STUDY TO EVALUATE THE EFFECT OF MATRAVAT AHARA

*1Dr. Priyanka Sharma and **2Dr. Mangalagowri V Rao

1Department of Swasthavritta and Yoga, Faculty of Ayurveda Institute of Medical Sciences
Banaras Hindu University Varanasi-221005.

2Assistant Professor Department of Swasthavritta & Yoga Faculty of Ayurveda Institute of
Medical Sciences Banaras Hindu University Varanasi-221005.

ABSTRACT

Ahara is one of the three pillars or Trayopstambha, on which human body works within physiological limits. Other two pillar are Nidra and Brahamcharya. Ahara considered as nectar in Vedas. According to Ayurveda Matravat Ahara nourishes both body and mind. Matravat Ahara maintains physiological state of Agni, and replenishes the bodily Dhatus also prevents Dhatu Vaishamya. Matravat Ahara in Modern Science emphasizes on balanced diet, which comprises of variety of food groups in such quantities and proportions that the need for energy, proteins, vitamins, minerals, fats, carbohydrates and other nutrients is adequately met for maintaining health, vitality and general wellbeing. Hence the study comprising of 100 volunteers was conducted to assess the effect of Matravat Ahara (restricted diet) on status of Agni through Ruchi, Abhyavaharana and Jarana Shakti. The volunteers were advocated to take food to their satisfaction for 14 days followed by intake of food up to 3/4th of one’s capacity. The subjects were assessed on the basis of specific proforma including demographic profile, constitutional profiles, clinical profile, Ashtavidha Pariksha, assessment of Sarvagraha Ahara and assessment of Agni status. The study shows an improvement in Agni with significant shift in grades of Ruchi, Abhyvaharana shakti and Jarana Shakti after Matravat Ahara (restricted diet), it was statistically highly significant in all the parameters.

KEYWORDS: Matravat Ahara, Restricted diet, Agni, Abhyvaharana Shakti, Jarana Shakti.
INTRODUCTION

Ayurveda gives highest regards to food and food provides strength, life activities, the bright texture of the skin, health and normal activities, of all the organs. These are essential qualities of a healthy individual or 'Swastha' and are due to the intake of proper food in quality and quantity.

‘Arogyam Bhojanadhinam’

Food is very basis of life, so given first priority among Trayopastambha is given to food. Intake of food in adequate quantity and quality is highly essential for promotion prevention and maintenance of health food should be taken in proper quantity and quality. *Ahara* is defined as any material taken by mouth into the alimentary canal, which transformed into the *Dhatus Poshakamsha* after proper digestion resulting in promotion of growth, recovery of loss, protection from diseases for survival of body. Acharya Charaka says that it is the *Ahara* which maintains the equilibrium of bodily *Dhatu* and supports in health promotion and disease prevention. According to Sushruta, *Ahara* is that which restores the vigor, provides instantaneous strength instantly after intake, sustains body and increases the life-span, happiness, memory, power, *Ojas* and digestive capacity. Charaka in terms of *Hitahara* i.e. wholesome diet and *Ahitahara* i.e. unwholesome diet and states “The food which maintains the balance of *Dhatu* restores the equilibrium of imbalanced ones, should be taken as wholesome, otherwise unwholesome. According to Ayurveda, it is better to take diet in the morning and evening, because these two timings are regarded as the 'Pittakala' when there is maximum secretion of digestive juices. Food taken in optimum quantity for promotion of health and prevention of disease is termed as *Matravat Ahara* in Ayurveda.

MATRAVAT ASHNIYAT

Ayurveda advocates that every human being is unique and different in terms of Prakriti from others, hence the needs of every being is different from one another. Therefore quantity of food required for health also differs from person to person.

Besides the Prakriti of human beings, the nature of food items, place, Satmya environment is also variable. Taking into consideration these variations, Ayurveda contributes the concept of “Trividhakukshiyavimana “which determines the *Matra* of food ensuring person’s good health.
The meaning of Kukshi is Amashaya, Part of Gastro-intestinal tract where reception, digestion and absorption occur. In Ayurveda Amashaya is described as Ashaya of Ama which is located between the Stana and Nabhi.

As per Ayurveda, while describing Matravat Ahara the Amashaya is imagined to be divided in three parts and the food items should be taken accordingly. One part of Kukshi should be filled up with solid food, the 2nd part with liquid and 3rd part should be left for Tridosha Sanchararana. One, who takes food with due regard to this principle, does not fall prey to any of the adverse effect that arises due to the intake of food in improper quantity. The nutrition of the body depends on the proper digestion of food which generates the Bala. While the improper digestion produces the disease.

In ‘Matra’, total quality as well as quantity of different items is considered. The former is known as ‘Sarvagraha’ (consideration of the whole) and the latter as “Parigraha” (consideration item wise). This is very important from the view of the concept of “balanced diet” because each item is considered with regard to the requirement of the body.\[5\]

Medieval era Sanskrit texts such as Dashakumara Charita and Hatha Yoga Pradipika discuss Mitahara. Further in Hatha Yoga Pradipika 1/57 the importance of “Mitahara”’ is given as,

ब्रह्मचारी मिताहारी त्यागी योग-परायणः | अब्दादृध्वं भवेद्मिद्धो नात्र कार्या विचारणः ||

A Brahmacari, taking Mitahara (diet in moderate quantity) and Tyaga (renunciation, solitude), devoted to Yoga achieves success in his enquiry and effort within half a year.\[6\] Difference between both is amount of leaving Mitahara advocates to leave ¼ part empty whereas in Trividha kukshi 1/3rd part is left empty. Considering preventive aspect of Trividhakukshiya this research is planned and executed.

AIMS AND OBJECTIVES
To assess the effect of restricted diet on status of Agni through Ruchi, Abhyavaharana and Jarana Shakti.

METHODS AND MATERIAL
Present study was conducted on volunteers (studying BAMS) in Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi. About 100 students
belonging to different age groups, gender and socio-economic status were selected based on the fulfillment of inclusion criteria after getting their consent.

**Inclusion Criteria**

1. Subjects having age more than 16 years and below 30 years.
2. Subjects willing to participate in the volunteer based study.

**Exclusion criteria**

The subjects suffering from any serious and full-fledged diseases like Malignancy, gastric ulcer etc. were excluded.

**Termination Criteria**

- Sudden deterioration in Subject’s health status during the period of study.
- Non-compliance of the subject.

**PLAN OF STUDY**

100 volunteers studying B.A.M.S. course in Faculty of Ayurveda, IMS, BHU were selected for the study after getting their written informed consent. The registered subjects were advised specific dietary changes. They were advised to take diet up to full satisfaction for 14 days followed by restricted diet for next 14 days. Restricted diet means to reduce or cutoff 1/3rd of total diet i.e. diet taken up to satisfaction. Assuming stomach capacity (diet up to satisfaction) in 3 parts, subjects were directed to take 1/3rd liquid, 1/3rd solid and leave 1/3rd empty. Subjects were also made to limit the use of unhealthy foods. They were advocated to decrease the use of energy rich foods like fried foods and bakery products. All the subjects were advised to avoid overeating, repeated eating and day sleeping. All the subjects were advised to take Laghu and Pathya Ahara, drink lukewarm water and avoid refrigerated water and all addiction.

**Study Profiles**

The subjects were assessed on the basis of specific proforma including demographic profile, constitutional profiles, clinical profile, Ashtavidha Pariksha, assessment of Sarvagraha Ahara and assessment of Agni status. For statistical analysis, multidimensional scoring system was adopted and was checked after period of diet up to satisfaction and restricted diet respectively.
Data collection instrument
Structured questionnaire.

Assessment criteria

Assessment of Sarvagraha Ahara
Assessment of Sarvagraha Ahara into Matravat, Hina or Ati Matra was done by a questionnaire developed based on classical Lakshana described in Ayurvedic texts.

Assessment of Agni
Assessment of Agni done on the basis of Ruchi, Abhyavaharana Shakti and Jarana Shakti.

Ruchi
- Totally unwilling for food 0
- Unwilling for food but can take meal 1
- Willing towards only most liking food and not to other foods 2
- Willing towards only one among Katu/Amla/Madhura food stuffs 3
- Willing towards some specific Ahara or Rasavishesha 4
- Equally willing towards all Bhojya Padartha 5

Abhyavaharana Shakti
- Person not at all taking food 0
- Person taking food in less quantity once a day 1
- Person taking food in less quantity twice a day 2
- Person taking food in moderate quantity twice a day 3
- Person taking food in normal quantity twice a day 4
- Person taking food in excessive quantity twice or thrice a day 5

Jarana Shakti
According to the symptoms of Jirna Ahara Lakshana (Madhava Nidan 6-24)
Udgara Sudhhi, Utsaha, Laghuta, Yathochita Malotsarga, Kshudha, Pipasa
- Presence of one symptom after 6 hours 0
- Presence of two symptoms after 6 hours 1
- Presence of three symptoms after 5 hours 2
- Presence of four symptoms after 5 hours 3
- Presence of all symptoms after 4 hours 4
- Presence of all symptoms within 4 hours 5
STATISTICAL ANALYSIS

Statistical Method
The data collected had been transferred on master chart showing various items/variables in columns and subjects in rows. The analysis of data was done using statistical software SPSS version 16.0. All the data were collected in tabulated form and shown in graphic representation also. Comparison was done to see the effect of restricted diet using Wilcoxon signed rank test. The obtained results were interpreted:

- Non-significant p<0.1 and <0.05.
- Significant p<0.01.
- Highly significant p<0.001.

OBSERVATION AND RESULT
A total of 100 subjects were registered. Among which 86 completed the study while rest discontinued due to various reasons. The study shows that maximum number of students i.e. 74.07% belonged to age group of years 20-30, 96.67% belonged to Hindu religion followed by Muslims, 47.8% belonged to middle class, 53.3% belonged to rural area, 52.2% had Kaphapradhana Pittanubandhi Prakriti, followed by Vatapradhana Pittanubandhi Prakriti, maximum (93.33%) patients belonged to Rajasika Prakriti followed by 6.67% belonged to Tamasika Prakriti. About 55% and 36.67% students reported Adhyashana and Vishamashana respectively. About 78.33% students had no addiction followed by 15% having addiction. The present study reveals that there was no specific trend in relation to the dietary habits. 51.67% of the patients had mixed dietary habit, while 48.33% were purely vegetarians. About 65% had Madhura dominant diet followed by Amla, Katu Rasa dominant diet.

In the Sarvagraha Matra assessment, students consumed Chapatis, rice green leafy vegetable, sunflower oil, milk, bread, pulses generally. Students basically depended on hostel mess for meals.

Effect of restricted diet on Agni n=86

<table>
<thead>
<tr>
<th>Assessment criteria</th>
<th>Diet up to full satisfaction</th>
<th>Restricted diet</th>
<th>W</th>
<th>Z</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruchi</td>
<td>15 days</td>
<td>15 days</td>
<td>-2163</td>
<td>-6.91</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Abhyvaharana Shakti</td>
<td>15 days</td>
<td>15 days</td>
<td>-2226</td>
<td>-6.51</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Jaran shakti.</td>
<td>15 days</td>
<td>15 days</td>
<td>-3662</td>
<td>-7.88</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
The study shows the significant shift of grades of *Ruchi, Abhyvaharana shakti* and *Jarana Shakti* after restricted diet, it was statistically highly significant in all the parameters.

**DISCUSSION**

Results of the present study confirmed that after the regimen of restricted diet or eating on the principle of *Trividikukshiya*, subjects experienced significantly greater *Ruchi, Abhyvaharana shakti* and *Jarana Shakti* compared to eating diet up to satisfaction. This study advocates eating *Matravat Ahara* (leaving 1/3 capacity of *Kukshi* empty) maintains *Samagni*, which in turn is responsible for all proper physiological actions in body. *Samagni* leads to health and prevents diseases. *Samagni* can be understood as proper enzymatic action in gut, proper transformation, absorption and assimilation of food by body.

Diet consumed up to satisfaction is not healthy. Satisfaction or satiety is a sense originated from full stomach. As the food or water fill the stomach the stretch receptors present are stimulated; these signal the brain directly through the vagus nerve connecting gut and brainstem. Hormonal signals are released as partially digested food enters the small intestine. The hormone cholecystokinin (CCK), is secreted by the intestines in reaction to food intake during a meal. The fat cells secrete one more hormone leptin is an indication of adiposity that links with the brain about long-term requirements and satiety, depending upon the energy stores of the body. Research suggests that leptin amplifies the CCK signals, to enhance the feeling of fullness. Therefore by eating too quickly, people eat more quantity in time lapse between signal originated from gut and perceived by brain. People who are obese, suffer from leptin resistance, meaning that they are less responsive to satiety or pleasure signals from this hormone. Thus satisfaction or satiety does not indicate healthy quantity of food.

**Mode of action of Trividhakshiya Ahara**

According to the principles of *Trividhakukshiya*, 2/3rd space is filled with solids and liquids and 1/3rd space in stomach is left empty for the *Dosha Sancharana* capacity is best observed in *Vayu* specifically *Samana Vayu* which is residing near *Agni* and responsible for the process of digestion. The action of peristalsis can be ascribed to *Vayu* in gut. The propelling movements of muscles of stomach that provides prolonged contact period with gastric juice (William Beaumont, 1838). Internal pressure or external pressure results in Interruption of gastric movements. Internal pressure may be produced due to intake of food in large amounts or external pressure due to tight clothes or wrong sitting or sleeping posture. *Matravat Bhojana* (intake of food in proper quantity) prevents the internal pressure and
Rajavat Asana (sitting in comfortable position) prevents the external pressure that help in proper digestion of food. The intake of the food 1/3 less than the capacity ensures the normal peristaltic movements, due to which the proper mixing of digestive juice with food occurs. This aids in proper action of all enzymes in digestion.

Restricted diet concept described in Yogic texts as Mita Ahara, also show positive mental state additional to physical health. According to research the leptin also interacts with the neurotransmitter dopamine in the brain to produce a feeling of pleasure after eating. Overeating leads to increase Tamobhava and Alasya, which in turn prevent Yogi to concentrate and meditate. Restricted diet leads to decrease in calorie intake also, this results in weight loss and prevention of Santarpanjanya Vyadhis and their complications.

CONCLUSION

Intake of Matravat Ahara results in enhancement of Agni shown by shift of grades of Ruchi, Abhyvaharana shakti and Jarana Shakti after restricted diet, it was statistically highly significant in all the parameters. This can help in prevention of disorders like Diabetes mellitus, Obesity etc., which are produced due to derangement of Agni.

REFERENCES

10. William Beaumont Experiments and observations on gastric juice and the Physiology of digestion, 1838; 85: 305–310.