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Research Article

Administration of Madhutailika Vasti in Aturahasta Pramana

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Abstract The Dose of a medicine plays an important role in the efficacy of a drug or procedure. It is one among the factors which produces optimum effect of *Niruha vasti*. The dose of *Niruha Vasti* can be measured with *Aturahasta* (patient's own hands). *Madhutailika Vasti* is a commonly practiced *Niruha Vasti* in *Kateegraha*, the effect of which in *Aturahasta Pramana* is so far not studied. Objective of this paper is to study safety and efficacy of *Madhutailika Vasti* administered with *Aturahasta Pramana* in *Kateegraha*. 20 participants satisfying eligibility criteria were selected, *Yogavasti* done under which *Madhutailika Vasti* was administered in *Aturahasta Pramana* up to *Samyak Niruha Lakshana*. 90% of participants required more than one *Putaka* on the first *Niruha* day to obtain *Samyak Niruha Lakshana*, which decreased in subsequent days. There was significant reduction in Visual Analogue Scale ($P<0.001$) and Oswestry disability Index showed statistically significant improvement ($P<0.001$). No significant change was noticed in blood parameters except ESR, which showed a significant reduction ($P<0.05$). The study concluded that *Madhutailika Vasti* administered in *Aturahasta Pramana* is effective in producing *Samyak Niruha Lakshana* in *Kateegraha* and is safe and effective in *Kateegraha*.
Keywords *Aturahasta Pramana; Kateegraha; Madhutailika Vasti*

1. Introduction

Among *Panchakarma* procedures *Vasti* is considered as the supreme therapeutic modality as it radically weed out the morbid *Vata* which is responsible for the pathogenesis of various diseases and movement of all *Dosha, Dhatu* and *Mala* within the body. In *Vasti,* even though *Niruha* and *Anuvasana* are considered as a single unit, *Niruha* plays a major role when compared to *Anuvasana* due to its multi-drug combinations and hence it's utility in varied clinical conditions. It is explained that *Niruha vasti* should not be restricted to one *Vasti* in a single sitting, three or four *Niruha* can be done till the attainment of *Samyak Niruha Lakshana (SNL)* (Sreekumar, 2008). Studies also showed that more than one administration of *Vasti* in a single sitting has more impact on attainment of *SNL* (Mousumi, 2012). Even though it has been proved, it didn't come to practice as multiple administration of *Vasti* on the same day with the conventional dose give rise to complications frequently. It is explained that the *Prasrutha* measurement for *Vasti* should be calculated with *Aturahasta pramana* (AP) patient's own hands (Trikamji Acharya and Ram Acharya, 1997). The amount of *Vasti* taken with *AP* is comparatively lesser hence it is more patient friendly.

Kateegraha indicates a diseased condition of the low back associated with pain and stiffness (Sankara Misra, 2010). Even though it is not mentioned as a separate disease in *Bruhatrayee*, related features are found in *Pakvasayagata Vatakopa Lakshana* (Harisastri Paradakara Vaidya, 2011). As it is related to an aggravation of *Vata* especially in its primary site, *Vasti* has got more significance in the management.

Here, an attempt has been made to conduct a study on the safety and efficacy of *Madhutailika vasti* administered with *AP* in *Kateegraha*.

2. Materials and Methods

2.1. Calculation of *Prasruta* by *Aturahasta Pramana*

100 participants ranging from 20-60 years were selected. Each one directed to keep the palm of one hand stretched out and hollowed as it to hold liquid. The mixture of *Madhutailika vasti* poured into it and measurement of handful of mixture was taken. The procedure repeated for three times for each participants and average of three consecutive measurements were consider as participant's *AP*. Measurements of 100 participants were taken and average calculated as 26 ml. Thus, dose of *Prasruta* by *AP* has been fixed as 26 ml.

2.2. Subjects

20 patients with *Kateegraha* participated in an open clinical trial approved by the Institutional Ethics Committee of Vaidyaratnam P. S. Varier Ayurveda College Kottakkal (IEC/CL/16/13 dated 22-04-2013). Informed consent was obtained from each patient prior to the inclusion in the study. Patients were free to withdraw their name from the study at any time without giving any reason.

The diagnostic criteria consisted of pain in low back region (*Kati Desha*) with a positive Genslen's test or Gillies test or Pump handle test or Schober's test (Das, 2004). The patients attending the IPD of VPSV Ayurveda College Kottakkal aged 20-60 years of either gender or who are fit for Niruha were included in the study. Exclusion criteria denied the participation of subjects with Lumbar spondylolisthesis, Lumbar vertebral fracture, Malignancies, Tubercular spine, Cauda equina syndrome and other major systemic diseases.

Procedure

Vasti procedure was done as per Standard Operative procedure (SOP) (Manojkumar, 2012). On the day of *Niruha* after first *Putaka,* if no *Samyak Lakshana* observed, another administration was done, up to maximum four administrations. *SNL* was assessed with validated proforma (Mousumi, 2012).

2.3. Criteria for Assessment

Safety

- Event evaluation Scale - All the *Vasti ayoga*, *Atiyoga* and *Vyapada lakshana* mentioned in the texts was compiled to form an Event Evaluation Scale.
- Blood - Hb%, Total Count (TC), Differential Count (DC), Erythrocyte Sedimentation Rate (ESR), Fasting Blood Sugar (FBS)

Efficacy

- Visual analogue scale (VAS) for pain (Price et al., 1983)
- Tenderness (Glynn and Drake, 2012)
- Oswestry Disability Index (ODI) for back pain (Fairbank and Pynsent, 2000)

Table 1: *Details of intervention*

S. No	Procedure		Drug	Dose	Duration
1	Purva Karma	Abhyanga	Tila taila	Q.S.	15 mts
		Ushma Sweda			Till samyak swinnalakshana
2	Pradhana Karma	Anuvasana	Sahacharadi taila	100 ml	1st,3rd,5th,7th, 8th day
		Niruha	Makshika (Honey) Lavana(Rock salt) Tila taila(Sesame oil) Satapuspa kalka (Anethum sowa) Erandamula kwatha (Ricinus communis)	60 ml 12 gm 60 ml 24 gm 120 ml	2nd,4th, 6th day

Event evaluation scale was assessed on the day of N*iruha* i.e. on 2nd, 4th, 6th day. Blood parameters, VAS, Tenderness and ODI were assessed before treatment and after treatment i.e. on 0 and 9th day.

Data Analysis

The subjective parameters and laboratory parameters were tabulated and subjected to statistical analysis manually with the help of Microsoft Office Excel 2007. For analyzing effect of therapy, t-Test: paired two samples for means was used.

3. Observations and Statistical Analysis

Descriptive statistics for 20 subjects appear in Table 2. Given the shortness of the study period and the simplicity of the treatment, there was no drop out and no data were missing.

Table 2: *Demographic/clinical characteristics of research participants*

Variable	Number (N=20)	Percentage (%)
Age		
20-30	3	15
31-40	9	45
41-50	6	30
51-60	2	10
Sex		
Male	9	45
Female	11	55
Religion		
Hindu	9	45
Muslim	11	55
Marital status		
Unmarried	5	25

Married	15	75
Occupation		
Desk job	2	10
Manual	2	10
Home maker	9	45
Professional	0	0
Others	7	35
Mode of onset of pain		
Acute	8	40
Gradual	12	60
Severity of pain		
Severe	4	20
Moderate	15	75
Mild	1	05
Chronicity		
< 1 year	6	30
1-2 years	4	20
2-3	4	20
3-4	1	5
4-5	1	5
>5 years	4	20
Apanakopalakshana		
Present	14	70
Absent	6	30
Bhu desha		
Jangala Sadharana	14	70
Anupa Sadharana	6	30
Prakruti		
Vatakapha	10	50
Vatapitha	6	30
Pithakapha	4	20
Kosta		
Mrudu	4	20
Madhyama	9	45
Krura	7	35
Satva bala		
Heena	4	18
Madhyama	10	50
Pravara	6	32

3.1. Assessment of Safety

Event Evaluation Scale

The most observed symptoms in event evaluation scale during *Yogavasti* were *Kukshiruja* (abdominal pain) and *Adhmaana* (abdominal distention). On the first day of *Niruha, Kukshiruja* was noticed in 5% of participants after 1st *Putaka*, 11.11% after 2nd Putaka, 15.38% after 3rd *Putaka* and 16.66% after 4th *Putaka*. *Adhmaana* was observed in 50% of participants after 4th *Putaka*. Klama was noticed in 7.69% participants after 3rd *Putaka* and in 16.66% participants after 4th *Putaka*. *Kukshiashudhi* was observed in 16.66% participants after 4th *Putaka* on first day of *Niruha.*

On second day of *Niruha* after the 2nd *Putaka* in 11.76% participant and in 12.5% after 3rd *Putaka, Kukshiruja* was observed. *Adhmaana* was observed after 4th *Putaka* in 100% of participant as 4th *Putaka* was administered only in one participant.

On third day of *Niruha* after the 1st *Putaka* in 8.33% of participants, *Kukshiruja* was observed (Table 3).

Table 3: *Observation on Vasti ayoga, Atiyoga and Vyapata Lakshana among 20 participants*

Yogavasti	P	N	Kukshiruja		Adhmana		Klama		Kukshiashudhi	
			No	%	No	%	No	%	No	%
1st Nirooha	1st	20	1	5	-	-	-	-	-	-
	2nd	18	2	11.11	-	-	-	-	-	-
	3rd	13	2	15.38	-	-	1	7.69	-	-
	4th	6	1	16.66	3	50	1	16.66	1	16.66
2nd Nirooha	1st	20	-	-	-	-	-	-	-	-
	2nd	17	2	11.76	-	-	-	-	-	-
	3rd	8	1	12.5	-	-	-	-	-	-
	4th	1	-	-	1	100	-	-	-	-
3rd Nirooha	1st	20	-	-	-	-	-	-	-	-
	2nd	12	1	8.33	-	-	-	-	-	-
	3rd	2	-	-	-	-	-	-	-	-
	4th	0	-	-	-	-	-	-	-	-

3.2. Blood Parameters

No significant change was observed in blood parameters except ESR. The mean value of ESR before the treatment was 28.7 which decreased to 22.8 after treatment which was statistically significant at the level of $p<0.05$.

Effect of *Madhutailika Vasti* (Table 4)

Table 4: *Effect of Madhutailika vasti on VAS, Tenderness, ODI*

Parameters	BT	AT	MD	%	S.D	t-value	P value
VAS	6.25	3.25	3	48	0.6488	12.06	<0.001
Tenderness	1.35	0.55	0.8	59.25	0.4103	5.05	<0.001
ODI	40.32	27.17	13.144	32.61	3.509	6.03	<0.001

Effect on VAS

The mean VAS score before the treatment was 6.25 which reduced to 3.25 after the treatment, this decrease of 3 + 0.6488 after treatment was statistically significant at the level of 0.1% ($p<0.001$).

Effect on Tenderness

The mean tenderness score before the treatment was 1.35 which reduced to 0.55 after the treatment, this decrease of 0.8 + 0.4103 after treatment was statistically significant at the level of 0.1% ($p<0.001$).

Effect on ODI Scale

The mean ODI score before the treatment was 40.32 which reduced to 27.17 after the treatment, this decrease of 13.144 + 3.509 after treatment was statistically significant at the level of 0.1% ($p<0.001$).

Observation on Number of *Putaka* in *Yogavasti*

On the first day of N*iruha* a total 57 *Putaka* were needed, 46 *Putaka* needed on the second day and 34 P*utaka* on third day of N*iruha* for the achievement of *SNL*. In 20 participants, 137 administrations were required for the achievement of *SNL* (Table 5).

Table 5: *Observation on number of Putaka in each Niruha in Yogavasti*

Niruha	N	Putaka	Mean	SD	SE
1st	20	57	2.85	0.988	0.220
2nd	20	46	2.3	0.801	0.179
3rd	20	34	1.7	0.656	0.146

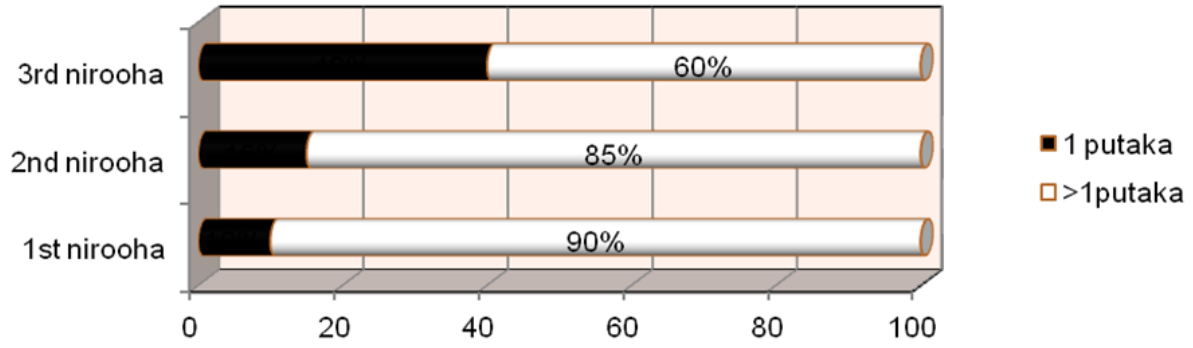

Figure 1: *20 participants according to number of Putaka in each Niruha*

Thus in 20 participants, total 137 *Putaka* (administrations) were done for the attainment of *SNL.* 90% of the participants required more than one administration on 1st N*iruha* day*,* 85% of participants required more than one administration on 2nd day and on the 3rd day of *Niruha* only 60% required more than one administration for the attainment of *SNL* (Figure 1).

Table 6: *Observation on Retention time in Yogavasti among 20 participants*

Yogavasti	1st Niruha				2nd Niruha				3rd Niruha			
Putaka	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
No. of Participants	20	18	13	6	20	17	8	1	20	12	2	-
Mean (Minutes)	1.77	2.11	2.48	2.79	2.13	2.42	2.87	4	2.43	2.91	4.25	-

Retention Time

The mean retention time showed a gradual increase with increase in number of *Putaka* (administrations) on all three days of N*iruha* (Table 6).

4. Discussion

In *Panchakarma* procedures dose is one of the important factor to attain optimum effect of the therapy. *Prasruta pramana* is the unit for the measurement of *Drava Dravya* used in *vasti*. Conventionally one *Prasruta* is equal to 2 *Pala.* But in the context of *Vasti*, it is explained that *Prasruta* should be taken as equal to hollowed palm of outstretched hand of the patient (Trikamji Acharya and Ram Acharya, 1997). *Maadhutailika Vasti* is a *Paadaheena vasti* i.e. total dose of *Vasti* will be 9 *Prasruta* (Ibid Chikitsa sthana 38/118). In this study *Madhutailika vasti* formulated from *AP* was only 240 ml which is approximately one fourth of routinely practiced dose (960ml) of *Madhutailika vasti*. By single administration of this dose, it is difficult to achieve *SNL* so multiple administration was planned. The method of multiple administrations on the same day will give rise to more expulsion of *Dosha* from *Pakvasaya* and hence number of *Putaka* needed for producing *SNL* gradually get reduced on second and third day of *Niruha*.

Event Evaluation Scale showed occurrence of only 4 complaints out of which *Kukshiruja* was predominant. The reason of *Kukshiruja* may be less amount of T*aila* in *Vasti* or irritating property of K*alka* or S*aindhava*. But this symptom was subsided just after passing *Vega* or intake of food. *Adhmaana* was observed in participants in whom four administrations was done. It may be due *Vataprakopa* or more M*ala Nirharana*. A decrease in ESR was observed after treatment, which was significant. No available study reports are there for supporting this data. Further studies should be conducted in this regard.

Retention time showed a gradual increase after each administration on all three days of *Niruha.* The prior sensitization of site of reach of *Vasti dravya* may be one of the reasons for the increase seen in the retention time (Mousumi, 2012). As per classics prolonged retention of *Niruha vasti* is not important because even if not retained for longer time it will produce *Sodhana* effect. No measures are mentioned to prolonged retention time of N*iruha* as told in *Anuvasana* (Trikamji Acharya, 1992).

Kateegraha is mentioned as a symptom of Pakvasayagata Vata Kopa (Harisastri Paradakara Vaidya, 2011). Due to repeated administration of *Vasti,* effect of medicine may be more pronounced, as there is more contact time for the medicine with the colonic mucosa which leads to V*atanulomata* in *Koshta* and ultimately reduction in pain. From *Ayurvedic* perspective, tenderness denotes the association of other D*osha* with V*ata*. Extreme degrees of tenderness are explained in *Amvaata* (Tripathi, 2005), *Sula* (Trikamji Acharya, 1992), *Vatarakta* (Ibid Chikitsa sthaana 29/14), etc where *Vata* is associated or encircled by *Kapha* or *Pitta.* As *Vasti* produces expulsion of *Kapha* and *Pitta* it results in reduction of tenderness.

Vasti has effect in both promotive and curative aspect. In promotive aspect, it stabililizes the age, improve strength, brings quality in life etc (Ibid Siddhi sthaana 1/27). In curative aspect, it relieves stiffness, contractions, aggravated *Vata* in *Sakha* and *Koshta* etc (Ibid Siddhi sthaana 1/32-33). This may be the reason for reduction in ODI for low back pain. Multiple administrations with routinely practiced dose i.e. 960ml take about 2 to 3 hours to complete the procedure (Mousumi, 2012). In the present study multiple administration of V*asti* with *AP* dose takes only 1 to 1 ½ hour for complete procedure. The probable reason was after each administration number of *Vega* and K*lama* symptoms was less. So there was no need for giving more time gap for next administration. Maximum time gap between two V*asti* was 15 to 20 minutes.

Limitations of this study include absence of a control group, the inclusion of which may help to provide precise conclusions to the study and several biases can be avoided. Still the results of the study can be viewed as a preliminary support to practice *Niruha* with a lesser but safer and effective

dose, which is helpful to the clinicians especially for those who prefer OP, based *Panchakarma* practices.

5. Conclusion

It is concluded that *Madhutailika* vasti administered in *AP* is effective in producing *SNL*, safe and effective in reducing pain on VAS scale, tenderness and ODI score in *Kateegraha.*

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