

A PHYSIOCLINICAL STUDY OF MASHADI MODAKA ON KARSHYA PURUSH W.S.R. TO AGNI

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Article Received on
21 Sept. 2021,

Revised on 11 October 2021,
Accepted on 01 Nov. 2021

DOI: 10.20959/wjpr202113-22391

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ABSTRACT

In Ayurveda agni is the main factor for whole digestion and metabolism of body. Taken food is to be digested, absorbed and assimilated, which is important for maintenance of life and our health is performed by the agni. In Charaka Samhita eight types of despicable purush are mentioned. In which atikrishta is one of those. Out of asthina and Purush, atikrish is also an important condition which is neglected by human and one only talk about atisthaulya condition. In present time, everyone wants to be in race for achieving good lifestyle and remain always in hurry, hurry and worry. Hence they eat faulty food by taking fast food, alcohol and cold drinks. This type of diet has improper nutrition and so the proper nourishment of body can't take

place. Atikarshya is a condition which involves insufficient supply of nutrients to dhatus in any stage of life. Hence by using samanyavishesh siddhant a person must use Bramhana Dravyas which are kaphavardhak.

KEYWORDS: Karshya, balya, brihmana, jivaniya, samanyavishesh and agni.

INTRODUCTION

A vast description of Ayurveda may be seen in Atharvaveda. This diverse knowledge of *Ayurveda* was passed to the next generation. *Ayurveda* is also regarded as one of the ancient system of medicine with holistic approach towards human health care. The time is changing

and not only the policy makers of India, but the whole world is realizing the importance of Ayurveda. In the present time of civilization a person is not conscious towards his ideal health because he is busy to achieve physical pleasure as early as possible. Due to this a person always remain in hurry, worry and curry this leads to change in life style, faulty diet pattern and decrease interest in the exercise. The incidence of *krishta* increases day by day in our society. India in ranking 1 under weight people as comparative number 5 in overweight people. Little wonder the United Nation special reporter on the right to food, Jean Zeigler, raised the alarm to the U.N. Human Right Council in a September 2006 report titled “The Extent of Chronic Hunger and Malnutrition in India”. Ziegler says his report was motivated by the fact that India has the largest number of under nourished people in the world and one of the highest level of child. It is the most widespread health and nutritional problem in developing countries.^[1] Out of *asthanindit purusha*, *Atikrish* which is described by Acharya Charak in *sutrasthanam*.^[2] It is rarely listed among diseases. For achieving physical pleasure as soon as one should be always in hurry, curry and worry, people are becoming more lazier towards food and following faulty food habits by taking fast food, cold drinks, alcohol and fatty diets. This type of diet has improper nutrition and so the proper development lacks. *Atikrish* is a condition which involves insufficient supply of nutrients to *dhatu*s in any stage of life. *Ayurveda* believes that many health problems can be prevented by taking nutritious diet in proper quantity and proper time. Food is one of the three sub pillars of life as per *Ayurveda*. The *Aahara –rasa* is converted in *torasadisapta dhatu*s through the action of *Agni* and these *dhatu*s make the building blocks of the growing body. There are many *aasadi* and *aaharadravya* described in various ancient *Ayurvedic* texts in which *brahmniyadravya* are the one. The intake of *aaharadravya* in improper quantity, quality and improper time leads to lack of nutrition which causes *Atikrishta* in a person. **Acharya Charaka** has described the role of *Agni* in *dashvidha Aaturpariksha* and has also described its importance in *Grahiniaddhaya of Charakachikitsa chapter 15*. Due to disturbances in *Agni*, the digestion and assimilation of food will be improper which will lead to lack of nutrition and can also lead to *krishta*. According to *Acharya Charaka*, *krishta* occurs due to indulgence in *vatajaaahara–vihara*. Hence by applying *samanya-vishesha siddhantha*, a person must use *dravyas* which are predominantly *kaphavardhak*. According to *samanyavisheshasiddhantha*, *Mashadi Modaka* (*Masha*, *Nawashali*, *Mradwika/Munnaka*, *Kharjura*, *Narikela Gur/jaggery*, *Dugdha*.) as diet supplement with *pathya-apathya* has been carried out to evaluate the effect of these *dravyas* in *krishawastha*. These *aaharadravya* show their effect through their *Rasa*, *Guna*, *Virya*, *Vipaka*, *Prabhava* and *Panchbhautikatva*.

OBJECTIVE

The present study 'A Physioclinical study of mashadi modaka on karshya purush W.S.R to Agni, By using samanya vishesha siddhant a person must use BrimhanaDravyas which are kaphavardhak. Brahmana dravyas are taken in the form of mashadimodaka are – masha, nawashali, munnakka, kharjura, narikela and gur. Thesedravyas are mentioned as kaphavardhak and as brihmana in Charaka Samhita. Mashadimodaka used as diet supplement with pathya – apathya has been carried out to evaluate the effect of modaka in karshya person. These modaka shows the brihmana effect from their constituents dravyas. TheseBrihmanadravyas show their effect through their rasa, guna, virya, vipaka, Prabhav and panchbhautiktatva.

METHOD

In the clinical study, the effect of mashadimodaka a karshya has been assessed W.S.R. to agni for this purpose. The study was conducted after careful clinical history, examination and laboratory investigation as per proforma, volunteers were selected and screened for their suitability of getting enrolled in this trial as per specific inclusion and exclusion criteria. Mashadimodaka (50gm twice a day) with sunthisadhit milk as anupan was given to subjects for 90 days, carried out on total 55 healthy volunteers. Volunteers were of age group 20-45 years.

PARAMETERS MEASURED

1. Weight (Kg)
2. Height (meters)
3. BMI measurement (weight in kg / height in meters²)
4. Anthropometrics measurement (cm)
5. Agni of individual

INVESTIGATION

- **Routine Examination**

b%, TLC, DLC, ESR

Urine Examination – Routine, Microscopic

CRITERIA TO BE ADOPTED: 1. Subjective Criteria**SYMPTOMS OF ATIKRISH**

'kq''dfLQxqnjxzhok	(emaciated buttock, abdomens, neck)
/keuhtkylarrk	(prominent vascular network)
{kkeLoj	(weak voice)
Okrxnkrqj	(suffering from Vatajvikara)
m''.k'khrklfg''.kqrk	(intolerant to hot and cold)
vfrlkSfgR;klfg''.kqrk	(intolerance to excessive food intake)

2. BMI (Body Mass Index)**WHO CLASSIFICATION**

BMI	WHO Classification	Description
<18.5 Kg/m ²	Underweight	Thin
18.5 -24.9Kg/m ²	-	Healthy, Normal
25.0 -29.9Kg/m ²	Grade 1 over weight	Over Weight
30.0 -39.9Kg/m ²	Grade 2 over weight	Obesity
>40.0 Kg/m ²	Grade 3 over weight	Morbid Obesity

Modaka Matra & 25 gm (Two *modakas* are given two times with 250 ml milk for three months.)

Masha - 4 gm

Nawashali - 4 gm

Prakshepadravya (MradwikaNarikelaKharjura) & 2.5 gm + 2.5 gm + 2.5 gm = 7.5 gm

Gur = 10 gm

Total quantity & 25.5 gm i.e. 25gm

All the above mentioned aaharadavyas are taken in equal parts & powdered first. Then they were mixed well and the binding agent was gura/ jaggery and ghrīt. And prakshepadravys added in the churna. The each modaka was prepared weighing was 25 gm.

OBSERVATION AND RESULTS

Table No. 1: Distribution According to Age.

Age	No.	%
≤ 25 yr	15	30.0
26 - 35 yr	24	48.0
36 - 45 yr	11	22.0
Total	50	100.0

Table No.1 shows that maximum number of patients were of the age 26 – 35 years followed by the age group ≤ 25 years in with 30.0% patients belonging in it.

Table No. 2: Distribution According to Gender.

Gender	No.	%
Female	28	56.0
Male	22	44.0
Total	50	100.0

Table No.2 shows that proportion of Females was relatively larger than the males with percentages 56% and 44% respectively.

Table No. 3: Distribution According to Socio-Economic Status.

Socio Economic Status	No.	Percentage
High	3	6%
Medium	21	42%
Low	26	52%
Total	50	100

Table no. 3 reveals that in the study High social class subjects were 6.0%, Middle were 42.0% and Low were 52.0%.

Table No. 4: Distribution According to Aahar Shakti.

Aahar Shakti	No.	%
Good	13	26.0
Medium	24	48.0
Poor	13	26.0
Total	50	100.0

Good aaharshakti was found in 26% cases, medium in 48.0% cases and rest 26% cases have poor aaharshakti.

Table No. 5: Effect of Treatment on the Parameter Agni.

Agni	BT		AT		chi sq	p-value
	No.	%	No.	%		
Mandagni	8	16.0	0	0	74.9	<0.001
Samagni	2	4.0	44	88.0		
Tikshna	24	48.0	0	0		
Vishamagni	16	32.0	6	12.0		
Total	50	100.0	50	100.0		

After the treatment the proportion of Samagni was increased from 4% to 88%. The changes after the treatment in various Agni natures was found to be highly Significant ($p < 0.001$).

Table No. 6: Effect of Treatment on the Quantitative Parameter 'Weight'

Parameter	Time	Mean	SD	% change	t-value	p-value
Weight	BT	50.38	6.36	6.95	-12.18	<0.001
	AT	53.88	6.27			

After the treatment 6.95% change was found in mean weight. This change was found to be highly significant ($p < 0.001$)

Table No. 7: Effect of Treatment on the Quantitative Parameter 'BMI (kg/m²)'.

Parameter	Time	Mean	SD	% change	t-value	p-value
BMI (kg/m ²)	BT	17.24	0.84	7.33	-12.39	<0.001
	AT	18.51	0.89			

After the treatment 7.33% change was found in mean BMI. This change was found to be highly significant ($p < 0.001$)

Table No. 8: Effect of Treatment on the Quantitative Parameter 'MUAC'.

Parameter	Time	Mean	SD	% change	t-value	p-value
MUAC	BT	28.58	2.48	11.48	-31.79	<0.001
	AT	31.86	2.62			

After the treatment 11.48% change was found in mean MUAC. This change was found to be highly significant ($p < 0.001$)

Table No. 9: Effect of Treatment on the Quantitative Parameter 'Chest Circumference'.

Parameter	Time	Mean	SD	% change	t-value	p-value
Chest Circum.	BT	85.96	5.55	4.89	-25.21	<0.001
	AT	90.16	4.88			

After the treatment 4.89% change was found in mean chest circumference. This change was found to be highly significant ($p < 0.001$)

Table No. 10: Effect of Treatment on the Quantitative Parameter 'Waist Circumference'.

Parameter	Time	Mean	SD	% change	t-value	p-value
Waist Circum.	BT	82.46	2.30	6.52	-41.20	<0.001
	AT	87.84	2.40			

After the treatment 6.52% change was found in mean waist circumference. This change was found to be highly significant ($p < 0.001$)

Table No. 11: Overall Effect of Treatment on the Quantitative Parameters.

Parameter	Time	Mean	SD	% change	t-value!	p-value
Weight	BT	50.38	6.36	6.95	-12.18	<0.001
	AT	53.88	6.27			
BMI (kg/m ²)	BT	17.24	0.84	7.33	-12.39	<0.001
	AT	18.51	0.89			
MUAC	BT	28.58	2.48	11.48	-31.79	<0.001
	AT	31.86	2.62			
Chest Circum.	BT	85.96	5.55	4.89	-25.21	<0.001
	AT	90.16	4.88			
Waist Circum.	BT	82.46	2.30	6.52	-41.20	<0.001
	AT	87.84	2.40			

Table No. 12: Summary of Clinical Parameters.

Parameter	Time	Mean	SD	% change	z-value	p-value
TLC	BT	7.6	1.65	5.26	1.43	0.164
	AT	7.2	1.14			
PolymorphS	BT	55.9	10.20	0.54	1.28	0.212
	AT	56.2	6.27			
Lymphocytes	BT	38.6	10.02	3.37	0.65	0.519
	AT	39.9	5.71			
Eosinophils	BT	1.1	0.91	18.18	1.13	0.262
	AT	0.9	0.77			
Monocytes	BT	3.0	2.46	40.00	1.86	0.064
	AT	1.8	1.80			
Basophils	BT	1.4	1.23	14.29	0.33	0.754
	AT	1.2	1.06			
ESR	BT	29.5	6.56	3.12	1.26	0.293
	AT	28.6	4.77			

DISCUSSION

Ahara is converted into rasa dhatu and further next other dhatus are formed, in that process Jhatahargni is important factor in aharapaka. If Jatharagni is poor (mandagni) improper digestion takes place, this condition leads to improper formation of dhatus, at the result of which a person get inadequate nutrition. The study has been done to assess the efficacy of MashadiModaka to provide nutrition and enhance body weight and improvement in all other objective and subjective parameters. Karshya is an Aharadoshajvyadhi, Alpaashana and vishamasana are main responsible factors of Karshya. All these above condition causes excessive emaciation. Vitiatedvata leads to agnidusti [Vishamagni] results in appropriate digestion due to Mandagni and sometimes Tikshnagni. Mandagni produces aama and then formation of all dhatus are hampered. Tikshnagni contribute to dhatu kashya. Dhatu kashya will lead to inadequate rasa dhatu and improper absorption results shoshita rasa dhatu [fail to

nourish tissues due to insufficiency]. Inadequate rasa dhatu is also result of alpasana and anasana. Thus a person not taking proper food gets emaciated. In Krishna persons Agnibala, Sharirbala, Aaharashakti and other related aspects are functioning poorly, the principle of management of karshya should be adopted in following manner : Nidanaparivarjana is the 1st line of treatment mentioned by Acharya Sushruta. Proper nutrition to the adult and all causes such as rukshaannapanasevan, vatikaaannapana, alpabhojana, katu, tikta, kasayasevana etc. should be avoided which are responsible for karshya. Mashadimodaka which contain Masha, Nawashali, Draksha, Narikela, Kharjura and Gura are given for trial because all these are Madhura Rasa, Guru Snigdha in Guna, Madhur Vipaka and SheetaVirya, balances Vata-pitta and increases Kapha. All these properties are responsible for Balyavardhak, rejuvenating, digestive and santarpan. One of the reasons behind the selection of this yoga is that these Aaharadravyas are easily available in sufficient quantity, are non controversial, economical and also effective by experience.

The maximum number of subject were of age 26-35years (48%) followed by the age group less than 25 years in with 30% subjects belonging in it also 22% subjects were of 36-45year. According to gender, proportion of females was relatively larger than the males with percentages 56% and 44% respectively. There is minor difference in incidence of both sex. Majority of the subjects were having madhyamAahar shakti i.e. 48% followed by 26% Avaraaahar shakti and 26% Pravaraahar shakti. Aahar shakti increases the capacity of eating. so, more the Aahar shakti more will be the weight gain.

Before giving the ahardravyas the mean of average weight score was 50.38 ± 6.36 which was increased to 53.88 ± 6.27 after giving the mashadimodaka. According to Wilcoxon signed Rank test, the increased in mean weight score was highly significant ($p < 0.001$). After the treatment 6.95% change was found in mean weight. This change was found to be highly significant ($p < 0.001$). Increase in weight due to Madhur Rasa, Guru Snigdha Guna and other Kaphavardhak property of Mashadi Modak. This Modak also have Balya, Brimhana, Jeevaniya and Vatashamak property. Also it may be due to acceleration of the body growth as a result of Brimhana, snigdha, Deepana and anabolic effect of mashadimodaka. Also modaka was given with shunthisadhit milk i.e with Deepan – pachandravya, attributed to Agnideepana and dhatuposhana effect.

Before giving the ahardravyas the mean of average BMI score was 17.24 ± 0.84 , which was the increased to 18.51 ± 0.89 after giving the treatment. According to Wilcoxon signed Rank test,

the increased in mean BMI score was highly significant ($p < 0.001$). After the treatment 7.33% change was found in mean BMI. This change was found to be highly significant. Increase in weight due to Madhur Rasa, Guru Snigdha Guna and other Kaphavardhak property of AharDravyas. When weights of subjects were increase it also causes increases in BMI of subjects.

Before and After Treatment comparison of Hb values among the subjects. Before giving the Aahardravyas mean of Hb score was 11.99 ± 1.38 which was increased to 12.46 ± 1.08 after the treatment, the mean Hb was significantly increased ($p < 0.001$). The changes in the values of TLC, DLC and ESR was not found to be significant.

Before giving the ahardravyas the mean of Mid Upper Arm Circumference score was 28.58 ± 2.48 , which was increased to 31.86 ± 2.62 after giving the treatment. According to Wilcoxon signed Rank test, the increased mean Mid Upper Arm Circumference score was highly significant ($p < 0.001$). After the treatment 11.48% change was found in mean BMI. This change was found to be highly significant.

Before giving the Ahardravyas, The mean of chest circumference score was 85.96 ± 5.55 , which was increase to 90.16 ± 4.88 after giving the mashadimodaka. According to Wilcoxon signed rank test, the increased mean chest circumference score was highly significant ($p < 0.001$). After the treatment 4.89% change was found in mean chest circumference. This change was found to be highly significant.

Before giving the Ahardravyas, The mean of waist circumference score was 82.46 ± 2.30 , which was increase to 87.84 ± 2.40 after giving the mashadimodaka according to Wilcoxon signed rank test, the increased mean chest circumference score was highly significant ($p < 0.001$). After the treatment 6.52% change was found in mean waist circumference. This change in all the above three was found to be highly significant. Due to Madhur Rasa, Guru Snigdha Guna and Vatashamak property of AharDravyas of Modak and also due to dhatuposhana effect of modaka. The Brimhanadravyas played an important role in increasing the mamsa and meda dhatu in body which was found significant in these values.

Before and After Treatment comparison of Hb values among the subjects. Before giving the Aahardravyas mean of Hb score was 11.99 ± 1.38 which was increased to 12.46 ± 1.08 after

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Many Pharmaco-therapies such as Brimhana, Rasayana, Vrisya have been advocated in the classics for the patients of Karshya. In Case of management of Karshya Acharya Charaka advised administration of mridu samsodhana as per the requirement. Considering the above mentioned fact Brimhana therapy in form of MashadiModaka has been administrated in the subject of Karshya. All volunteers were treated with Madhur, Sheeta, Snigdha and guru Aaharadravyas in the form of modaka (Mashadimodaka). In Ayurveda the action of AaharaDravyas is determined on pharmacodynamic actions as rasa, guna, veerya and vipaka along with certain specific properties called Prabhav (karma). These Aharadravyas in combination act as antagonist to the main morbid factor that is dosha and dushya to cause sampraptivighatana to all of the symptoms of disease.

Due to all these properties of ingredients of modaka, it is used in kshaya, Shosha, Daurbalya, Dhatusvardhan. The Srotoshodhaka property of yoga helps in clearance of channels and improves the circulation of Dhatus and indirectly helps in nourishment of dhatus means responsible for Uttrottar Dhatu Poshana. Vatanulomaka property of this yoga that is sunthisadhit milk helps in balance and maintenance of Agni and ultimately causes SamyakAaharapak. Vrishya property helps in triglycerides synthesis which is Dehavridhikara Bhava. On the other hand Guru SheetaSnigdha and MriduGunas are directly responsible for Brimhana effect in the body. Rasayana property improves general health and immunity. Jivniya property maintains equilibrium Dosha, Dhatu and Malas.

Conflict of Interest: Nil.

Funding Agency: Itself.

CONCLUSION

Ayurvedic drugs and procedure are believed to have safer non hormonal anabolic activity. Effect of Brimhana can be understood in two type of diet that is Aahar and Aushadha. Veeryapradhan BrimhanaAaushadha causes quicker results than that of BrimhanaAahara. The ultimate aim of treating Karshya is to achieve proportionate body growth and development. Taking mashadi modaka is effective to treat karshya without any side effects.

RESULTS

Given mashadimodaka found to be beneficial and promising results were noticed in subjective and objective parameters of subjects. Synergistic action of all ingredients of mashadimodaka are vata- pitta hara and kaphavardhak. This mashadi modak also show balya, brihmana, jivaniya and santarpana effect and sunthisandhit milk asanupan also show good effect on agni of karshya person.

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