5%) were done in the middle of treatment course and 16 were placed as initial treatment (table 5).

Table 5. Placement of Vasti schedule in the total course of treatment

Placement of Vasti schedule	Frequency	Per cent
Starting	16	9.2
Middle	74	42.5
End	84	48.3
Total	174	100

In the 16 Vasti schedules which were done as initial treatment, 10 were *Vaitarana Vasti* and 6 were *Ruksha Vasti*. The Vasti schedules placed in the middle of treatment course were, 20 *Vaitarana Vasti* schedules, 14 *Madhutailika Vasti*, 13 *Erandamuladi Vasti*, 11 *Ruksha Vasti* and 7 *Grdhrasihara Vasti*. 2 *Kshira Vasti* schedules also placed in the middle of the treatment course. One schedule of each *Udavartahara Vasti*, *Mustadi yapana Vasti*, *Manchishtadi kshara Vasti*, *Kshara Vasti*, *Kledahara Vasti*, *Doshahara Vasti* and *Dvigunaprasrta Vasti* were also placed in the middle of the treatment course. Among the 84 Vasti schedules done as the last treatment, 28.6% were *Madhutailika Vasti*, 22.6% were *Kshira Vasti*, 19.1% were *Vaitarana Vasti* and 13.1% were *Grdhrasihara Vasti*. 8.3% of *Erandamuladi Vasti* and 4.8% of *Mustadi yapana Vasti* were done as last treatment. 1.2% each, *Dvigunaprasrta Vasti*, *Erandamuladi yapana Vasti* and *Ruksha Vasti* were also done at the end treatment in the total treatment course.

Among the 106 *Vaitarana Vasti*, 64 were done using *Dhanyamla* and *Gomutra* was used in 39 Vasti. Instead of *Dhanyamla* or *Gomutra*, *Kulattha gokshura kashaya* (240ml) was used in 3 Vasti.

Among the 84 *Madhutailika Vasti* done for LBP, *Dhanvantaram taila* was used in majority of Vasti (43) and *Sahacharadi taila* was used in 27 Vasti. In 9 Vasti, *Tila taila* was used, 4 were done using *Pippalyadi anuvasana taila* and in one Vasti *Sinduvra eranda taila* was used.

In this study it was noted that, among the 69 *Kshira Vasti*, 46 were done using *Panchatiktaka Kshira kvatha* all with a dose 240 ml. *Bala yashti asvagandha kshira kvatha* were used in 22 Vasti and one Vasti was done with *Dhanvantaram kshira kvatha*.

Table 6. Different combinations of Ruksha Vasti

No	Combinations	Count	%
1	<i>Amrtottaram kashaya</i> – 300 ml; <i>Vaisvanara churnam</i> – 30 gm	41	64.1
2	<i>Amrtottaram kashaya</i> – 480 ml; <i>Vaisvanara churnam</i> – 30 gm	12	18.8
3	<i>Gandharvahastadi Kashaya</i> – 300 ml; <i>Vaisvanara churnam</i> – 30 gm	11	17.2

Among the 64 *Ruksha Vasti*, 64.1% were done, using 300 ml *Amrtottaram kashaya* and 30 gm *Vaisvanara churnam*. 480 ml of *Amrtottaram Kashaya* was used in 18.8% of Vasti. In 17.2% Vasti, 300 ml *Gandharvahastadi kashaya* was used instead of *Amrtottaram Kashaya* (table 6).

The standard combination of *Grdhrasihara Vasti* which is followed at VPSV Ayurveda college Kottakkal, is *Saindhava* – 15 gm; Honey – 120 ml; *Taila* and *Ghrta* according to condition – 75ml each; *Kalka* prepared using *Madana*, *Vacha*, *Pippalimula*, *Ajamoda*, *Satapushpa*, *Yashti*, *Devataru*, *Indrayava*, *Sarshapa* – 30 gm; *Kashaya* prepared using *Vasa*, *Asmabheda*, *Punarnava*, *Dhanyaka*, *Eranda*, *Dasamula*, *Bala*, *Murva*, *Yava*, *Kola*, *Sati*, *Kulattha*, *Vilva*, *Kiratatikta* – 480 ml; *Ikshurasa* – 75 ml; *Ajamamsarasa* – 30 ml; *Gomutra* – 75ml and *Milk* -75 ml.

Table 7. Distribution of Taila used in Niruha (n=406)

No	Category	Frequency	Percentage
1	Sahacharadi taila	218	53.7
2	Dhanvantaram taila	98	24.1
3	Pippalyadi anuvasana taila	24	5.9
4	Madhuyashyadi taila	18	4.4
5	Tila taila	12	3.0
6	Mahanarayana taila	11	2.7
8	Satahvadi taila	7	1.7
9	Karpasasthyadi taila	5	1.2
10	Sinduvara eranda taila	4	1
7	Panchamla taila	3	0.7
11	Chinchadi taila	3	0.7
12	Guggulutiktaka taila	3	0.7
Total		406	100.0

Among 474 Niruha Vasti done, taila was used in 406 Vasti. In that, 218 were done added with Sahacharadi taila; 98 were done using Dhanvantaram taila; 24 were done with Pippalyadi anuvasana taila; 18 were done with Madhuyashyadi taila. In 12 Vasti, Tila taila was used; 11 were done with Mahanarayana taila; 7 were done using Satahvadi taila; 5 were done with Karpasasthyadi taila; 4 were done with Sinduvara eranda taila; 3 each were done using, Panchamla taila, Chinchadi taila and Guggulutiktaka taila respectively (table 7).

Table 8. Distribution of major Vasti in respect to LBP pathology

Vasti	Lumbar spondylosis + IVDP	IVDP	Lumbar spondylosis	Spinal canal stenosis	Facet arthropathy	Spondylo listhesis	Sacralization
	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)	Count (%)
Erandamuladi	5 (11.1)	7 (11.3)	3 (18.8)				
Grdhrasihara	5 (11.1)	6 (9.7)	1 (6.3)	3 (25.0)			
Kshira Vasti	6 (13.3)	5 (8.1)	3 (18.8)	1 (8.3)			1 (20.0)
Madhutailika	10 (12.2)	13 (21.0)	4 (25.0)	3 (25.0)	1 (20.0)	8 (53.3)	3 (60.0)
Ruksha Vasti	2 (4.4)	11 (17.7)	2 (12.5)	2 (16.7)	2 (40.0)	4 (26.7)	1 (20.0)
Vaitarana Vasti	17 (37.8)	20 (32.3)	3 (18.8)	3 (25.0)	2 (40.0)	3 (20.0)	
Total	45 (100.0)	62 (100.0)	16 (100.0)	12 (100.0)	5 (100.0)	15 (100.0)	5 (100.0)

Among participants presented as IVDP+ Lumbar spondylosis, 37.8% had done Vaitarana Vasti, 13.3% had Kshira Vasti, 12.2% had Madhutailika Vasti, 11.1% each had Erandamuladi Vasti and Grdhrasihara Vasti respectively and 4.4% had done Ruksha Vasti.

In participants with IVDP, 32.3% were done Vaitarana Vasti, 21% had Madhutailika Vasti done and Ruksha Vasti was done in 17.7%. Erandamuladi Vasti was done in 11.3%, Grdhrasihara Vasti in 9.7% and Kshira Vasti in 8.1% participants presented with IVDP.

The participants presented with Lumbar spondylosis had Madhutailika Vasti in 25%, Erandamuladi Vasti, Kshira Vasti and Vaitarana Vasti were done in 18.8% each, 12.5% had Ruksha Vasti and in 6.3% Kshira Vasti was done. Among the participants presented with Spinal canal stenosis, 25% each had Grdhrasihara Vasti, Madhutailika Vasti and Vaitarana Vasti respectively; 16.7% were done Ruksha Vasti and in 8.3% Kshira Vasti was done.

Vaitarana Vasti (40%) and Ruksha Vasti (40%) was done among the majority of participants with Facet arthropathy. In 20% Madhutailika Vasti also done.

Madhutailika Vasti was done in the majority (53.3%) of Spondylolisthesis participants. Ruksha Vasti (26.7%) and Vaitarana Vasti (20%) are the other Vasti done among Spondylolisthesis participants.

It was noted that in Sacralization also the major Vasti done was Madhutailika Vasti (60%); and 20% each had done Ruksha Vasti and Kshira Vasti (table 8).

Table 9. Other Procedure during Niruha

Procedure	Frequency	Percent
Without any other Procedure	355	74.9
With other procedure	119	25.1
Total	474	100.0

Among 474 Vasti done, 74.9% had no other procedure on the same day of Vasti; and 25.1% had some other procedures on the same day of Niruha. Snigdha sveda, Ruksha sveda, udvartana, Kati vasti etc. are the procedures done along with Niruha (table 9).

Discussion

The present study was planned to document clinical practices of Niruha Vasti in LBP participants admitted in VPSV Ayurveda College Hospital during 2018. A total of 141 participants and the details of their Vasti procedure were observed and analysed. Perhaps this was an odd study as most of the researches in Panchakarma are focused on testing the efficacy of various Vasti. The study has helped to delineate the peculiarities of Niruha Vasti administered in LBP.

In this study, it was observed that the majority of Vasti are not done in any particular pattern of Karma

Vasti, *Kala Vasti* or *Yoga Vasti* as explained in the text. According to a survey done by Abhilash Krishnan et al, 90% of the participants reported doing the *Yoga Vasti* pattern, 12% doing *Karma Vasti* and 19% practicing *Kala Vasti* (8). The observation of the current study does not match with that of the survey. The setting of the survey was across Kerala and it was based on the general practices of *Vasti* irrespective of disease and irrespective of any time frame. But the study setting of the present study was limited to VPSV Ayurveda College Hospital Kottakkal and *Niruha* done in LBP, during the year of 2018 only. It is also clear that it need not be fixed to any pattern, moreover, it should be specific to the case. This freedom has been left to the physician hence, the trend showed in the current study is not a strange observation, rather it supports the view of personalized treatment.

It was quite interesting to note that about 16 different types of *Niruha* are being used in LBP. A number of factors may influence the selection of *Vasti*. *Dosha* predominance of the participant will be taken while selecting the *Vasti*. Pathological variations are another factor to decide *Niruha*. As the pharmacological actions of *Niruha* include various aspects like *Pachana*, *Brmhana*, *Utklesana* etc. *Vasti* may be selected accordingly. In short, it is the logic of physician by which any specific *Vasti* is selected in a given condition. The present study shows that *Vasti* is selected with due care.

Vaitarana Vasti was the most prescribed *Vasti* (22.6%) in LBP followed by *Madhutailika Vasti* (17.7%), *Kshira Vasti* (14.6%), *Ruksha Vasti* (13.5%), *Erandamuladi Vasti* (9.9%), and *Grdhrasihara Vasti* (9.5%). Apart from these, 3.8% *Kshira vaitarana Vasti*, 3.6% *Mustadi yapana Vasti* and 2.1% *Dvigunaprasrta Vasti* were also used. *Erandamuladi yapana Vasti*, *Manchishtadi kshara Vasti*, *Udavartahara Vasti*, *Doshahara Vasti*, *Kledahara Vasti*, *Kshara Vasti* and *Yapana Vasti* are also seems to be prescribed in very few cases. Among the above said formulations, the effect of *Vaitarana Vasti*, *Madhutailika Vasti*, *Erandamuladi Vasti*, *Mustadi yapana Vasti*, *Vrshadi Vasti* (*Grdhrasihara Vasti*) and *Erandamuladi yapana Vasti* in LBP have already been studied (9-16). *Yapana Vasti* has indication in LBP related symptoms, but no research works were yet done (17-19).

No direct references are available for *Ruksha Vasti* in LBP and no study was done with *Ruksha Vasti* in LBP patients. But it is practiced by physicians in a number of cases. This reveals that the selection of formulation for *Vasti* is based on their clinical experiences and well-reasoned by their logical thinking. Such experiences should be put into research to validate their significance. Similarly, no previous research works available to substantiate the effect of *Kshara Vasti* in LBP. *Kshara Vasti* is indicated for *Vidsamga*, *Udavarta*, *Gulma* etc. (20). It is evident that there should be involvement *Apana* in all these conditions and the site of vitiation is *Pakvasaya*. In *Katigraha* also, the origin of aggravation of *Dosha* is same and hence, the indication is reasonable.

Manchishtadi kshara Vasti has been evolved from clinical experiences. *Kshara Vasti* is mentioned by *Cakradatta* and *Manchishtadi kvatha* is mentioned in *Sarngadhara Samhita* ([20, 21). Based on these, effect of *Manchishtadi kshara Vasti* in peripheral arterial disease has been studied (22). But no previous research works were available to prove the efficacy of *Manchishtadi kshara Vasti* in LBP patients. As far as *Ayurveda* is concerned, practices are established by adopting predominantly the experiences of skilled physicians and rest from the observations of studies.

In the 174 *Vasti* schedules, 84 were done as the last treatment and 74 were placed in the middle of total treatment course and 16 *Vasti* schedules were done in the starting. *Vasti* has got the multidimensional therapeutic effect and it can do *Brmhana*, *Sodhana*, *Samana*, *Rasayana* etc. As per the basic treatment protocol purification always follow preparatory procedures and it was placed at the end of a treatment schedule. In conditions where post purificatory treatments are necessary as in the case of remnant *Dosha* or post procedural exhaustion exists, more treatments followed the administration of *Niruha*.

In participants where *Vasti* is planned as the first line of the treatment, *Vaitarana Vasti* and *Ruksha Vasti* were usually selected. As a rule, the initial stage of a disease may have association *Kapha/ Ama*, so *Vaitarana Vasti/ Ruksha Vasti* will be helpful in the elimination of vitiated complex lodged in *Pakvasaya*. *Vasti* is the major treatment for *Vata*. Repeated administration of *Sneha* and *Sveda* followed by either *Virechana* or *Vasti* is the rule of management. Hence, *Vasti* may be placed in between them. When the purpose of *Vasti* is to produce *Brmhana*, *Samana* or *Rasayana* it is also scheduled as the last. *Madhutailika Vasti*, *Kshira Vasti* and *Grdhrasihara Vasti* are seen at the end of treatment.

The different types of *Vasti* and change in its contents or dose pattern, selection of *Taila* and *Ghrta* in *Vasti* etc., mostly depends on the logic of the physician and the need of patient. Even though *Gomutra* is the content mentioned by different *Acharya* for *Vaitarana Vasti*, *Dhanyamla* was used in the majority of cases. In *Grdhrasihara Vasti* and *Erandamuladi Vasti* also *Dhanyamla* was prescribed instead of *Gomutra* for a few patients. Scarcity in obtaining fresh *Gomutra* may be one reason for choosing *Dhanyamla*. Aswani P S et al, reported that since *Gomutra* is very much *Ruksha* despite this, in clinical practice *Dhanyamla* is seemed to be used which is neither too *Tikshna* nor too *Mrdu* and is indicated for *Asthapana* (23). The experts in the field opine that *Gomutra* can be avoided because of the risk of leptospiral infection and *Dhanyamla* can be safely used (24).

Even though it is discussed that for the purpose of *Sodhana* rather than medicated *Taila*, the use of *Tila taila* sufficient, the data obtained shows majority of *Niruha* were done using medicated *Taila*. Among the 406 *Niruha* which used *Taila*, 53.7% were done using *Sahacharadi taila*. The most used *Taila* in *Erandamuladi Vasti*, *Vaitarana Vasti* and *Grdhrasihara Vasti* was *Sahacharadi taila*. *Sahacharadi taila* has an

affinity towards the diseases of *Adhakaya* that may be the reason for selection of *Sahacharadi taila* by a majority of the physician. In *Madhutailika Vasti* and *Kshira Vasti*, *Dhanvantaram taila* was used mainly. Only 3% used *Tila taila*. A survey study among physicians of Kerala about the practice of *Asthapana* and *Anuvasana Vasti* reported that 87% of participants using *Taila/ Ghrita* specific to diseases rather than *Tila taila* (8). On the contrary, while using *Ghrita*, plain ghee was mostly used (40.7%) in the current study. The study done by Mohammed Imthiyas et al, with plain ghee and medicated ghee for *Sodhananga snehapana* also proved the effect of plain ghee for the purpose (25). In this study, it was observed that *Vaitarana Vasti* was prescribed in the majority (70.1%) cases of IVDP. *Madhutailika Vasti* was prescribed in sacralization (60%) and spondylolisthesis (53.3%). There were no previous data available about the influence LBP pathology in selection *Vasti*. Further studies are needed to prove the association.

Most of the *Vasti* (74.9%) were done without any concomitant procedure. While administering a *Sodhana* process it is not fair to undergo any other procedure, rather rest is advised on the day. Of course, while administering *Vasti* with lesser dose and *Vasti* other than *Sodhana* are practiced, procedures with similar effects can be advised along with.

There are very little or no studies showing the status of our current practice and preparation of a profile or characteristics of practice have ever become an objective of any study. Observational studies of this pattern can definitely help to find out thrust areas of research and fix the priority of our research problems. Thus, the current study becomes important and unique among the current Ayurvedic research field. Overall, the study strengthens the concept that the medicine or treatment should be selected considering the stage of the disease, involvement of *Dosha* and pathology of the disease. Patient characteristics and severity of the disease can also influence the selection. The observations regarding the variation of *Vasti* in different pathologies and selection of oil in *Niruha* should be further investigated through clinical trials. It is also noteworthy that different recipe is used for *Vasti* like *Ruksha Vasti* and *Erاندamuladi yapana Vasti*, a comparative evaluation of these formulations will be useful to find out the best formulation. The efficacy of new formulations needs to be further evaluated.

Conclusion

The results of the current study indicate that there is a high range of types and formulations of *Vasti* practicing in LBP, the selection of which is influenced by the pathology, state of *Dosha* and various other factors. *Vaitarana Vasti*, *Madhutailika Vasti*, *Kshira Vasti*, *Ruksha Vasti*, *Erاندamuladi Vasti* and *Grdhrasihara Vasti* are the major *Vasti* prescribed in LBP patients. *Mustadi yapana Vasti*, *Dvigunaprasrta Vasti*, *Erاندamuladi yapana Vasti*, *Manchishtadi kshara Vasti*, *Udavartahara Vasti*, *Doshahara Vasti*, *Kledahara Vasti*, *Kshara Vasti* and *Yapana Vasti* are also prescribed for LBP. *Vaitarana Vasti* is mostly adopted in the

management of IVDP and physicians do not stick on to the classical patterns of *Vasti kalpa* while managing LBP.

Conflict of interest

Nil

Reference

1. Sreekumar T. *Astāngahr̥daya Vāgbhāṭa Sūtrastāna* (Trans, comme English). 1st ed. Mannuthy: Harisree Publication; 2007; 2: p.83.19/1.
2. Hart LG, Deyo RA, Cherkin DC. Physician office visits for low back pain. Frequency, clinical evaluation, and treatment patterns from a U.S. national survey, Spine. [PubMed] [Internet]. 1995 Jan 1; 20(1):11-9 [cited 2017 Apr 6].
3. Stephanie G Wheeler, Joyce E Wipf, Thomas O Staiger. Evaluation of low back pain in adults [Internet]. 2017 Mar [cited 2017 Apr 6].
4. Nicholas A Boon, Nicki R Colledge, Brain R Walker. Davidson's principles and practices of medicine. 20th ed. Churchill and Livingstone Elsevier Limited; 2006 p.1083. Available from: <http://www.uptodate.com/contents/evaluation-of-low-back-pain-in-adults>
5. Sidhinandan miśra. Bhisajya Ratnavali of Kaviraj Govind Das Sen (Siddhiprada, comme, Hindi) Varanasi: Chaukhambha Surbharathi Prakashan; 2007; 1:p.518.26/4.
6. Gangasahaya pandeya. Charaka Samhita of Agnivesa (AyurvedaDipika, Chakrapanidatta, comme, Sanskrit; Vidyothini, Kasinatha satri, comme, Hindi) Varanasi: Chaukhambha Surbharathi Prakashan; 2007; 1:p.269.20/11.
7. Bhisagaacaarya Haris'aastri Paraad'akar Vaidya, editor. Ashtanga Hr̥daya of Vāgbhāṭa (Sarvanga sundara, Arunadatta; Ayurveda Rasayana, Hemadri: comme, Sanskrit) Varanasi: Chaukhambha Surbharathi Prakashan; 2011; p.431. Nidana sthana, 15/7, 8.
8. Abhilash Krishnan V K, Laila A.S. Practices of asthapana and anuvasana vasti by ayurveda practitioners in kerala; [MD Dissertation] Thiruvananthapuram; 2018
9. Sasikumar. A Study on Low back ache and its Management with Vaitarana vasti [MD Dissertation]. Thiruvananthapuram: Kerala Unversity; 1991.
10. Mousumi Manohar P A. Validation of samyak nirūha lakshana with respect to mādhutailika vasti in kaṭeegraha. [MD Dissertation]. Kottakkal, 2012. Dissertation
11. Krishnakumar N. Clinical study on the effect of ksheera Vaitharana vasti in the management of grdhrasi w.s.r to sciatica. Ancient Science of life, 2013; 34(s2): p.38.
12. Bhatt Malini R. A clinical study on the role of Erاندamūlādi Vasti in the management of Kateegraha [MD Dissertation]. Jamnagar: Gujarat Ayurveda University; 1997.
13. Nesari Manoj. The study on the role of Amr̥tha Bhallathaka and Rājayāpana vasti in the

- management of kateesula with reference to spinal degenerative disease [MD Dissertation]. Jamnagar: Gujarat Ayurveda University; 1991.
14. Aswani.P.S, A.S.Lila. Clinical evaluation of Vrshadi Vasti in Grdhrasi. *International Journal of Ayurveda and Pharma Research*, Oct 2017; 5(10): p:41.
 15. KP Damayanthie Fernando, Anup B Thakar, Vageesha Datta Shukla. Clinical efficacy of Eranda Muladi Yapana Basti in the management of Kati Graha (Lumbar spondylosis). *Ayu journal*, 2013; 34(1): p.36-41.
 16. Salma Shirin. Evaluation of efficacy of Kṣeera Vasti and Mātra vasti in Grdhrasi – A Comparative Clinical Trial [MD Dissertation]. Bangalore: Rajive Gandhi University of Health sciences; 2010.
 17. Pt. Bhisagacharya Harishastri Paradkar Vaidya, editor. Aṣṭāṅga Hṛdayam composed by Vāgbhaṭa with commentaries Sarvāṅgasundara and Āyurvedarasāyana. 6th ed. Varanasi: Chowkhamba Krishnadas Academy, 2006. Kalpasthana 4/20 p: 349. Edited Book
 18. Yadavji Trikamji Acaarya, editor. Caraka saṁhita by Agniveśa with the Aayurveda Deepika Comme. 5th ed. Varanasi: Chaukhamba Sanskrit Sansthan, 2001. Siddhistaana 12/50 p; 750 Edited Book.
 19. K.H.Krshnamoorthy, P.V.Sarma, editor. Bhela Samhitha, text with English translation, comme and critical notes. 2nd ed. Varanasi: Chaukhamba Sanskrit Sansthan, 2008. Sidhithana 8/65 p: 571 Edited book.
 20. Cheppad. K. Achutha warrier, editor. Chakradattam with Goodartha Deepika commentary of Chakrapanidatta, 27th edition, S.T. Reddiar and sons, Kollam, 2010 pg. 528.
 21. Bramhanand Tripathi editor. Sharangdhara Samhita of Sharangdhara, Chaukhamba Surbharti Prakashan, Varanasi, 2007 pg. 153
 22. Chougule Paresh, Rao Niranjan, Shreekanth U. Manjishthadi kshara basti in the management of peripheral arterial disease a case study. *International Ayurvedic Medical Journal*. 2015 September; 3(9):2935-2938
 23. Aswani P S et al. Vaitarana Vasti - A Conceptual Study. *Research Journal of Pharmacy and Technology*. 2018 March; 10 (1):56-58
 24. Vasudevan nmboodiri M.R, Mahadevan.L, Jayadeep.S. Principles and practices of Vasti. 1st ed. Kanyakumari: Sarada mahadeva Iyer ayurvedic educational and charitable trust. 2014. p 261
 25. Mohammed Imthiyas I, Manojkumar A K. A randomized clinical trial to assess the samyaksnidgha lakshana obtained by plain ghee against thikthaka ghrtha in psoriasis. (MD Dissertation) Kottakkal, 2012.
