

Clinical Research

Effect of *Mahayavanala Roma Kshara* and *Dhanyaka Gokshura Ghrita* in benign prostatic hyperplasiaYogesh R. Vasava, Chaturbhuja Bhuyan, Manjusha Rajagopala¹, S. K. Gupta, T. S. DudhamalDepartments of Shalya Tantra, ¹Shalakya Tantra, Institute for Post-Graduate Teaching and Research in Ayurveda, Gujarat Ayurved University, Jamnagar, Gujarat, India.

Access this article online

Website: www.ayujournal.org

DOI: 10.4103/0974-8520.77168

Quick Response Code:



Abstract

Vatatheela is a disease of *Mutravahasrotasa*, one among the 12 types of *Mutraghata* disorders elaborated by Sushruta in his seminal work, the Sushruta Samhita. *Vatatheela*, as described in Ayurveda, closely resembles benign prostatic hyperplasia (BPH) of modern medicine in its signs and symptoms. It is a senile disorder and chiefly affects individuals above the age of 40 years. The symptoms are those of bladder outflow obstruction, with increased frequency of micturition, dribbling, hesitancy, and the features of chronic urinary retention. Surgical management has been accepted as the standard management but is associated with many disadvantages as well as complications, which may not be acceptable at this age. Conservative management with modern medicines is also not free from side effects. So, in this age-group, there is a need for much safer alternative method of management. In this regard, many works have been carried out and shown that the Ayurvedic approach, using natural medicines, is a far better approach. We carried out a comparative study of *Mahayavanala Roma Kshara* (MRK) and *Dhanyaka Gokshura Ghrita* (DGG), which are the compounds prescribed for *Mutraghata* in Ayurvedic literature. The patients were randomly selected from the OPD and IPD of IPGT and RA hospital, Jamnagar, Gujarat, and divided into two groups. In first group, one (500 mg) capsule of MRK was given twice a day with lukewarm water for 45 days; in second group, 10 gm of DGG was given orally twice a day with lukewarm water for 45 days. DGG showed significantly greater relief in the subjective parameters as per International Prostate Symptoms Score (IPSS) than MRK. However, reduction in the size of the prostate and in the volume of the post-void residual urine was found much better in the MRK group.

Key words: Benign prostatic hyperplasia, *Dhanyaka Gokshura Ghrita*, *Kshara*, *Mahayavanala Roma Mutraghata*, *Mutravahasrotasa*, *Vatatheela*

Introduction

The Sushruta Samhita, one of the prime texts among *Brihatrayee*, describes 12 types of *Mutraghata*.^[1] *Vatatheela*^[2] is one of them and, in its signs and symptoms as well as in anatomical considerations, it bears a close resemblance to benign prostatic hyperplasia (BPH).

BPH is a nonmalignant enlargement of the prostate gland caused by excessive growth of prostatic tissue and is the most common benign neoplasm of aging men.^[3] It affects mainly those individuals over the age of 40 years. In modern

medicine the management of BPH is either through a surgical approach (e.g., open prostatectomy, transurethral resection of prostate, cryotherapy, etc.) or by conservative treatment using drugs (e.g., chemotherapy, hormonal therapy, etc.). Among the many approaches, prostatectomy is the best, but it is associated with many problems and complications, e.g., postoperative morbidity, impotence, retrograde ejaculation, etc. The second most acceptable procedure is TURP which is also not free from complications, with the cumulative probability of re-operation estimated to be around 15% at 5–8 years after TURP.^[4] In case of hormonal therapy, although there are some advantages, there are many complications like loss of libido, impotence, gynecomastia, etc. Generally, the conservative treatments mentioned above have to be continued indefinitely and, therefore, treatment can be expensive. The surgical approach has provided a great deal of relief for many people but, as mentioned earlier, there are many associated problems.

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In this situation, it is possible that Ayurveda will be able to provide a treatment that is natural and free from any adverse effects. Acharya Sushruta has mentioned successful treatment of *Mutraghata* with *Kasaya*, *Kalka*, *Ghruta*, *Kshara*, etc. preparations of different drugs.^[5] This research work was carried out with the ultimate aim of finding the best treatment available in Ayurveda for BPH.

Aims and Objectives

To compare the effects of *Mahayavanala Roma Kshara* and *Dhanyaka Gokshura Ghrita* in the management of *Vatastheela*, with special reference to BPH.

Materials and Methods

Selection of patients

Total 15 male patients having signs and symptoms of *Vatastheela* / BPH, were selected randomly from those attending the OPD and IPD of IPGT and RA Hospital, Jamnagar, Gujarat, irrespective of religion, occupation, caste, etc.

Inclusion criteria

- Male patients in the age range of 40–70 years
- Patients having signs and symptoms of *Vatastheela* / BPH

Exclusion criteria

- Patients below 40 years and above the 70 years of age
- Patients having systemic diseases like tuberculosis, hypertension, renal failure, diabetes mellitus, urinary calculi, and carcinoma prostate

Diagnostic criteria

Diagnosis was based on the clinical signs and symptoms of the disease, which was collected using a specially prepared proforma. We used subjective parameters based on International Prostate Symptoms Score and objective parameters (e.g., size of the gland, residual urine volume, etc.) for diagnosis.

Drugs tested

1. *Mahayavanala Roma Kshara*: *Mahayavanala Roma* was obtained from *Zea mays* and the *Kshara* was prepared by the standard method described in Sushruta Samhita.
2. *Dhanyaka Gokshura Ghrita*: *Dhanyaka* (*Coriandrum Sativum*)^[6] and *Gokshura* (*Tribulus terrestris*)^[7] were the two ingredients of this *Ghruta*; it was prepared as per the standard guidelines given by Bhaishajya Ratnawali.

Clinical study design

The patients were divided into two groups and treated as per the schedule given below:

Group A: MRK^[8] capsules, 500 mg BD orally with lukewarm water before meals, for 45 days.

Group B: DGG^[9] 10 gm BD orally with lukewarm water before meals, for 45 days.

Assessment criteria

Subjective criteria:

- a) Improvement in the symptoms of the disease was assessed using the International Prostate Symptom Score sheet (of the American Urologists Association).

Objective criteria

- a) Assessment of residual urine volume
- b) Assessment of urine flow rate
- c) Prostatic size as assessed by per rectal digital examination and ultrasonographic study
- d) Laboratory investigations

Overall assessment criteria

- | | | |
|-------------------------|---|--------|
| a) No improvement | - | 00-25% |
| b) Mild Improvement | - | 26-50% |
| c) Moderate Improvement | - | 51-75% |
| d) Marked Improvement | - | 76-99% |
| e) Complete remission | - | 100% |

Observations and Results

The general observations are shown in Table 1-3. The effect of therapy on various parameters is shown in Table 4 -14.

Discussion

The disease *Vatastheela*, one of the 13 *Mutraghata* disorders, can be correlated with BPH on the basis of its *Sthana* (place), which is between *Guda* and *Basti*, and also on the basis of the correspondence of the symptoms and signs. Most of the features of *Vatastheela* described by Sushruta, such as retention of urine (*Mutrasanga*), pain in suprapubic region, etc., are similar to the symptoms of BPH. To make it more scientific for treatment as well as assessment point of views certain features like age above 40 years, increased frequency of urine, nocturia, reduced urine flow rate, intermittency which are not described by Acharya Sushruta, are necessary.

Most of the patients in our study (75%) were from the age-group of 61–70 years, which is to be expected since BPH is a disease related to aging. Maximum individuals were of the Hindu religion, which is due to the predominance of Hindus in this area. Most of the patients reported agriculture as their occupation, which is not surprising in this rural region. Most of the patients had had symptoms for 1–2 years. One reason for this long duration is that patients often neglect to seek treatment in the early phase of disease; also, many patients may have tried other forms of treatment before seeking Ayurvedic treatment.

Vishamashana was found in the majority of the patients. *Ama* is the chief causative factor in the pathogenesis of *Vatastheela* as described by Charaka, and *Vishamashana* is responsible for *Ama* formation which leads to making the firm background for disease. Disturbed sleep was found in almost all the patients, which might be due to the increased frequency of micturition at night. Constipation was found in 91.66% of the patients, which might be due to faulty dietary habits such as *Vishamashana*. In group A, i.e., the *Mahayavanala Roma Kshara* group, highly significant relief was found in frequency of micturition, hesitancy, and dysuria, while significantly result was observed in the symptoms of urgency and nocturia. *Kshara* made from *Roma* of *Mahayavanala* contains properties like *Tridoshghna*, *Pachana*, *Vilayana*, and *Lekhana*^[10] and it is by the virtue of these *Gunas* that it causes decrease in prostate size and increase in urine flow rate. *Kshara* also has the capacity to change the pH of urine from acidic to alkaline and by virtue of this it helps

Table 1: General observations (n=15)

Observations	No. of patients (%)
Age (61–70 years)	75.00
Religion (Hindu)	95.83
Marital status (married)	100
Socioeconomic status (middle class)	62.5
Occupation (agriculture)	41.67
Diet habit (<i>Vishamasana</i>)	66.67
Types of diet (Vegetarian)	95.83
Addiction (tea)	58.33
Bowel habits (constipation)	91.66
Sleep pattern (disturbed sleep)	95.83
<i>Prakriti (Pitta Kaphaja)</i>	50
Chronicity (1–2 years)	41.67
<i>Aharashakti (Madhyama)</i>	100
<i>Jarana Shakti (Madhyama)</i>	100
<i>Vyayam Shakti (Madhyama)</i>	83.33
<i>Satva (Madhyama)</i>	95.83
<i>Satmya (Madhyama)</i>	100
<i>Pramana (Madhyama)</i>	100

Table 2: Subjective findings (n=15)

Observations	No. of patients (%)
Frequency	100
Urgency	100
Hesitency	100
Nocturia	100
Incomplete voiding	100
Weak urine stream	100

Table 3: Objective findings (n=15)

Observations	No. of patients (%)
Enlargement of lobes (both lateral)	66.67
Size of prostate (moderate)	75
Shape of prostate (oval)	100
Surface of prostate (smooth)	100
Rectal mucosa (free)	100
Consistency (soft)	100
Mobility	100
Urine flow rate (4–6 ml/s)	45.83
Post-void residual urine (up to 50 ml)	62.5

Table 4: Effect of Mahayavanala Roma Kshara on subjective parameters (n=6)

Symptoms	Mean score		SD ±	SE ±	t	P Value
	BT	AT				
Incomplete voiding	05	03	40.00	00	00	-
Frequency	3.83	2.17	43.48	1.63	0.67	2.5
Intermittency	4.56	2.78	39.02	1.09	0.36	4.88
Hesitancy	2.83	1.5	52.94	0.55	0.22	6.71
Urgency	03	1.17	61.11	1.17	0.48	3.84
Nocturia	2.83	1.83	35.29	0.63	0.26	3.87
Straining	2.16	0.67	69.23	0.55	0.22	6.71
Weak urine stream	3.17	1.67	47.37	1.05	0.43	3.50

P≤.001: Highly significant; P≤.01: significant

Table 5: Effect of Dhanyaka Gokshura Ghrita on subjective parameters (n=9)

Symptoms	Mean score		SD ±	SE ±	t	P Value
	BT	AT				
Incomplete voiding	4.44	3.22	27.5	0.83	0.28	4.4
Frequency	4.56	3.56	21.95	0.33	01	0.33
Intermittency	4.56	2.78	39.02	1.09	0.36	4.88
Hesitancy	04	1.89	52.78	1.45	0.48	4.36
Urgency	2.78	1.33	52.00	1.89	0.63	2.31
Nocturia	3.44	2.11	38.71	0.87	0.29	4.62
Dysuria	3.89	03	22.86	1.45	0.48	1.84
Weak urine stream	3.44	1.44	58.06	02.12	0.71	2.83

P≤.001 = Highly significant; P≤.01 = significant; P≤.10 = nonsignificant

reduce the symptoms due to irritation of the lower urinary tract (e.g., dysuria, frequency).

Another probable reason for such relief may be the anti-

testosteronic effect of the *Kshara*. As mentioned by the Acharyas, *Kshara* can cause impotency and the impotency is certainly due to decrease in the testosterone level. Thus, it is likely that the anti-testosteronic properties of *Kshara* helps to

Table 6: Effect of Mahayavanal Romakshara on residual urine volume and urine flow rate (n=6)

Parameter	Mean score		(%) of relief	SD ±	SE ±	t	P Value
	BT	AT					
Residual urine volume	33.11	22.63	31.85	15.85	6.47	1.62	>.10
Urine flow rate	4.75	5.47	15.21	0.38	0.16	4.55	<.001

Table 7: Effect of Dhanyaka Gokshura Ghrita on residual urine volume and urine flow rate (n=9)

Parameter	Mean score		(%) of relief	SD ±	SE ±	t	P value
	BT	AT					
Residual urine volume	73.47	32.71	55.47	34.06	11.35	3.59	<.001
Urine flow rate	3.89	4.68	21.12	0.57	0.19	4.26	<.001

Table 8: Effect of Mahayavanal Romakshara on prostate volume (n=6)

Parameter	Mean score		(%) of relief	SD ±	SE ±	t	P value
	BT	AT					
Prostate volume	47.33	37	21.83	12.32	5.03	2.05	≤ .05

P≤0.05 = Significant.

Table 9: Effect of Dhanyaka Gokshura Ghrita on prostate volume (n=9)

Parameter	Mean score		(%) of relief	SD ±	SE ±	t	P value
	BT	AT					
Prostate volume	52.04	41.09	21.05	16.92	5.64	1.94	≤ .05

Table 10: Total effect of the Mahayavanal Romakshara on subjective parameters (n=6)

Result	No. of patients	Percentage
Complete remission	00	00
Marked improvement	00	00
Moderate improvement	00	00
Mild improvement	06	100
Unchanged	00	00

Table 11: Total Effect of Dhanyaka Gokshura Ghrita on subjective parameters (n=9)

Result	No. of patients	Percentage
Complete remission	00	00
Moderate improvement	00	00
Marked improvement	01	11.11
Mild Improved	07	77.78
Unchanged	01	11.11

Table 12: Total effect of Mahayavanal Romakshara on objective parameters (n=6)

Parameter	Complete remission	Marked improvement	Moderate improvement	Mild Improved	Unchanged
Size of prostate	00	05	00	00	01
Percentage	00	83.36	00	00	16.67
PVRU	02	00	03	01	00
Percentage	33.34	00	50	16.67	00
Urine flow rate	00	00	00	05	01
Percentage	00	00	00	83.36	16.67

PVRU = Post-void residual urine.

Table 13: Total effect of *Dhanyaka Gokshura Ghrita* on objective parameters (n=9)

Parameter	Complete remission	Marked improvement	Moderate improvement	Mild Improved	Unchanged
Size of prostate	00	00	06	02	01
Percentage	00	00	66.67	22.22	11.11
PVRU	02	04	00	02	01
Percentage	22.22	44.45	00	22.22	11.11
Urine flow rate	00	00	00	05	04
Percentage	00	00	00	55.56	44.45

Table 14: Comparative analysis of group A and group B (Student's unpaired 't' test)

Group B (n=9)				Group A (n=6)			
Sl. No.	BT-AT=X	x-x ₁ =d	d	Sl. No.	BT-AT=X	X-X ₂ =d	d
1	10	1.33	1.77	1	14	3.83	14.67
2	03	-5.67	32.15	2	12	1.83	3.35
3	02	-6.67	44.49	3	14	3.83	14.67
4	09	0.33	0.11	4	10	-0.17	0.03
5	05	-3.67	13.47	5	05	-5.17	26.73
6	21	12.33	152.03	6	06	-4.17	17.39
7	09	0.33	0.11				
8	12	3.33	11.09				
9	07	-1.67	2.79				
Total	Σ x=78	Σ d ₂ =258.01		Total	Σ x=61	Σ d ₂ =76.84	
		X ₁ =Σ x/n=8.67				X ₂ =Σ x/n=10.17	

Group A - *Dhanyaka Gokshura Ghrita*; group B - *Mahayavanala Roma Kshara*; BT- Before treatment; AT- After Treatment; X₁= mean of observations of Group B; X₂= Mean of observations of Group A; SD (Standard deviation)=41.20; SE(Standard error)=2.54; t=1.72; P<0.05

reduce the size of the prostate gland and give symptomatic relief. This hypothesis requires further evaluation.

Treatment with *Dhanyaka Gokshura Ghrita* provided highly significant relief in incomplete voiding, intermittency, hesitancy, and nocturia. There was also significant relief of symptoms like frequency of micturition, urgency, and weak urine stream.

Dhanyaka Gokshura Ghrita contains only two drugs, i.e., *Dhanyaka* and *Gokshura*. *Dhanyaka* is *Tridosahara*, *Dipana*, *Pachana*, and *Strotovishodhana*,^[11] while *Gokshura* has properties like *Vatahara*, *Mutrala*, *Anulomana*, *Basti Shodhaka*, *Dipana*, and *Pachana*,^[12] etc. Both drugs were processed with *Ghrita* which carried all the properties of above drugs, as *Ghrita* is *Yogavahi*. Thus, the actions of *Dhanyaka Gokshura Ghrita* were by virtue of the properties mentioned above.

Conclusion

In this study we compared two Ayurvedic treatments for BHP, i.e., *Mahayavanala Roma Kshara* and *Dhanyaka Gokshura Ghrita*. It was found that *Mahayavanala Roma Kshara* had better effect on the objective parameters, whereas *Dhanyaka Gokshura Ghrita* showed better effect on the subjective parameters.

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हिन्दी सारांश

पौरुषग्रंथी वृद्धि में 'महायवनाल रोमक्षार' एवं 'धान्यक गोक्षुर घृत' का एक तुलनात्मक चिकित्सकीय अध्ययन

योगेश वसावा सी. भुयान मंजूषा राजगोपाल एस.के.गुप्ता टी. एस. दुधमल

सुश्रुत संहिता में वर्णित १२ प्रकार के मूत्राघातों में से एक "वाताष्ठीला" वृद्धावस्था में होने वाली मूत्रवह स्रोतस की प्रमुख व्याधी है, जो आधुनिक मतानुसार बी.पी.एच. से समानता रखती है। इस शोधकार्य में 'महायवनाल रोमक्षार' एवं 'धान्यक गोक्षुर घृत' का पौरुषग्रंथी वृद्धि में एक तुलनात्मक अध्ययन का सफल प्रयास किया गया है। जिसमें पौरुषग्रंथी वृद्धि के लक्षणों यथा मूत्राधिक्य, मूत्रसंग, प्रवाहणपूर्वक मूत्रत्याग इत्यादि से पीड़ित रोगियों को महायवनाल रोमक्षार कैप्सूल की ५०० मिलीग्राम मात्रा दिन में दो बार, कोष्ण जल से ४५ दिनों तक खिलायी गयी जबकि दूसरे वर्ग में धान्यक गोक्षुर घृत की १० ग्राम मात्रा दिन में दो बार, कोष्ण जल से ४५ दिनों तक खिलायी गयी। परिणाम स्वरूप, महायवनाल रोमक्षार वर्ग में मूत्रावरोधजन्य लक्षण यथा पौरुषग्रंथी वृद्धि, मूत्रप्रवृत्ति पश्चात मूत्रावरोधजन्य लक्षणों में न्यूनता इत्यादि में धान्यक गोक्षुर घृत की अपेक्षा अधिक लाभ पाया गया जबकि धान्यक गोक्षुर घृत वर्ग में मूत्राधिक्य, मुहुर्मुहु मूत्रत्याग, प्रवाहणपूर्वक मूत्रत्याग, मूत्रसंग, वेदनापूर्वक मूत्रत्याग एवं मूत्रप्रवृत्ति की सतत तीव्रेच्छा जैसे लक्षणों में महायवनाल रोमक्षार वर्ग की अपेक्षा अधिक लाभ दिखाई दिया।