



UNIQUE JOURNAL OF AYURVEDIC AND HERBAL MEDICINES

Available online: www.ujconline.net

Review Article

AHARPARINAMAKARA BHAVA IN PERSPECTIVE OF MODERN PHYSIOLOGY - A REVIEW ARTICLE

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Received 19-06-2014; Revised 14-07-2014; Accepted 10-08-2014

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ABSTRACT

As per Ayurveda, Health is state in which body humors (Vata, Pitta, Kapha), tissue, *Mala*, *Agni* remains in equilibrium. To achieve this one should follow the daily regimen (*Dincharya*), seasonal regimen (*Rutucharya*), dietary ethics. *Aharparinamakara Bhava* (factors for biotransformation) plays vital role in the digestion of the food. These factors are *Usma*, *Vayu*, *Kleda*, *Sneha*, *Kala* & *Samayoga*. *Usma* is principle factor which plays vital role in the process of digestion. It converts the ingested food in their simple form. Other supplementary factors are contributed in this process & cant denied importance of these factors regarding the process of digestion. The main aim of this article is to co-relate this *Ayurvedic* concept in terms of modern physiology.

Keywords: *Aharparinamakara Bhava*, *Ayurved*, Biotransformation, Digestion, *Dhatu*, *Usma*.

INTRODUCTION

The whole world seems to be running in craze of food. Color, life, health, growth, strength, intelligence & all achievement a person enjoy either in this world or the others are all derived from the food & food alone¹. In today's modern era most of the peoples are not at all taking care of him due to stressful life & hectic schedule to fulfill his/ her achievement. All are conscious regarding / pertaining to their own career. To achieve his /her goal they are ignore their own health. One of the major causes to disturb the health is eating pattern that leads to improper digestion. In *Ayurvedic* Classics, there are many rules & regulations laid down for the proper digestion that leads to maintain the normal health. Along with rules & regulations some factors also plays the major role in process of digestion. Modern physiology also gives same direction regarding the proper digestion of the food. In *Ayurvedic* treatises it is described entitled as *Aharparinaman* means ultimate fate of eaten food. If eaten food is as per requisites of the body entities, 'ultimate fate of food facilitates the health'². Otherwise eaten food could be problematic to health. It leads to pathology & develop the various diseases of gastrointestinal tract. *Parinaman* means biotransformation. When food constituents are suitable for bioconversion, & can nourish

body constituents, they are assimilated on the contrary when food constituents are suitable for bioconversion yet are not able to nourish the body constituents, they are not assimilated³. Ingested food is biotransformed into body entities. If food bears qualities facilitating body entities, it is able to nourish & replenish these body entities. If food bears qualities opposite to body entities, such food keeps these body entities ill nourished or sometime such food is capable of killing these body entities. Hence ultimate fate of food is to either facilitate or oppose body entities. Factors which make food undergo 'ultimate fate' are called *Aharparinamakara Bhava*. One of them is principle factor which directly involved in the process of digestion & others are supporting ones. These factors are responsible for biotransformation of the food. When these factors are remains in balanced stage, the digestion takes place properly. Keeping the above concept in mind little effort is taken to co relate the *Aharparinamakara Bhava* in perspective of modern physiology.

MATERIALS AND METHODS

This is conceptual type of research. All sorts of references has been collected and compiled from various available *Ayurvedic* classics texts like *Charak Samhita*, *Sushrutsamhita* and

available commentaries on it. Literature is also compiled from Modern physiology text book. Research article is also searched from various websites related to *Aharparinamakara Bhava*. All matter is analyzed and attempt has been made to draw some conclusions

AHARPARINAMAKARA BHAVA:

The factors which causes the bio transformation of ingested food known as *Aharparinamakara Bhava*. *Aahara* indicate whatever is eaten with mouth or ingested. This word denotes the food items, which is swallowed, fluid or solid. *Parinamakara*- means process of digestion of ingested material. It involves the changing form, structure, & taste of infested material. And finally *Bhava* are concerned with the factors which brings this process. In *Ayurvedic* concept of digestion every food particles undergoes common path of three stages. Each of these three stages through which every particle has to pass while getting digested is called as *Avasthapaka*. When food is ingested it has to be digested to get absorbed. This is achieved with the help of *Aharparinamakara Bhava*. These factors are six in numbers & they are *Usma*, *Vayu*, *Kleda*, *Sneha*, *Kala* & *Samayoga*⁴. As mentioned above among these one is principle factor which directly involved in the process of digestion known as *Usma* while remaining five are in supporting role in the process of digestion.

1. Usma

First factor among these are *Usma* which is important one. In conversion of complex food into absorbable products, *Usma* is directly concerned with food digestion⁵. The bio energy of the body is *Agni*. It converts food in the form of energy which is responsible for all vital function of living creature's. In various text the term *Usma* has been described by various word like *Jathargani*, *Anatragni*, *Kosthagni*, *Kayaagni*, *Pachakaagni* which carry out the digestion.

Usma in body is parallel to *Tejamahabhuta* (fire) in the universe. According to *Lokpurusha* law, everything that exists in universe is represented by same entity in living body & its function in same way. Hence *Tejamahabhuta* (fire) is represented by *Agni (Usma)* in living body. Fire cooks, burns, transforms the structure of matter, changes the properties of matter. Similarly *Agni (Usma)* in body digest, helps in absorption of digested material, transforms the digested food into body entities, replenishes the *Panchbhautic* components existing in special senses & does such other many deeds.

Similar thought is read in Modern Physiology of digestion. Maintenance of temperature in digestive tract is extremely important for digestion. Digestive enzymes needs typical temperature & appropriate pH in gastrointestinal tract without which digestion becomes impossible. The following table shows the daily secretions of intestinal juice & pH required for it which is responsible for the proper digestion⁶.

2. Vayu:

Second factor is called as *Vayu*. It is supplementary factor but role of this factor is also important for the process of proper digestion. *Vayudrags* the food to proper place where *Agni* actually exists. Not only has this *Samanvayu* added to stimulate the *Agni*. This again is another help to digestion of food. Supplementary function of *Vayuto* induce the necessary movements in GI tract & to induce secretion of enzymes in GI tract. For propelling the food to the next organ *Samanvayu*

plays an important role. *Apanvayu* excrete the unwanted substance which is formed during the process of digestion.

Similar thought is read in Modern Physiology of digestion. Movements of stomach, small intestine are in accordance to presence or absence of food, they are in accordance to facilitate & smoothen down the digestive function. The movement of food from mouth into stomach is achieved by act of swallowing or deglutition⁷. The movements of stomach are hunger contractions, receptive relaxation & peristalsis. The movement of small intestine essential for the mixing of chime with digestive juice, propulsion of food & absorption. While at the large intestine two types of movements occurs i.e. mixing movements & propulsive movements⁸.

3. Kleda

The third factor is called as *Kleda* & again its necessary supplementary as it helps in disintegrating coarse food material in to fine particle. *Kleda* is moisture. In digestion this moisture provided by *Kledakkapha* in stomach or in *Aamasaya*. *Kledakkapha*soaks all the food material weather taken with fluid or dry & makes a fine paste of chewed food in stomach. *Kleda* is responsible for the disintegration of food to form a soft mucilaginous part of digestion as owing to this process the food particle is divided in small particles & the food stuff become easily assimilable⁹.

Similar thought is read in Modern Physiology of digestion. Food coming from stomach is already in fine state. This is due to churning movement of stomach as well as mucus in stomach. Duodenal sphincter does not allow coarse food to enter several minutes after the food enters the stomach, gentle rippling, peristaltic movements called mixing waves pass over the stomach every 15 to 25 second. These waves macerate the food mix with the secretion of gastric gland & reduce it to soupy liquid called chime¹⁰.

4. Sneha

The fourth among these factors, *Sneha* makes the food soft & slimy. *Sneha* is in context to softness brought to food. Describing the rule for taking the food, *Charak* has narrated the utility of unctuous (snigdha) food. *Charaksamhita* guides that one should take unctuous food as it is delicious & after intake provokes subdued power of digestion. The unctuous food gets digested quickly as fatty material helps in downward movement of *Vata*¹¹.

Similar thought is read in Modern Physiology of digestion. Mucus in a G.I. tract functions in the same way¹².

Table 1: Daily Secretions of Intestinal Juice.

Name of digestive juice	Daily volume	pH
Saliva	1000	6.0-7.0
Gastric Secretion	1500	1.0-3.5
Pancreatic Secretion	1000	8.0-8.3
Bile	1000	7.8
Small intestine Secretion	1800	7.5-8.0
Brunner's gland Secretion	200	8.0-8.9
Large intestine Secretion	200	7.5-8.0

5. Kala

Fifth amongst these factors, *Kala* is considered in this context as time required for digestion. However efficient enzymes are, however effective movements are, food must get certain

period to get digested. Commentator state that meaning of *Paraypta*. It is true that *Usma* is necessary factor & inevitable one for digestion. Yet only appropriate quantity of *Usma* is not enough for digestion of food. Allotment of necessary time is equally required. This spell out the importance of time factor in the process of digestion.

Similar thought is read in Modern Physiology of digestion. Retention of food for purpose of admixture with enzyme & allied appropriate movements of G.I. tract are described in detail in modern physiology. After swallowing, the food stuff required about two hours to retain in stomach where digestive juices & movements of stomach change the material in semi digested & liquefied form. The small intestine retain the material for four to five hours then slowly it enters in to large intestine¹³.

6. *Samayoga*

Sixth amongst the factor *Samyoga* is healthy combination of food items. It includes *Aharavidhiveseaayatana*(specific consideration for dietary rules), *Aharavidhividhan*(rules for intake of diet) etc. are to be observed for appropriate administration of the food. *Samyoga* is one important factor which plays an effective role in transformation of food as it brings about equilibrium of *Dhatus*, which is super most object of *Ayurveda*. If food items are mixed with wrong way or in a wrong proportion or cooked in wrong blending, food becomes unhealthy for human G.I. tract.

Similar thought is read in Modern Physiology of digestion. Some dietary ethics, rules & regulations should be follow to improve the process of digestion.

CONCLUSION

From above literature its concluded that factors mentioned above directly concerned with the process of digestion. One factor *Usma* participating genuinely for bioconversion & other factors supporting to it. If these factors remains in normalcy it brings about the equilibrium of *Dhatu* maintain the homeostasis of the body. Finally it shows that *Aharparinamakara Bhava* can co relate in terms of modern physiology.

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Source of support: Nil, Conflict of interest: None Declared