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A COMPARATIVE CLINICAL EVALUATION OF MATRAVASTI AND YAPANAVASTI WITH VRSAMULADITAILA IN THE MANAGEMENT OF GRDHRASIVATA

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ABSTRACT

Aim: A comparative clinical evaluation of *Mātrāvasti* and *Yāpanavasti* with *Vṛṣamūlāditaila* in the management of *Gṛdhrasīvāta*. Objectives: To evaluate the efficacy of *Mātrāvasti and Yāpanavasti and compare their efficacy* with *Vṛṣamūlāditaila* in the management of *Gṛdhrasī vāta.* Materials and Methods: A comparative clinical study conducted with pre test and post test design where 40 patients suffering from sciatica were selected and randomly allocated in to two groups (Group A and Group B) after initial screeing. The patients of Group A Subjected to administer *Mātrāvasti* with *Vṛṣamūlāditaila* and Group B Subjected to administer *Yāpanavasti* with *Vṛṣamūlāditaila* for 16 days. Patients were observed for a total follow-up period of 30 days with three stages of assessment on 0^{th}, 17^{th} and 47^{th} day. The assessment results were made by adopting the standard methods of international scoring which include pain, neurological deficit, functional ability, functional disability and also selective signs and symptoms. Statistical significant test for comparison was done by Student paired t-test followed by Student unpaired t-test for comparing the two groups. **Results:** Group A: The efficacy of the treatment in Group A, and Group B was assessed with Paired t test- showed a extremely significant results with a p value< 0.0001. **Comparative study:** on comparing the efficacy of treatments through Unpaired t test, between the two groups, Group B is considered to show more efficacy in the management of *Gṛdhrasī,* because the mean difference of Group B is greater than that of Group A. **Conclusion:** *Yāpanavasti* has showed better improvement than *Mātrāvasti in the management of GṛdhrasīVāta.*

KEYWORDS: *Vasti, Vṛṣamūlāditaila, Mātrāvasti, Yāpanavasti, GṛdhrasīVāta.*

INTRODUCTION

Health is indeed a fundamental human right, essential for living a dignified and fulfilling life. Low back pain is one of the commonest medical problems. It is one of the top ten reasons patients seek care from a family physician. In epidemiological studies of different populations, the prevalence of Sciatica symptoms reported, varies from 1.6% in the general population to 43% in a selected working population.[1] The disease sciatica can be understood in Ayurvedic persoective as gridrasi vata.

Gṛdhrasī is a *Vātavyādhi* characterized by *Stambha* (stiffness), *Ruk* (pain), *Toda*(pricking pain), *Graha* (tightness) and *Spandana* (frequent twitching). These symptoms initially affect *Sphik* (buttock) as well as posterior aspect of *Kaṭi* (waist) and then gradually radiates to posterior aspects of *Ūru* (thigh), *Jānu* (knee), *Jaṅghā* (calf) and *Pāda* (foot).[2] These are cardinal symptoms of *Vātaja Gṛdhrasī*. In *Vāta-Kaphaja* type of *Gṛdhrasī* in addition to the above symptoms, *Tandrā* (Drowsiness), *Gaurava* (Heaviness) and *Aruci* (Anorexia) are also present. *Ācārya Suśruta* says that when the *Kaṇḍarā* i.e. ligament of heel and all the toes are afflicted by vitiated *Vāta*, causes *Sakthnot kṣepaṃ nigṛḥniyāt*[3], that means restricted movements of lower extremities is the main symptom of *Gṛdhrasī*. Same symptom given by *Ācārya Vāgbhaṭa* also. The particular causative factors of *Gṛdhrasī* are not mentioned in the classics. The general causes of *Vātavyādhi* are considered as the causes of *Gṛdhrasī*.

MATERIALS AND METHODS

❖ Ethical clearance

The topic of study along with the case proforma was presented before the Institutional Ethics Committee of S.V. Ayurveda College, Tirupati. Ethical consideration was taken into account with IEC Reg. No. **IEC/SVAYC/PK/22/14**, approved on 02/12/2022 and consent of IEC is attached. The trial was registered in Clinical Trials Registry – India managed by the National Institute of Medical Statistics and ICMR, with CTRI number **CTRI/2023/10/058266**, registered on 04/10/2023.

MATERIALS

- **For *Mātrā vasti***

S.No	Ingredient	Quantity
1	*Vṛṣamūlāditaila*	60ml
2	*Śatapuṣpa*	3gms
3	*Saindhavalavanam*	3gms

- **For *Yāpanavasti***

S.No	Ingredient	Quantity
1	*Madhu*	50gms
2	*Saindhavalavanam*	6gms
3	*Vṛṣamūlādi tailam*	60ml
4	*Vṛṣamūlādi Kalkam*	25gms
5	*Vṛṣamūlādi kvātham*	320ml

Table no. 1: The drugs used for *Kalka* and *Kvātha* are.

Vṛṣa (vāsa)	Adathoda vasica Linn	Acanthacea
Guḍūcī	Tinospora cardifolia Willd	Menispermacea
Chitraka	Plumago zyelanica Linn	Plumbaginacea
Aswagandha	Withania somnifera.	Solanaceae

Methods

Source of Data

The patients who have attended the OPD and IPD of the *Pañcakarma* department of S.V. Ayurvedic Hospital, Tirupati between 20 to 60 years of age having the complaints of low back pain radiating to one or both the lower limbs, are screened. Totally 40 patients are randomly allocated into 2 groups, each group having 20 patients.

- **GROUP A:** Subjected to administer ***Mātrāvasti*** with ***Vṛṣamūlāditaila***[4]
- **GROUP B:** Subjected to administer ***Yāpanavasti*** with ***Vṛṣamūlāditaila***

Clinical plan

Phase 1

1. 40 patients from the IPD of the department of *pañchakarma,* S.V. Ayurvedic College and Hospital, Tirupati, were selected randomly and registered into two groups irrespective of sex, caste, and religion.
2. Detailed history-taking and physical examinations were carried out on these patients. Relevant data along with the elaborate assessment of pain, neurological deficit, and functional ability are assessed based on the subjective and objective parameters

3. The patients presenting with the symptoms of *Gṛdhrasī Vāta* will be registered based on the criteria mentioned below
4. Among them, 20 patients in each group fulfilling the inclusion and exclusion criteria are taken.

INCLUSION CRITERIA

1. Age between 20-60years.
2. Low backache radiating to the lowerlimb.
3. Patients presenting with the *lakṣaṇas* of *Gṛdhrasī Vāta.*"
4. Patients eligible for *vasti.*

EXCLUSION CRITERIA

1. Patients with age below 20 years and above 60 years.
2. Patients with uncontrolled DM & HTN.
3. Patients with Potts's spine.
4. Patients with Malignancies of Spine or Spinal cord.
5. Patients who underwent Spinal surgeries.
6. Patients associated with severe systemic illnesses.
7. Patients who are using medications for Psychiatric disorders.
8. Those who don't fit in to inclusion criteria.

INVESTIGATIONS

- Haemogram.
- Plain X- Ray of Lumbosacral Spine AP and Lateralview.
- CT / MRI of Lumbo-sacral spine were carried out before treatment to exclude other Malignancy.

Phase 2

- Functional evaluation of the condition of patient by using objective and subjective parameters, Before starting treatment.
- Totally 40 patients are randomly allocated in to 2 groups with 20 patients in each group.

Phase 3

- **GROUP A:** 20 patients are Subjected to *Mātravasti with Vṛṣamūladitaila*
- **GROUP B:** 20 patients are Subjected to *Yāpanavasti with Vṛṣamūladitaila*

Phase 4

Recording of Subjective & Objective Parameters, After completion of treatment i.e. on 17th day.

Phase 5

Recording of Subjective & Objective Parameters after 1 month of the completion of treatment i.e. on 47th day.

Sample size: 40 (Group A -20, Group B – 20)

Study design: Comparative clinical study

Assessment Criteria

Assessment was done three times i.e. initially before undergoing medical intervention, immediately after treatment and 1month of treatment.

Objective parameters

1. Angle of Straight Leg Raising Test:
2. Aberdeen low back pain disability scale[5]
3. Roland Morris disability questionnaire[6]
4. Walking time average:

Subjective parameters

Classical *Āyurvēdic* evaluation criteria specially developed for *Gṛdhrasī:*

This evaluation criteria is developed by grading the classical symptoms of *Gṛdhrasī* based on their severity. Symptoms Score ranges from 0 to 4.

- *Stambha (*stiffness)
- *Ruk* (pain)
- *Toda* (pricking sensation)
- *Spandana* (twitching)
- *Gaurava* (heaviness)
- *Aruchi* (anorexia)
- *Tandrā* (drowsiness)

Statistical Analysis: Statistical significance test for comparison was done by Paired and unpaired t Test. Graph Pad Prism software was used for Statistical Analysis.

OBSERVATION

Age (in Years)	Group-A No. of patients	Group-B No. of patients	Total No. of patient	%
31 – 40	5	4	9	22.50%
41 – 50	7	8	15	37.50%
51 – 60	8	8	16	40%
Gender				
Male	6	8	14	35%
Female	14	12	26	65%
Marital status				
Married	19	20	39	97.5
Un Married	1	0	1	2.5
Nature of work				
Sedentary	1	0	1	3%
Moderate	6	8	14	35%
Strenuous	13	12	25	63%
Total Duration of Illness				
6month or Less	6	4	10	25%
>6month to 1 Year	7	6	13	32.50%
> 1 year to 2 years	6	5	11	27.50%
> 2years to 3years	1	2	3	7.50%
>3 years	0	3	3	7.50%
Number of affected lower limbs				
Single	2	7	9	22.50%
Both	18	13	31	77.50%

RESULTS

Table no. 2: Overall score of group A and group B.

S.No	Parameters	Mean Score GroupA			%of improvement (BT-AT/BT-AF)	Mean Score GroupB			%of improvement (BT-AT/BT-AF)
S.No	**Parameters**	**BT**	**AT**	**AF**		**BT**	**AT**	**AF**	
1	SLRT	2.000	0.20	0.40	90/80	1.40	0.20	0.15	86/89
2	RMDQ	16.30	8.00	9.95	50.9/38	16.60	6.90	6.90	58/57.5
3	ALBPS	43	17.75	20.3	58/52	43.85	17.90	17.30	59.17/60
4	Walk.time	15.5	13.2	13.7	14.5/14	13.94	11.47	11.34	17/18.65
5	*Ruk*	3.9	1.35	2.25	65/42	3.95	0.40	1.45	89/63.29
6	*Toda*	3.15	0.95	0.65	69.8/79	3.70	0.45	0.70	87/81
7	*Stamba*	2.00	0.60	0.90	70/55	2.30	0.30	0.40	86/82.6
8	*Aruchi*	0.35	0.05	0.05	85.7/85	0.60	0.00	0.10	40/83.3
9	*Gaurava*	1.55	0.20	0.55	87/64	2.00	0.45	1.05	77/47.5
10	*Tandra*	0.50	0.10	0.15	80/70	0.8	0.1	0.10	87/87.5
11	*Spandana*	0.20	0.05	0.15	75/25	0.65	0.15	0.10	76.9/84.6

Table no. 3: Comparing the overall result between Group A and Group B before treatment and after treatment i.e., 0th day and 17thday through Unpaired t-test.

S.NO	Parameter	Group A (Mean±S.D) BT-AT	Group B (Mean±S.D) BT-AT	S.E.D	T value	P value	Inference
1	SLR	1.800±0.6800	1.200±0.5300	0.193	3.1123	=0.0035	V.S.sig
2	RMDQ	8.300± 0.37	9.700±1.74	0.398	3.5196	<0.0011	VeryS.S
3	ALBPS	25.25±1.85	25.95±1.25	0.499	1.4021	=0.1690	N.S
4	Walk.time	2.25±0.074	2.46±1.889	0.423	0.5086	<0.6140	N.S
5	Ruk	2.55±0.59	3.55±0.72	0.208	4.8043	<0.0001	E.S
6	Toda	2.2±0.59	3.35±0.08	0.133	7.8867	<0.0001	E.S
7	Stamba	1.4±0.84	2.00±1.4	0.365	1.6435	=0.1085	N.S
8	Aruchi	0.30±0.45	0.60±0.94	0.233	1.2874	=0.2058	N.S
9	Gaurava	1.35±1.06	1.55±0.99	0.324	0.6167	<0.5411	N.S
10	Tandra	0.4±0.52	0.7±0.61	0.179	1.6738	<0.1024	N.S
11	spandana	0.15±0.19	0.50±0.56	0.132	2.6469	<0.0118	S.S

Table no. 4: Comparing the overall result between Group A and Group B before treatment and after follow-up i.e., 0th day and 47th day through Unpaired t-test.

S.NO	Parameter	Group A (Mean±S.D) BT-AF	Group B (Mean±S.D) BT-AF	S.E.D	T value	P value	Inference
1	SLR	1.60±0.55	1.250±0.560	0.176	1.9941	=0.0533	N.S.S
2	RMDQ	6.35±9.95	9.55±1.73	2.259	1.4163	=0.1648	NS
3	ALBPS	22.7±1.14	26.55±0.82	0.314	12.2609	<0.0001	E.S
4	Walk.time	2.275±0.848	2.600±1.989	0.483	0.6722	<0.5055	N.S
5	Ruk	1.65±0.52	2.50±0.61	0.179	4.7424	<0.0001	E.S
6	Toda	2.50±0.71	3.0±0.06	0.159	3.1382	<0.0036	V.S.S
7	Stamba	1.10±0.68	1.90±1.12	0.293	2.7305	<0.0095	V.S.S
8	Aruchi	0.30±0.45	0.50±0.09	0.103	1.9490	<0.0587	Q.S.S
9	Gaurava	1.00±0.71	0.95±0.65	0.215	0.2323	=0.8176	NS
10	Tandra	0.35±0.46	0.70±0.61	0.171	2.0487	<0.0474	S.S
11	spandana	0.05±0.04	0.55±0.62	0.139	3.5991	<0.0009	E.S

Group A: The efficacy of the treatment in Group A, is assessed with Paired t test- showed a statistically significant results with a p value< 0.0001.

Group B: The efficacy ot the treatment in Group B, is assessed with Paired t test- showed a statistically significant results with a p value< 0.0001.

Comparative study: on comparing the efficacy of treatments through Unpaired t test, there is statistically significant difference between the two groups.

And between the two groups Group B is considered to show more efficacy in the

management of *Gṛdhrasī* on analysing the results obtained through unpaired t- test.

Unpaired t-test of Group A and Group B before treatment and immediately after treatment (0^{th} day – 17^{th} day)

There is statistically significant difference between two groups in the below mentioned parameters

Objective Parameters

1. Straight Leg Raising Test
2. Roland Moris Disability Questionnair

Subjective parameters

1. *Ruk*
2. *Toda*
3. *Spandana*

In the remaining parameters there is no difference between two groups statistically.

Unpaired t-test of Group A and Group B immediately after treatment and after follow up (0^{th} day – 47^{th} day)

There is significant difference between two groups in the below mentioned parameters objective parameters - Aberdeen Low Back Pain Scale.

Subjective Parameters

1. Ruk
2. Toda
3. Stamba
4. Aruchi
5. Tandra
6. Spandana

Observing statistically significant parameters, which showed the difference between the two groups, Group B is showing more efficacy than Group A in the management of Gridrasi because the mean difference of Group B is greater than that of Group A.

DISCUSSION

Discussion on the Disease

In the present study, only the cases of Degenerative disc disease, Disc Herniation including Disc bulge, Disc prolapse, Disc extrusion, & cases of Spondylolisthesis causing Sciatica are taken. Despite the advancements in contemporary medicine, it has its inherent limitations in providing an effective and safe remedy for Sciatica. The mainstay of treatment in Contemporary medicine is the use of NSAIDs, or use of Epidural steroid injection, or ultimately Surgical intervention. Thus it is needed to find a safe, easier, less complicated, and fruitful approach to the management of *Gṛdhrasī Vāta*. In *Āyurveda* a vivid range of therapies have been mentioned for the management of *Gṛidhrasī* **vāta**.

Discussion on Vasti Dravya

In *Charaka Samhita Chikitsa Stāna* 28th chapter i.e *Vātavyādhi chikitsādhyāya, Vṛṣamūlāditaila* is mentioned to be used in '*Sarva Vātavikāra*' which can be administered for *Pāna, Abhyanga, Nasya*, and *Vasti*. This yoga has the unique distinction of being highlighted in the disorders of excruciating pain with either breaking or crushing nature. Thus in the present study, dealing with *Gṛdhrasī vāta* which is a pain predominant disease this *yoga* has been tried for *Mātrā vasti* and *Yāpana vasti*. *Yāpana vasti dravya* should be *Mṛdu and* must be lesser in quantity, for imparting *mṛdutva, ksheera is used as Āvāpa dravya. Vāsamūla* has *Kaphapittahara*, *Rasāyana* (su.chi.28-18), and *Śothahara* property, (Ca.Ci.12/67) *Cakradatta*(39/20) and *Vṛndamādava*(39/16). *Guduchimūla* is *tridoṣa śāmaka*, and having *Rasāyana* property.

C*hitraka mūla* is *Vāta kapha hara* and *Aswaganda* is *Śukrala, Vātakaphahara, Balya, Rasāyana*.

The four ingredients are having *Vāta kaphahara* property in common. *Vāsa, Guduchimūla* and *Aswaganda* are having *Rasāyana* property in common. In the *Samprāpti* of *Gṛdhrasī*, *Dāthu kṣaya* and *Mārgāvarodha* are the important factors. As in the disease sciatica, there will be degeneration of disc/discs, the *Rasāyana* effect of the above stated combination will be helpful to arrest the progression of the disease. Most of the ingredients i.e., 3 drugs out of four are *Tikta rasa pradhāna*.

The vasti prepare of *Tikta dravya* helps in *Asthi gata vyādi*. one of the major causes for sciatica is the degeneration of intervertebral disc, which can be compared with *mṛdulasthi*,

the *Tikta rasa Pradhāna Vṛṣamūlādi yoga* administered in the format of *Vasti*, effectively would serve this purpose.

- Discussion on treatment: Abhyaṅga:
- Caraka said that tvak is one of the main seats for vāta.
- As per Āyurveda skin is the seat for sparśanendriya (tactilesensation), predominantly having Vāyu mahābhūta. Hence abhyaṅga is beneficial for vāta vikāras.[7]
- In modern perspective, Skin is told as the largest organ of the body, and accounts for 15% of total body weight. It not only stimūlates the sensory nerve fibres of the skin, but also causes vasodilatation which increases the blood flow and helps in reducing the inflammation.
- *Swedana: Swedakarma* reduces the pain, stiffness and heaviness. *(ca.ci.17/71)*
- There are many types of *Vasti* but the present clinical study focuses to compare the therapeutic efficacy of *Mātra vasti* and *Yāpana vasti* in the management of *Gṛdhrasī.* Here the drug is same for both the *vastis.*
- *Mātravasti* and *Yāpanavasti* were chosen in the present clinical study with the following views:

1. In the present scenario, patients were unable to follow a diet regimen. For *Mātra vasti* and *Yāpana vasti*, there is no need to follow a rigid diet regimen.
2. 2. Both procedures i.e., *Mātra vasti* and *Yāpana vasti* can be administered to all ages.
3. Both procedures can be administered in all seasons and in any climatic condition.
4. Out of the five *Pañcakarma* therapies, *Vasti* is considered the most important procedure as it is the main *Śodhana cikitsā* for *Vāta* and also due to its multiple utilities.
5. *Snehaabhyanga, Svēdana* and *Mṛdu śōdhana* are the lines of treatment in all *Vātavyādhi.* As *Mṛdu śōdhana* is indicated, *Mātra vasti* and *Yāpana vasti* which are *Mṛdu* or mild form of *vasti* were selected.
6. *Vasti* not only has Curative aspects but also has Preventive, Promotive, & Rejuvenative actions.
7. *Vasti* therapy is therefore preferred as a line of treatment as it eradicates the root cause of the disease.
8. *Mātra vasti* is having *vātahara* and *Bṛmhaṇa* property.
9. *Yāpana vasti* has dual action of *Śōdhana* and *Snēhana* hence it performs *Sroto śodhana* and *Bṛmhaṇa* at a time.

CONCLUSION

Group A: The efficacy of the treatment in Group A, is assessed with Paired t test- showed a statistically significant results with a p value< 0.0001.

Group B: The efficacy ot the treatment in Group B, is assessed with Paired t test- showed a statistically significant results with a p value< 0.0001.

Unpaired t-test of Group A and Group B before treatment and immediately after treatment (0^{th} day – 17^{th} day)

There is statistically significant difference between two groups in the below mentioned parameters

Objective parameters – 1.Roland Moris Disability Questionnair

Subjective parameters –1. *Ruk*

2. *Toda*

3. *spandana*

In the remaining parameters there is no difference between two groups statistically.

Unpaired t-test of Group A and Group B immediately after treatment and after follow up (0^{th} day – 47^{th} day)

there is significant difference between two groups in the below mentioned parameters

Objective parameters - Aberdeen Low Back Pain Scale.

Subjective parameters

1. *Ruk*
2. *Toda*
3. *Stamba*
4. *Aruchi*
5. *Tandra*
6. *Spandana*

Observing statistically significant parameters, which showed the difference between the two groups, in major clinical parameters, Group B is showing more efficacy than Group A because the mean difference of Group B is greater than that of Group A, When Group A & Group B are compared in terms of relief in different clinical parameters related to *Gṛdhrasī.*

Group A is showing more improvement on

Objective parameters :	Subjective parameters
straight leg raising test	Ruk
	Gaurava

Group B is showing more improvement on

Objective parameters:	Subjective parameters:
	Toda
Roland moris disability questionnaire	*Stamba*
Aberdeen low back pain scale	*Aruchi*
Walking time	*Tandra*
	Spandana

Hence null hypothesis is rejected and alternate hypothesis accepted

Suggestions for further study

As the study sample is small, it may be replicated in larger groups with longer follow up for the better understanding of therapeutic affinities of *Mātra vasti* and *Yāpana vasti*. Both the formats of *Mātra vasti* and *Yāpana vasti* may be planned with prior *Śodhana* treatments like *Vamana* and *Virechana* for yielding better therapeutic results.

Sciatica is present in many different pathological conditions as a symptom. So, a specific pathological condition predisposing to Sciatica may be taken for the further studies and the exact effect of the treatment could be assessed on that particular condition.

It is the humble expectation that the observations and the results presented through this study would widen the scope for further research and advancement in this field of Ayurvedic medicine.

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