



IMPORTANCE OF GRADUATED DIETETICS PROTOCOL OF MUDGA YUSHA- AN EXPERIMENTAL STUDY

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ABSTRACT

Background- Ayurvedic nutrition is very much essential to keep the *dhatu*s in normal state and avert the doshas from getting vitiated. Among this nutrition given in *Samsarjan krama* (graduated dietetic protocol), *Yusha* (soup) is useful to boost the digestive fire. It is recommended in healthy as well as diseased.

Aim and Objective- To study the importance of graduated dietetic protocol of *Krita* and *Akrita Mudga Yusha* with the help of parameters of *Jeerna aahar lakshanas*.

Material and Methodology- *Krita* and *Akrita Mudga Yusha* was given to 10 healthy individuals having BMR between 1400 to 1700 Kcal and *Samagni lakshanas* mentioned in Ayurvedic classical texts and assessed the digestion of *Krita* and *Akrita Mudga Yusha* with the parameters of *Jeerna Aahar lakshanas* (features of proper digestion)

Observation and Results- From the study it is observed that *Krita Mudga Yusha* takes more time to digest than *Akrita Mudga Yusha*.

Discussion and Conclusion- As *Krita Yusha* is *guru* (heavy), it takes more time to digest than *Akrita Yusha*, which is *laghu*. It is expected to take *Krita Mudga Yusha* after initiation of *agni*.

Keywords: Ayurvedic nutrition, *Yusha*, *Samsarjan krama*, Digestion

INTRODUCTION

In order to carry out our body's day to day activities there is an organization of various elements in our body. Among these elements the most important element is *Agni* (digestive fire), which is responsible for metabolism. In the classical texts of *Ayurveda*, Acharya Charak mentioned that “*Mulam agnistam niruchyate*” ^[1] which means that this *Agni* element is the base of life. There are four types of *agni*. *Samagni* (all the doshas are in equilibrium and do not influence digestive fire), *Mandagni* (Mild digestive fire), *Teekshnagni* (intense digestive fire), *Vishamagni* (inconsistent/irregular digestive fire). Food acts as fuel to *Agni* [2]. Imbalance of *agni* is the root cause of all the diseases [3]. After the purification treatments of *panchakarma* or in all the diseases the digestive fire gets weakened due to inadequate elimination of *doshas*. Hampered digestive fire will not be able to digest food properly and therefore indigestion may begin. Hence after cleansing treatments normal food should not be given as it nullifies the useful effects of cleansing treatments. Therefore, to keep this *agni* in normal state and make it efficient to digest all forms of food, diet is arranged in series from liquid to semisolid and from semisolid to solid and then to normal which is called *Samsarjan krama*. In *Samsarjan krama* food is initiated cautiously from *Laghu Aahar* to *Guru Aahar* in order to

increase the digestive fire and to provide consecutive nourishment and adjustability to every system of body. Division of food articles is done into 12 sub groups. *Kritanna varga* is one of them [4]. It is a group of various *Pathya kalpanas* (food preparations) in sequence of *Manda* (liquid gruel), *Peya* (thin gruel), *Yavagu*(gruel), *Vilepi* (thick gruel), *Krisara* (thick paste gruel), *Yusha*(soup), *Mamsaras* (meat soup) etc. The status of the *agni* is enhanced by these *Pathya kalpanas*. In a purified person *agni* becomes strong, stable and promote digestion of all types of food by consecutive administration of *manda*, *peya* etc. Starting from the liquid diet, *Manda* and *Peya* at the beginning is the easiest to get digested and make the the digestive fire strong enough to digest semisolid food. In next schedule semisolid foods, sequentially, *Yavagu* (semisolid soup), *Vilepi* (gruel), *Krisara* (porridge), *Yusha* (soup) etc. are administered. Among these *Yusha* (soup) is one of the most important as it stimulates the digestive fire. According to *Aacharya Kashyapa*, *Yusha* means liquefaction and metabolism [5]. It is a diet which is suitable for both healthy and diseased. It is of two types, *Krita Yusha* (soup processed with fat, salt and *Katu* (pungent) *dravyas*) and *Akrita Yusha* (food not processed with fat, salt or *Katu* (pungent) *dravyas*). *Akrita Yusha* is selected as first line of use during

Samsarjan krama. It is completely insipid diet. Whereas *Krita Yusha* is more palatable and improves digestive fire. *Krita Yusha* is *guru* and *Akrita Yusha* is *laghu* [6]. Therefore *Krita Yusha* takes more time to digest than *Akrita Yusha*. Among the *Shimbidhanya varga*, *Mudga* (green gram) is considered as *pathya aahar* as it has many dietary uses. It has *Madhura rasa*, *Sheeta virya* and *Katu vipaka*. It is *Hridya*, balances all three *doshas*, increases appetite, increases *agni* and provides nourishment and strength. It is *Pathya* in *Kapha*, *Raktapitta*, *Trishna*, *Daha*, *Jwara*, *Vrana* [7]. *Mudga Yusha* is the best among all the *Yushas* [8]. So here is a try to throw light on digestion timing of *Krita* and *Akrita Mudga Yusha* and its wide use that can be taken into practicality.

Aim - To study the importance of graduated dietetics protocol of *Krita* and *Akrita Mudga Yusha*.

Objective -To validate the method of preparation of *Krita* and *Akrita Mudga Yusha* as per Ayurvedic classics.

-To compare digestion timing of *Krita* and *Akrita Mudga Yusha* with the help of ayurvedic parameters of *Jeerna aahar lakshanas* (features of proper digestion).

MATERIAL AND METHODOLOGY

Place of study – OPD of Swasthavritta of Dr.D.Y.Patil College of Ayurved and Research Center Pimpri, Pune.

Material- According to *Kaiyyadev Nighanthu*, *Yusha* is prepared by cooking one part of *Shimbidhanya* in 18 parts of water. It is liquid in consistency.

Ingredients of *Krita Mudga Yusha* [9]

Sr no.	Name of the ingredient	Botanic-al name	Rasa	Guna	Virya	Vipaka	Doshakarma	Quantity
1	<i>Mudga (green gram)</i>	<i>Phaseol aurens</i>	<i>Madhura</i>	<i>Laghu Ruksha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Pitta, kapha shamaka Vata vardhaka</i>	<i>2pala (80 grams)</i>
2	<i>Jala</i>	<i>Water</i>	<i>Gupta Rasa</i>	<i>Laghu, swacha, sheetal</i>	<i>Sheeta</i>	-	-	<i>½aadhak (1536 ml)</i>
<i>Kritartha dravyas</i> [10]								
1	<i>Saindhav Lavana</i>	<i>Rock Salt</i>	<i>Lavana</i>	<i>Tikshna, Laghu, Snigdha, Sukshama</i>	<i>Anushna Sheeta</i>	<i>Madhura</i>	<i>Tridosahara</i>	<i>¼ th pala (10 grams)</i>
2	<i>Shunthi</i>	<i>Zingiber officinale</i>	<i>Katu</i>	<i>Laghu, Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha Vata Shamak</i>	<i>¼ th pala (10 grams)</i>
3	<i>Pippali</i>	<i>Piper longum Linn</i>	<i>Katu</i>	<i>Snigdha, Laghu, Tikshna</i>	<i>Anushna, Sheeta</i>	<i>Madhura</i>	<i>Vatashamaka</i>	<i>1 shaan (3 grams)</i>
4	<i>Jeerak</i>	<i>Cuminum cyminum</i>	<i>Katu</i>	<i>Laghu, Rooksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatahara, pitta vardhak</i>	<i>1 shaan (3 grams)</i>
5	<i>Dhanyak</i>	<i>Coriandrum Sativum</i>	<i>Kashay</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridoshara</i>	<i>¼ th pala (10 grams)</i>
6	<i>Dadim</i>	<i>Punica granatum</i>	<i>Madhura, Amla, Kashaya</i>	<i>Laghu, Snigdha</i>	<i>Anushna</i>	<i>Madhura/Amla</i>	<i>Tridosahara</i>	<i>¼ th pala (10 grams)</i>

Ingredients of Akrita Mudga Yusha [11]

Sr no.	Name of the ingredient	Botanical name	Rasa	Guna	Virya	Vipaka	Doshakarma	Quant-ity
1	Mudga (green gram)	Phaseol aurens	Madhura	Laghu Ruksha	Sheeta	Madhura	Pitta, kapha shamaka Vata vardhaka	2pala (80 grams)
2	Jala	Water	Gupta rasa	Laghu, swacha, sheetal	Sheeta	-	-	½ aadhak (1536 ml)

METHODOLOGY

Krita Mudga Yusha Preparation

Yusha is prepared by boiling Shimbidhanya (pulses) in 18 parts of water [12]. All the ingredients of the *Mudga Yusha* should be properly cleaned and washed. 2 pala (i.e 80 grams) of *Mudga* and ½ aadhak (i.e 1536 ml) of water should be taken and heated till *Mudga* is cooked or remains 1/4th i.e 384 ml. It should be then mashed and filtered. Then the filtered material should be made *Krita* by adding *Kritartha dravyas* viz. *Dadim*, *Saindhav*, *Shunthi*, *Dhanyak powder*, *Pippali* and *Jeerak churna* [13].

Akrita Mudga Yusha [14]

Akrita Mudga Yusha is prepared same as *Krita Yusha* but without the *Krittartha dravyas*.

Dose

Healthy individuals were advised to take *Krita Mudga Yusha* as meal in forenoon for 1 day. And same was followed for *Akrita Mudga Yusha* the next day. The *Matra* prescribed for both *Krita* and *Akrita Mudga Yusha* was 500 ml a day.

Inclusion Criteria

- Healthy individuals having BMR between 1400 kcal to 1700 kcal.
- Healthy individual having *Samagni* (digestive fire) *lakshanas* as per Ayurveda.

Exclusion criteria

- Known cases of metabolic syndrome.
- Known cases of endocrine syndrome.

Assessment Criteria

Jeerna Aahar Lakshanas	Time taken for digestion of Mudga Yusha							
	After 15 mins	After 30 mins	After 45 Mins	After 1 hr	After 1.15 mins	After 1.30 Mins	After 1.45 mins	After 2 hrs
1	<i>Udgar shuddhi</i> (Clear belching) [15] <i>Vishuddha udgar</i> (Clear belching)							
2	<i>Laghuta</i> (Lightness) [15] <i>Deha laghuta</i> (Feeling of lightness in the body) <i>Klamaparigame</i> (Freshness)							
3	<i>Shuta</i> (Hunger) <i>Shithil kukshi</i> [15] (Feeling of looseness in abdomen) <i>Annayam Shraddha</i> [15] (Liking towards food) <i>Agni udiran</i> [16] (Ignition of digestive fire) <i>Khuta bodha</i> [16]							

	(Feeling of hunger)								
4	<i>Pipasa</i> (Thirst) [16] <i>Trishna</i> (Thirst)								
5	<i>Utsaha</i> (Enthusiasm) [17] <i>Vivruta strotas mukha</i> (Free channels) <i>Vishuddha Hridaya</i> (Alertness of all senses) <i>Vishadakaran</i> (No feeling of depression/ nostalgia)								
6	<i>Vegotsarga</i> (Excretion of waste products) [15] <i>Vishrushta mutra vega</i> (Free excretion of urine) <i>Vishrushta Purish vega</i> (Free excretion of stools) <i>Vatanulomana</i> (Expulsion of Vata)								

OBSERVATION AND RESULTS

Sr no.	Jeerna aahar lakshanas	Krita Mudga Yusha Mean±SD in minutes	Akrita Mudga Yusha Mean±SD in minutes	Change %
1	<i>Udgarshuddhi</i> (Clear belching) i. <i>Vishuddha udgar</i> (Clear belching)	45 ± 19.63	24 ± 18.97	46.66%
2	<i>Laghuta</i> (Lightness) i. <i>Deha laghuta</i> (Feeling of lightness in the body) ii. <i>Klamaparigame</i> (Freshness)	66±12.64	45 ± 16.03	31.81%
3	<i>Kshut</i> (Hunger) i. <i>Agni udiran</i> (Ignition of digestive fire) ii. <i>Shithil kukshi</i> (Feeling of looseness in abdomen) iii. <i>Kshutbodha</i> (Feeling of hunger) iv. <i>Annayam shraddha</i> (Liking towards food)	81 ± 16.12 81 ± 16.12 90 ± 10 93.75 ± 13.29	69 ± 16.12 67.5 ± 8.017 69 ± 16.12 60 ± 13.41	14.81% 16.66% 23.33% 36%
4	<i>Pipasa</i> (Thirst) i. <i>Trishna</i> (Thirst)	57 ± 27.20	39 ± 23.66	31.57%
5	<i>Utsaha</i> (Enthusiasm) i. <i>Vivrut strotas mukha</i> (Free channels) ii. <i>Vishuddha Hridaya</i> (Alertness of senses) ii. <i>Vishadakaran</i> (No feeling of depression /nostalgia)	72 ± 25.29 97.5 ± 8.017 100 ± 7.74	52.5 ± 13.88 52.5 ± 13.88 67.5 ± 8.66	27.08% 46.15% 32.5%
6	<i>Vegotsarga</i> (Excretion of waste products) i. <i>Vishrushta Mutra Vega</i> (Free excretion of urine) ii. <i>Vishrushta Purisha Vega</i> (Free excretion of stools) iii. <i>Vatanulomana</i> (Expulsion of Vata)	87 ± 18.43 82.5 ± 24.05 105 ± 0	78.75 ± 23.71 78 ± 24.64 90 ± 17.32	9.48 % 5.45 % 14.28 %

DISCUSSION

Digestion of food is the main motive of body's nutrition. As the digestion process starts our body shows particular signs that speculate the phases of digestion. *Udgarshuddhi* (Clear belching), *Laghuta* (Lightness), *Kshut* (Hunger), *Pipasa* (Thirst), *Utsaha* (Enthusiasm), *Vegotsarga* (Excretion of waste products) are the *Jeerna aahar lakshanas* (signs of proper digestion). Among these, *Udgar shuddhi* and *Laghuta* are seen in the initial stage. *Kshut* and *Pipasa* are observed at the middle stage. *Utsaha* and *Vegotsarga* are there at the last stage of digestion.

Udgaara shuddhi (Belching)- As food is ingested, it moves from *Amashaya* (stomach) to the *Pachyamanashaya* (duodenum) due to *Vata* (air). Likewise, when food moves into *Pachyamanashaya* the cavity in it is occupied by food which results in disturbance of *Vata* in *Pachyamanashaya*. So the disturbed *Vata* tries to move through nearest route i.e mouth in terms of belching. If the food gets digested properly belching should be clear and should not carry smell of ingested food. ***Laghuta (Lightness)***- *Dehalaghuta* and *Klamaparigaman* are terms used for *laghuta*.

Dehalaghuta (Feeling of lightness) – There is related increase of weight after the ingestion of food. *Jatharagni* (digestive fire) starts its action once the food is ingested.

Due to this, increased weight comes to baseline consequently which results in feeling of lightness.

Klamaparigaman (Freshness)- Feeling of lightness results in feeling of freshness.

Kshut (Hunger)- In the first *avasthapak* (first phase of digestion) food gets partly digested and moves from *aamashaya*(stomach) to *Pachyamanashaya* (deodenum) leaving the stomach empty. Therefore hunger is felt.

Pipasa (Thirst)- During the process of digestion, when *Ushna*(hot) and *Tikshna*(sharp) *guna* (qualities) are functioning at their peak, *pipasa* (thirst) is felt.

Utsaha (Enthusiasm)- Proper digestion of food ends up into supply of good energy. This happens when food gets digested, there is no formation of *ama*. (endo- toxins) and also the formed mala gets excreted properly. Due to this cleanliness is observed by all the *strotasas* (channels of the body) i.e *Vivruta strotas mukha* , there is *Vishuddha hridaya* (alertness of all senses) and *Vishadakaran* (no feeling of depression or nausea).

Vegotsarga (Excretion of waste products)- The three aahar malas are *Purisha* (stools), *Mutra* (urine) and *Sweda* (sweat) [18]. *Mutra* formation takes place in *Pakwashaya*. In the third stage of *avasthapaka* when *ahara* comes to *Pakwashaya* mala part is separated in two forms *Ghana mala* and *Drava mala*. *Drava mala* is converted into

mutra (urine) and Ghana mala is converted into Purisha (stools) and both are excreted out of body by Apana Vayu (flatus). Sweda is formed as the end product of meda dhatu metabolism.

CONCLUSION

From the above study we concluded that graduated dietetic protocol mentioned in Ayurveda affects digestive fire. So it is wise to follow this protocol for prevention of disease as well as in the treatment of the disease.

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