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ANCIENT REVIEW ON CONCEPT OF AGNI

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ABSTRCT-

In Ayurveda the concept of agni and ahara paka (Metabolic transformation) provides an extensive field of research in the present day. Ingested food is to be digested, absorbed and assimilated, which is unavoidable for the maintenance of life, and is performed by the Agni. . Agni has got similar function to that of pitta in aspects of digestion and metabolism. Jatharagni Paka (Gastro intestinal digestion) is described as Avasthapaka in Ayurveda. *Jatharagni* plays a key role in digestion of food-stuffs composed of the five basic elements and transforms it for utilization by the respective tissues . About the importance of *Agni*, Acharya Charak has mentioned that after stoppage of the function of *Agni*, the individual dies, and when the *Agni* of an individual is sama, then that person would be absolutely healthy and would lead a long, happy, healthy life. But, if the *Agni* of a person is vitiated, the whole metabolism in his body would be disturbed, resulting in ill health and disease. Hence, *Agni* is said to be the base (*mool*) of life.

KEYWORDS- AGNI, AHARPAKA, BHUTAGNI, DHATVGNI ,JATRAGNI, DIGESTION AND METABOLISM

INTRODUCTION-

Health is the state of mental and physical well being of a person . According to ayurveda ,when dosa, dhatu and mala are in sama awastha, indriya aatma ,mann all are working properly then the person is considered as swastha. For dosha dhatu and mala to be in the state of proportionality Agni should be normal (samagni).When agni inside the body get extinguished then body (shareer) is considered as dead. •As far as agni inside the body remains in sama avastha , person live long and healthy life without any ailment or disease.The Sanskrit word Agni mean “fire”. Darshan said that,all things in universe made from mahabhuta. Agni is one of the Mahabhuta out of five panchamahabhuta. In jain literature it is called as soul. In pali language agni called as Aggi, which show impact of agni concept on Buddhist tradition also. veda described agni itself is god. In Ayurveda there is a lot of importance on concept of Agni. As agni in nature same agni in our body too. Agni converts food in the form of energy, which is responsible for all the vital functions of our body. Therefore, Ayurveda considers that Dehagni is the cause of life, complexion, strength, health, nourishment, lusture, oja, teja (energy) and prana (life energy)¹. Agni maintains pakadi karmas but pitta maintains dhi, buddhi, body maintenance in addition to pakadi karmas. Ghrita causes agni vrudhhi and pitta shamana. Pitta has got wider aspect of functions apart from agni functions. All the 13 categories of agni are key factors in transformation of consumed ahara viharadi dravya of vijatiya origin to sajatiya nature. Agni and Pitta The term Pitta is derived from "tapasantape" ² . Pitta is the factor, which regulates all the thermo dynamics, Chemo dynamic activities in the body, in which function of agni are a part ³ . Agni within the body represented by heat of the pitta. In normal state it brings proper digestion, Vision, joy, happiness, maintains normal bodily heat and normal complexion. In abnormal state it brings indigestion, loss of vision, fear, anger, bewilderment, abnormal bodily heat and abnormal complexion ⁴ .

METHODS AND MATERIALS-

Agni and pitta both have few similarities and dissimilarities. The similarities of agni and pitta are dahana, pachana karmas and similar response to sheetala, ushna. Both are possessing qualities of agni mahabhoota. The Dissimilarities are, agni is sushka and ruksha in nature, Pitta is drava and snigda. Agni maintains pakadi karmas but pitta maintains dhi, buddhi, body maintenance in addition to pakadi karmas. Ghrita causes agni vrudhhi and pitta shamana. Pitta has got wider aspect of functions apart from agni functions Avasthapaka is the change in the state of food substance in the amashaya and pakwasaya in the course of digestive process. In avasthapaka there are two phases called prapaka and vipaka. Prapaka phase contains three phases, Madhura Bhava, Amla Bhava and Katu Bhava . ⁵

TYPES OF AGNI ACCORDING TO ACHARYAS:-

Author	No.	Name	Reference
Acharya charaka	13	Jatharagni-1,Bhutagni-5,Dhatvagni-7	Ch.Chi.15/38).[8]
Acharya	5(agni)	Pachak,Ranjak,Sadhak,Bhrajak,Alochak	(Sh.Su.21/10.)[9]

<i>Sushruta</i>			
<i>Acharya</i> <i>Vagbhata</i>	18	<i>Bhutagni-5, Dhatvagni-7, Doshagni-3, Malagni-3</i>	(<i>Sha.Sa.Pu.Kh.-5/32</i>).[10]
<i>Sharangadhara</i>	5(<i>pitta</i>)	<i>Pachak, Ranjak, Sadhak, Bhrajak, Alochak</i>	
<i>Bhavamishra</i>		<i>Same as Acharya Charaka & Vagbhata</i>	(<i>Bh.Pu.Kh.-3/169,180</i>).[11]

Detailed Study of *Jatharagni*, *Bhutagni*, *Dhatvagni*- The strength of the *Grahani* is from *Agni* itself, and the strength of *Agni* is from *Grahani*. When the *Agni* undergoes vitiation, *Grahani* also gets vitiated and produces diseases ⁶

1. *Jatharagni* is the *Agni* present in the *Jathara*. *Jathara* stands for the stomach and duodenum. As per *Ashtanga Hridaya*, seat of *Jatharagni* is *Grahani* (duodenum). The name *Grahani*, as it holds the food for certain amount of time inside the *Amasaya* (stomach) in order to initiate digestion. *Jatharagni* is the main important *Agni* that controls the function of all other 12 *Agnis*. All the *Agnis* are totally dependent on the status of *Jatharagni* ⁷ *Jatharagni* is considered to be the prime because each and every nutrient that one ingests first comes to the stomach and duodenum and is subjected to the action of *Jatharagni*.

Jatharagni plays a key role in digestion of food-stuffs composed of the five basic elements and transforms it for utilization by the respective tissues.

. *Jatharagni Paka* (Gastro intestinal digestion) is described as *Avasthapaka* in Ayurveda. *Avasthapaka* is the change in the state of food substance in the *amashaya* and *pakwasaya* in the course of digestive process. In *avasthapaka* there are two phases called *prapaka* and *vipaka*. *Prapaka* phase contains three phases, *Madhura Bhava*, *Amla Bhava* and *Katu Bhava*. *Madhura Bhava* in the *Adho Amashaya*: This phase commences from the entry of food into the mouth. Propulsion of food from the mouth to the *Urdhva amashaya* is brought by *Prana Vayu*⁹ (One type of *Vata dosha* out of five types, *Prana*, *Samana*, *Vyana*, *Udana*, *Apana*). This aspect of digestion in the upper portion of *Urdhva amashaya* is comprehended by *Madhura bhava*. The process of digestion, especially the fraction of it commences in the mouth, under the influence of *Bodhaka Kapha*. *Bodhaka Kapha* is one type of *Kapha* out of five types (*Kledaka*, *Avalambaka*, *Tarpaka*, *Bodhaka*, *Sleshaka*) responsible for taste perception, equalant to saliva. This stage of digestion is reminiscent of salivary digestion and completed in the fundus of stomach. The insoluble starch polysaccharides are converted to soluble dextrin, under the influence of salivary amylase (*ptyalin*). Salivary amylase action is *bhinnasamghata* (spitting) brought about by hydrolysis¹⁰. The final *rasa* (taste) of the resultant product in the upper portion of the *Urdhva amashaya* (fundus of stomach) is *Madhura* and completed in the *Urdhva amashaya* (fundus of stomach). The insoluble starch polysaccharides are converted to soluble dextrin, under the influence of salivary amylase (*ptyalin*). Concept of *Bodhaka Kapha* is parallel to saliva secreted by the salivary glands.

The action of Bodhaka Kapha on food, converts insoluble madhura portion to soluble and mixes up with the frothy Kledaka Kapha (mucous) present in Urdhva amashaya¹¹. Amla bhava of Avasthapaka in pachyamanashaya: Digestion of proteins and fats occur in this stage by Pachaka pitta (HCl) secreted by the cells of the mucus membrane of the stomach. This makes the commencement of the Amlabhava or the acid (sour) phase of prapaka. This Paka (digestion) involves the conversion of insoluble proteins into the soluble ones under the influence of enzyme pepsin in the presence of HCl. This aspect of prapaka does not seem to have anything to do with the digestion of the end products of Madhura Paka⁹. The outcome of this phase is acidified chyme. It is in pakwapakwam stage (not fully digested). It has to go for further digestion in adho amashaya. The partly digested food which has attained amlabhava is moved down and stimulates the humoral mechanism in Adho Amashya and discharge of Achcha Pitta into it. Achcha pitta (pancreatic juice) is secreted. The concept of achcha Pitta includes the gall bladder, bile and pancreatic secretions, responsible for digestion of fats, proteins and carbohydrates. Acidified chyme passes down from the pylorus to the duodenum. It stimulates the Brunner's (duodenal) glands to secrete a number of intestinal juices. These are responsible for bile and pancreatic secretion to the duodenum for further digestion of partly digested carbohydrates, proteins, and fats of the chyme. The Katubhava of Avasthapaka in Pakvashaya: It is the third phase of Avasthapaka describes the events in the pakwashaya (large intestine) leading the formation of faeces and gases. This aspect relates to the acrid and pungent (katu) nature of reactions that occur in the large intestine. The material passed down from the amashaya and reached the pakwashaya, is dehydrated (soshyamana) and converted in to lumps by heat, an acrid and pungent¹⁰. The foregoing modern contribution is seen not only to confirm but also amplify the ancient Ayurvedic version of events that take place in the large intestine and the formation of feces with production of pungent Vayu. Vipaka: Post-Digestive Effect The ultimate change in the ahara rasa that occurs at the end of digestion of Jatharagni paka is called as Vipaka. According to Acharya Charaka, the six rasas yield three kinds of Vipaka. Madhura and Lavana rasa yield Madhura vipaka (sweet). Amla Rasa to Amla Vipaka (sour). Katu, Tikta, Kasaya Rasa to Katu Vipaka (acrid, pungent). Secondary Digestion – Metabolism: The Bhutagni paka and Dhatvagni paka comes under Secondary Digestion and Metabolism. Bhutagni paka Bhutagni is the one that is present in a basic element (Bhutas). There are five Agnis in each of the five basic elements, namely, Parthiva (earth), Apya (water), Tejas (Agni), Vayavya (vayu) and Nabhasa (akash). Each and every cell in our body is composed of the five mahabhutas (panchabhoutika). Each cell (dhatu paramanu) consists of these five bhutagni also. All the nutrients in this world that we eat also consist of the same five basic elements with their respective agni. Thus, they are completely similar with respect to the five basic elements with their bhutagni in our body cells as well in the entire outside nutrient that we ingest for the nutrition of our body. The panchabhoutika sharira is to be maintained and nourished with the bahya panchabhoutika amshas. To convert such alien amshas to part of the body there exists a process of paka (Metabolic transformation), which is attributed to Bhutagni.

Jatharagni separates food material into the *sara* (essence portion) and *kitta* (waste products) in the human body. *Jatharagni* is also classified in to four categories according to its performance of digestion in the human being namely,

Vishamagni, tikshanagni, Mandagni and Samagni.

A. Samagni- Normal digestive fire is characterised by strong and appealing appetite that is easily satisfied with normal food. Digestive functions are proper; there are no episodes of gas, colic and constipation. It digests and assimilates food properly at the proper time. This thus increases the quality of the *Dhatus* (supportive tissues of the body).

B. Vishamagni(Variable) Here the digestive fire is disturbed by influence of *vata dosha*. Because of variability in *vata*, there are episodes of alternating cycles of strong appetite with loss of appetite and forgetfulness to consume foods. This type of *Agni* changes between digesting food quickly and slowly. It creates different types of *udargata roga*.

C. Tikshnagni(High) Here the digestive fire is disturbed by influence of *pitta dosha*. In these cases, *agni* is usually high and both *pitta* and *agni* share same properties. In these cases, immunity against diseases is good. Because of variability in *pitta*, there are episodes excessive appetites. *Tikshnagni* means very quick/very sharp/very fast. *Acharya Shushrut* states that when the power of digestion is increased from normal to above normal, food digests very quickly and produces hunger or the desire for food. When food is digested, the throat, the mouth cavity and the lips become dry with a burning sensation. This condition is known as "*Bhasmak Roga*" according to *Ayurveda*.

D. Mandagni(Low) "*Mand*" means slow. Here the digestive fire is disturbed by influence of *kapha dosha*. Because of variability in *kapha*, there are episodes of poor appetite, sluggish metabolism and tendency to weight gain despite optimal food consumption. Excessive mucus or phlegm production and congestion are striking features. The meaning of the *Mandagni* is slow digestive power or digestive capacity. Those who are having *Mandagni* eat very little and are unable to digest the smallest amount of food. Lord *Dhanvantri* says that *Agni* digests the least amount of food in the greatest amount of time.

According to *Hareet Samhita*, *Samagni* depends on whether the *Doshas* (*Vata, Pitta, Kapha*) are in normal stage. When the *Pitta* is higher than normal, the condition is known as *Tikshnagni*. When *Vata* and *Kapha* are higher than normal, the condition is known as *Mandgni*

2. Five bhutagni are fine and subtler *agnis* located in the five *mahabhutas*. These *agnis* are responsible for the molecular metabolism and help in synthesis and break down of materials at molecular level. These represent the **catabolic processes** in our body. There are five *Agnis* in each of the five basic elements, namely – *Parthiva* (earth), *Apya* (water), *Tejas* (Fire), *Vayavya* (Wind) and *Akasha* (sky).

The five Bhutagnis digest their own part of the element present in the food materials. After the digestion of food by the bhutagni, digested materials containing the elements and qualities similar to each bhutas nourish their own specific bhoutika elements of the body. So, all the exogenous substances must be subjected to Bhutagni paka to become endogenous. Thus cause appropriate nourishment of tissues. In the modern physiological perspective, the action of the Bhutagni paka can be equated with the conversion of digested materials in the liver. The Vitamins, Essential amino acids, Essential fatty acids are to be supplemented

essentially through the food for the conversion of concerned molecules in to the body tissues on to yield energy . Thus the essential factors supplemented through food for the synthesis of this panchabhoutika sharira can be considered as Bhutagni amshaas, i.e. Vitamins, Essential amino acids, Essential fatty acids. The process of Bhutagni paka should start immediately after digestive process in GIT. Hence Bhutagni function starts immediately after absorption i.e. portal circulation to the liver ends before assimilation by delivering asthaya dhatwamshas into the circulation through hepatic vein. So the Bhutagni functions are carried in the portal system, liver and vascular system through which ahara rasa is circulated in the body for nourishing the rasadi sapta dhatus. Hence liver is considered as centre of Bhutagni vyapara . According to the physiology of Ayurveda, Bhutagni paka follows jatharagni paka and it completes the process of intestinal digestion. After completion of Bhutagni paka only, the formation of ahara rasa is completed and rasa absorption is possible. .

In the modern physiological perspective, the action of the Bhutagni paka can be equated with the conversion of digested materials in the liver. The Bhutagni paka and Dhatvagni paka comes under Secondary Digestion and Metabolism. Bhutagni paka Bhutagni is the one that is present in a basic element (Bhutas). Each cell (dhatu paramanu) consists of these five bhutagni also. All the nutrients in this world that we eat also consist of the same five basic elements with their respective agni. Thus, they are completely similar with respect to the five basic elements with their bhutagni in our body cells as well in the entire outside nutrient that we ingest for the nutrition of our body. The five Bhutagnis digest their own part of the element present in the food materials. After the digestion of food by the bhutagni, digested materials containing the elements and qualities similar to each bhutas nourish their own specific bhoutika elements of the body. So, all the exogenous substances must be subjected to Bhutagni paka to become endogenous. Thus cause appropriate nourishment of tissues .

3. Seven dhatu agnis are responsible for the **formation of tissues (dhatus)** and participate in the specific tissue metabolism. The *dhatvagni* represent the entire range of **anabolic processes** functioning in the respective tissues. **Acharya Charaka** has mentioned the fact that that the seven *dhatus* that are a support system of the body contain their own *Agnis*, and by its virtue they digest and transform the materials supplied to them to make the substances alike to them for nourishment ⁸

1. *Rasadhatu (nutrient fluid) – Rasagni.*
2. *Rakta dhatu (blood tissue) - Raktagni.*
3. *Mamsa dhatu (muscle tissue) - Mamsagni.*
4. *Medas dhatu (Adipose tissue) – Medo agni*
5. *Asthi dhatu (Bony tissue) – Asthyagni.*
6. *Majja dhatu (Bone marrow and nervous tissue) – Majjagni*
7. *Sukra dhatu (Reproductive tissues including sperm and ovum) – Sukragni*

Dhatvagni – Tissue metabolism that which promotes the growth of sharira (body) is dhatu. Each dhatu is of two kinds, Asthayi (mobile or non static) or poshaka (meant to nourish) and Sthayi (fixed, sthira, static, already formed and existing) or poshya. Srotamsi do not transport Sthayi (poshya) dhatus. Dhatus are formed consecutively, one after another, from the Poshaka or asthayi dhatus. After Jatharagni paka and Bhutagni paka adya ahara rasa (chyle) circulates in the body to reach all tissues. The circulating constituents of ahararasa were selected by dhatu (tissue) through kalekapotha nyaya (law of selectivity - analogy of the pigeons carrying grains from a thrashing field and flying out in different directions). Hence if Dhatvagni gets more vruddhi, tissue delivers more action and there by more catabolic activity (Dhatu kshaya). If Dhatvagni is of low profile only tissue synthesis takes place resulting in dhatuvruddhi.

Functions of Dhatvagnis are mainly two. One is synthesis of new tissue. Second is to yield energy for the function of tissue. If Dhatvagni is impaired both of these will impair. Seven categories of agnis, & dhatus undergo metabolic transformation in two different ways for the sustainers of the body. One is Prasada paka and another is kitta paka. The Prasada paka is stated to yield the seven kinds of poshaka or Asthayi dhatus. kitta paka is the waste products. The nutrient fraction of rasa (plasma) provides nourishment to rakta (blood), that of rakta (blood) to mamsa (muscle tissue), that of mamsa to medas (fat), that of medas to asthi (bone), that of asthi to majja (bone marrow), and the nutrient fraction of majja provides nourishment to shukra. The foetus (garbha) is the product of nutrient fraction of Shukra. Each one of the seven kinds of poshaka or Asthayi dhatus is stated to be transported, as it is formed, to the respective poshya (sthayi) dhatus, through srotas (channels), specific to each such sthayi dhatu for being built up as part of the latter. These srotas are known as dhatuvaha srotamsi. These srotas are seven (Rasa vaha srotas, raktavaha srotas, mamsa vaha srotas, medo vaha srotas, asthi vaha srotas, majja vaha srotas, shukra vaha srotas) in number. The nutrient fraction of Rasa, Rakta, Mamsa, Medo dhatus helps in formation of Upadhatus (subsidiary tissue).

DISCUSSION -Agni converts food in the form of energy, which is responsible for all the vital functions of our body. In the first stage of digestion madhura bhava is manifested by the action of salivary amylase on starch, digestion of carbohydrates occur into simpler forms (glucose) rendering it fit for absorption. In the second stage of digestion amla bhava is manifested by release of Accha pitta (bile/pancreatic secretions) resulting into acidified chyme formation in Urdhva amashaya (fundus of stomach) and pylorus of stomach. In parallel to modern physiology, digestion of proteins and fats occur in this stage resulting into simpler forms, i.e., amino acids and free fatty acids. In the third stage of digestion the absorption of nutrients occurs in the large intestine and formation of feces with production of pungent vayu (Katu bhava) occur. The ahara rasa which is having madhura and lavana rasa gets Madhura vipaka, amla rasa gets Amla Vipaka, Katu, Tikta, Kasaya rasa gets Katu Vipaka. Bhutagni, ignited by Jatharagni transforms the Vijatiya Annarasa into Sajatiya Poshaka dhatus (organism specific). After Jatharagni paka and Bhutagni paka adya ahara rasa (chyle) circulates in the body to reach all tissues. Dhatus that are formed consecutively, one after another, from the Prasada bhaga as Poshaka or asthayi dhatus. Kittabhaga is eliminated out as metabolic waste product. Ayurveda signifies its relevance with modern physiology of digestion and metabolism thus providing an extensive field of research and scientific status in the present scenario.

CONCLUSION-

Agni means it is a substance responsible for digestion and metabolism. Ayurveda signifies its relevance with modern physiology of digestion and metabolism thus providing an extensive field of research and scientific status in the present scenario. Dhatus that re formed consecutively, one after another, from the Prasada bhaga as Poshaka or asthaya dhatus. Kittabhaga is eliminated out as metabolic waste product. Agni is the invariable agent in the process of ahara paka (metabolic transformations). Ingested food is to be digested, absorbed and assimilated, which is unavoidable for the maintenance of life, and is performed by the Agni. . Due to faulty *agni* status, a number of unripe, undigested or unmetabolised by-products are formed and have tendency to block the micro channels of the body, thus resulting in accumulation of *doshas* (morbid matters) and finally precipitate in the form of disease *Ayurveda* emphasizes that most of the diseases are the by-product of *agnidushti* that is why the main principle of treatment of all diseases in *Ayurveda* is to restore and strengthen the *agni* (digestive and metabolic fire).

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