

## ANALYTICAL REVIEW OF AGNI (DIGESTION AND METABOLISM) IN AYURVEDA

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### ABSTRACT

The human body is made of five elements i.e. *akasha*, *vayu*, *agni*, *jala* and *prithvi*.<sup>[1]</sup> *Agni* as pondered upon in *ayurveda* is related with digestion, metabolism, assimilation & thermoregulation. All the metabolic processes leading to genesis of body tissues are the outcome of *Agni*. The balanced state of *agni* is a prime factor of health. The derangement of *agni* leads to production of diseases of nutrition, digestion and metabolism. The normalcy and abnormalcy of the *jatharagni* influences all other *agnis* in the body. *Agni* is responsible for nourishment of the body tissues, lustre and immunity, maintenance of body temperature, strength and capacity to do even difficult work, total health and vital force. So the functions of *agni* are mainly digestion of food, production of energy, temperature regulation and proper nourishment of body tissues.

**KEYWORDS:** *Jatharagni*, *Bhutagni*, *Dhatwagni*, digestion, metabolism, *Ayurveda*.

### 1. INTRODUCTION

The term “*Agni*” literally means fire. But here in the context of human body it does not actually mean fire. In *Ayurveda*, the concept of *Agni* is directly linked up with the biological *Agni* in form of *pitta* inside the human body. As per sage *Charaka*, the living body is a product of food and nutrition.<sup>[2]</sup> The *dosha*, *dhatu*s and *malas* require food for their formation, maintenance or functioning of various physiological actions in the body.<sup>[3]</sup> The food substances which are ingested are not similar to the tissues of the human body. So the food must be converted in such a manner that it is absorbed into the system to reach every cell of the body. This conversion of food substance at different levels in various ways till they

become tissues of the body is brought about by the *Agni*. It means without *Agni*, there is no tissue building and hence no life.<sup>[4]</sup> The vitiation of *Agni* by various *dosha* causes diseases and its loss may lead to death also. Thus *Agni* is considered as root cause of the body.<sup>[5]</sup> The balanced state of *Agni* in the body is one of the parameters of health besides balanced *dosha*, *dhatu* and *mala*.<sup>[6]</sup> Acharya Sushruta has praised *agni* as GOD. This *agni* is *parama sukshma*<sup>[7]</sup> and transforms the food substance just to suit the physiological requirements of the individual.

## 2. TYPES OF AGNI ON THE BASIS OF LEVEL OF ACTION

There are 13 types of *Agni* present in the body. These are *Jatharagni*; five types of *bhutagni*<sup>[8]</sup> (*parthivagni*, *apyagni*, *taijasagni*, *vayavyagni*, *nabhasagni*); and seven types of *dhatwagni*<sup>[9]</sup> (*rasadhatwagni*, *rakatdhatwagni*, *mamsadhatwagni*, *medodhatwagn*, *asthidhatwagni*, *majjadhatwagni* and *shukradatwagni*).

### 2.1 Jatharagni

The term '*jathara*' means *udara* (abdomen). Due to presence in the region of *jathara* (abdomen) it is called as *jatharagni*. It is the primary and most important *Agni* among these 13 types of *Agni*. It is so, because *bhutagnis* and *dhatwagnis* are under direct control of *jatharagni*.<sup>[10]</sup> The normalcy and abnormalcy of this *Agni* influences all other *agnis* in the body.<sup>[11]</sup> This is also called as *pachaka pitta*. Being composed of *pachmahabhoota* pitta is dominant in *tejas* or *agni* and when it is devoid of *drava guna*, it is known as *anala* or *agni*.<sup>[12]</sup> *Kosthagni*, *kayagni*,<sup>[13]</sup> *antragni*, *pachakagni*<sup>[14]</sup>, *dehagni*<sup>[15]</sup>, *audarya*, *tejas* are its synonyms. The site of this *Agni* is in the *grahani*.<sup>[16]</sup> (duodenum).

### Functions of jatharagni

The main function is to digest all the food substances which we take in the form of *chavya* (chewable), *choshya* (masticable), *lehya* (licked) and *peya* (drunk).<sup>[17]</sup> The primary function of conversion of complex food particles into simpler ones and formation of stool is carried out by *jatharagni*. *Agni* is responsible for *swasthya* (total health), *utsaha* (capacity to do even difficult work), *upachaya* (nourishment of the body tissue), *prabha* (lustre), *ojas* (immunity), *teja* meaning *deha ushma* (body temperature), *prana* (vital force). So the functions of *Agni* are mainly digestion of food, production of energy, temperature regulation and proper nourishment of body tissues. It also controls the functions of *bhutagni* and *dhatwagni*.

**Jatharagni according to strength of digestion<sup>[18]</sup>**

*Agni*, on the basis of its strength or digestion power is said to be of four types –*samagni*, *vishamagni*, *tikshnagni* and *mandagni*.

- The *samagni* is not affected by *doshas*. It digests the food properly in due time and is balanced because of balanced state of *doshas*.<sup>[19]</sup> As per *Caraka* in case of *apchara* (altered food habits, intake of improper or heavy diet) it may get vitiated and otherwise it remains to be in normal state. So, it should be protected.
- *Vishamagni* is a state when *agni* is affected by *Vata dosha*. Sometimes it digests the food properly and on the other times it causes *adhamana* (distension of abdomen), *shula* (pain in abdomen), *udavarta* (belching), *atisara* (diarrhoea), *jathargaurava* (heaviness in abdomen), *antrakujana* (borborygmi), *pravahana* (need to strain while defecation).<sup>[20]</sup> As per sage *Cakrapani*, sometimes it is affected by *visham apchara* (alteration in diet) and sometimes not.<sup>[21]</sup>
- *Tikshnagni* is a state when *Agni* is affected by *pitta dosha*. In this condition the food taken even in excessive amount gets digested without any difficulty and in a short time. It is capable of digesting any type of food.<sup>[22]</sup> When *tikshan agni* is increased, it is known as *atyagni* and it can digest more quantities of food taken frequently and very quickly followed by *shosha* (dryness of mouth), *daha* (burning sensation) and *santapa* (raised temperature) in buccal cavity at the end of digestion.<sup>[23]</sup>
- *Mandagni* is a state when *Agni* is affected by *kapha dosha*. In this condition digestion of food ingested even in less quantity is not possible and it may lead to *udara* and *shiro gaurava* (heaviness in abdomen and head), *kasa*(cough), *shwasa* (dyspnoea), *presaka* (drooling), *vaman* (vomiting), and *gatrasadana* (laziness in body). Time taken to digest the food is also very high.

*Vishamagni*, *tikshnagni*, *mandagni*, leads to *vatajanya roga*, *pittajanya roga* and *kaphajanya roga* respectively.<sup>[24]</sup> *Vishamagni*, *tikshnagni*, and *mandagni* cause diseases and hence require treatment. *Samagni* is responsible for health and should always be protected.<sup>[25]</sup>

**2.2 Bhutagnis<sup>[26]</sup>**

There are 5 types of *bhutagnis* in the body.

- a) *Parthivagni*
- b) *Apyagni*
- c) *Taijasagni*

d) *Vayavyagni*

e) *Nabhasagni*

After the digestion of food by *jatharagni*, the *bhutagni paka* starts. The body is composed of five *mahabhutas* (five elements) and the food also contain the five *mahabhutas*.<sup>[27]</sup> The *jatharagni* digests the whole of the food mass into a common digested substance, the *bhutagni* act on this substance (which contain 5 *bhutas*) by their respective parts (like *parthivagni* acts on *parthivansha* part of food, *apyagni* act on *apyansha* parts of food and so on) & convert them into the respective *bhutadravyas* useful for the formation of different *dhatas*.<sup>[28]</sup> This means that *bhutagnis* are specific in nature. The specific constituent of food is broken down by specific type of *bhutagni*. So for complete and proper digestion of food *jatharagni* and *bhutagni* play very important role.

It is clear that, the digestion of food by *jatharagni* leads to the reduction of basic food stuffs to elemental substances which from the point of view of their physicochemical properties are classed under the 5 *bhautika* Groups i.e. *parthiva*, *apya*, *agneya*, *vayavya* and *akasha*. In the course of *bhutagni paka*, the *agni* present in the molecules of each group viz. the *parthivagni* in the *parthiva* group, *apyagni* in the *apya* group, and so forth is stated to digest the entire molecules leading to a complete change in its (*Vailakshanagunas*).<sup>[29]</sup> Thus food substances are rendered fit for being assimilated into and built up as part of the corresponding *bhutas* class of substance present in the *dhatas*. This process of assimilation is stated to be mediated by the seven *dhatwagnis*.

*Jatharagni paka* results only in the breakdown of complex substances into their elemental forms which still continue to be nonhomogeneous in nature. *Bhutagni paka* is required to process & convert them suitably as pre-homologues of substances which compose the seven *dhatas*. Otherwise the assimilation of the former into the latter may not be possible. In other words the qualities or properties present in the food substance are activated by *jatharagni paka* and then actualised by *bhutagni paka* in the final stages of digestive process.

### 2.3 *Dhatwagnis*

After the *bhutagni paka* in the food substance, the *dhatwagni paka* starts. *Dhatwagnis* are seven in number corresponding to seven *dhatas* i.e. *rasa*, *rakta*, *mansa*, *meda*, *asthi*, *majja*, *shukra*. After transformation of *bhutanasha* of food into *sharirabhutas*, they have to get converted into *sharira dhatas* (body tissues) which require *dhatwagni paka*. The processed

nutrients provided by the *bhuagni paka* are taken up for *dhatwagni paka*. The *dhatwagnis* then act upon the concerned nutrients circulating as *poshakansha* in the diet and result in the production of *prasadakhya dhatus*, *updhatus* (different body tissues), and *malakhya dhatus* (various by-products).<sup>[30-31]</sup>

The *Prasada* fraction is then transported by *rasa, rakta* (circulating blood) and made available to the *dhatus* through their respective channels. They are utilised by the *dhatus* to make up the loss sustained by them due to wear & tear. The *kitta* fraction contributes in part to the formation of various kinds of excrements and in part to the nourishment and synthesis of some structures of the body such as hair and nails. The *Prasada* fraction of the *dhatwagni vyapara* is divided into two parts- formation of *poshaka dhatus* and *updhatus*. The *poshaka dhatus* are utilised for the formation of *sthira dhatus*.

The *dhatwagni vyapara* may be considered to take place mostly in the liver. The final synthesis and metabolism of *asthaya dhatus* (nutrients in circulation) into *sthaya dhatus* (different body tissues) take place in the *dhatus* themselves.<sup>[32]</sup>

### 3. CONCLUSION

Understanding and analysing the basic principles and putting forth age old theories in the light of current era is of dire necessity for any ancient science. The concept of *agni* is one of such principles of Ayurveda. *Agni* is responsible for all kinds of digestion and metabolism. If it is maintained in normal state it renders the body with vitality and strength. If it is affected by *vata, pitta* or *kapha*, it requires treatment. *Dhatwagni* and *bhutagni* are dependent on *jatharagni*. The vitiation of *jatharagni* leads to vitiation of *bhutagni* and *dhatwagni*. Thus care should be taken for maintenance of *jatharagni* in normal state.

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