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## Role of Dhatvagni in disease pathogenesis

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### ABSTRACT

Agni is an important aspect of existence of human life. Agni is intended to be a symbol of wholesome life within the body. Its depletion poses a serious threat to life. It determines how much food should be consumed and also affects food digestion, metabolism, cell transformation and nourishment of tissues. It is crucial for determining the severity of disease and health. Agni is classified into 13 types: one Jatharagni, five Bhutagni, and seven Dhatvagni, based on its functions and site of action. The most significant is Jatharagni, which breaks down four different kinds of food into Rasa and Mala. The five Bhutagnis feed the Bhutas in the body by acting on the corresponding Bhutika part of the meal. Every Dhatu is divided into three parts by the seven Dhatvagni acting on its corresponding Dhatus. Thus, the two categories of goods that come from the full transformation process are Prasad (essence) and Kitta (excrete). The former is consumed for sustenance, whereas the latter is discarded because, if it remains in the body longer, it defiles it. Dhatu is either depleted or overproduced depending on whether the Agni rise or decrease. This shows that Aqni has an autoregulatory and negative feedback system. The restoration of a well-formed Dhatu and the adjustment of Agni are necessary for disease treatment. Hence, our body's normal physiology and pathology depends on Agni, mainly Dhatvagni.

Key words: Agni, Jatharagni, Bhutagni, Dhatvagni, Bhutika, Prasad, Kitta

#### **INTRODUCTION**

Agni's equilibrium state is a crucial aspect of health.<sup>[1]</sup> Agni is intended to be a symbol of wholesome life within the body. Its depletion poses a serious threat to life. The condition of Agni in the body determines how well things like life, appearance, strength, health, sustenance, lustre, Ojas, Teja (energy), and Prana (life energy) are sustained.<sup>[2]</sup> It determines how much food should be consumed<sup>[3]</sup> and also affects food digestion,

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metabolism, cell transformation and nourishment of tissues. It is crucial for determining the severity of disease and health.<sup>[4]</sup> Selection of medicine, route and time of administration is decided based on Agni of the individual. The preparatory procedures of Panchakarma like oleation therapy (Snehana), dose of unctuous medicine, purification protocol and its follow up measures are subjected to assessment of Agni.

According to its purpose and site of application, Aqni has been classified into 13 categories by Acharya Charaka.<sup>[5]</sup> These are:

One Agni, known as Jatharagni, is located in the duodenum and stomach.

Five Agni made out of the basic five elements are called Bhutagni.

Seven Agni are present in Dhatvagni, one in each of the seven Dhatus.

1. Jatharagni (present in the gastro-intestinal tract): This is considered to be the Pradhyantam of all Agnis. This Agni converts Ahara into Ahara Rasa.

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These Ahara Rasa will form the other dhatus. The bioenergy or Agni that exists in the Jathara is known as Jatharagni. According to Ashtang Hridya, the seat is called Grahani and is called so because it withholds the meal for a predetermined amount of time inside the Amashaya to aid digestion. Because every nutrient that is consumed passes via the Jathara and is then subjected to the action of Jatharagni, it is believed that Jatharagni is the most significant component. It also separates the meal into its essential components and the waste products that are produced by our bodies.

- 2. Bhutagni: This Agni acts at cellular level of body. It contains five fundamental components, each of which corresponds to a Mahabhuta. The prominent Mahabhutas include Parthiva (Prithvi Mahabhuta), Apya (Jala Mahabhuta), Tejasa (Teja or Agni Mahabhuta), Vayavya (Vayu Mahabhuta), and Nabhasa (Akasha Mahabhuta). They behave similarly to components of the human body by acting on the matching substrate based on Mahabhuta composition. It is responsible for the digestion and metabolism at organic level.
- 3. Dhatvagni, also known as Rasagni, Raktagni, Mamsagni, Medo-Agni, Majjo-Agni, Asthi Agni, and Shukra Agni, is a component of all seven body tissue types and is responsible for the transformation of one Dhatu into another. These Agni maintains the function of the organs of the body. These all Agnis has different Srotas for their functioning. These Srotas will provide a pathway for supplying nutrients for metabolism. Each Agni represents a Dhatu. As Rasagni represents Rasa Dhatu, Raktagni represents Rakta Dhatu, Mamsagni represents Mamsa Dhatu, Medoagni represents Medo Dhatu, Asthagni represents Asthi Dhatu, Majjagni represents Majja Dhatu, Shukragni represents Shukra. Each Dhatu contains a small amount of Agni. Dhatu is either depleted or overproduced depending on whether these Agni rise or decrease. The end product of all the Dhatu Sara is Oja as mentioned by Acharya Dalhan. This shows that Agni has an autoregulatory and negative feedback system.

#### **AIMS AND OBJECTIVES**

- 1. To review the concept of Agni
- 2. To study the physiological aspect of Dhatvagni
- 3. To evaluate the role of *Dhatvagni* in Disease Pathogenesis

#### **MATERIALS AND METHODS**

This concept is based on a review of *Ayurvedic* texts. Materials related to *Kala*, *Agni* and other relevant topics have been collected and compiled. The main *Ayurvedic* texts used in this study are *Charak Samhita*, *Susruta Samhita*, *Astang Sangraha*, *Astang Hridaya*, *Bhavprakash*, *Yogaratnakar*, *Parameswarappa's Ayurvidiya Vikriti Vigyan* and *Roga Vigyan*, commentaries of *Samhita's* and current articles.

#### DISCUSSION

The 12 other *Agnis* are all controlled by *Jatharagni*, which is the most significant *Agni*. The condition of *Jatharagni* determines everything for all the *Agnis*.<sup>6</sup> *Jatharagni* is closely related to *Dhatvagni*, or bioenergy, in cells and the metabolic activities that take place within them, leading to tissue metabolism, or the *Dhatu-Paka* process. The proper, healthy condition of *Jatharagni* is a prerequisite for all *Dhatvagnis*, The *Jatharagni's* hyper- or hypo-activity (*Tikshna* or *Manda*) will result in an excessive or sluggish response from the *Dhatvagni*. This unbalanced behaviour ultimately results in a number of disorders.

Dhatus are the structural and functional units that act as Dosha and Mala seats. The functioning of Dhatvagni (Dhatvagnipaaka) includes overall nourishment and development of the body structures. Dhatvagnipaaka refers to the sequential changes undergone by the essence of food through the medium of seven Dhatvagni entities. The seven Dhatvagni act upon the respective Dhatu by which each Dhatu is metabolized into two parts i.e., essence (Prasada Bhaga) and byproducts (Mala Bhaga).<sup>[7]</sup> The nourishing fraction of Dhatu (nutrient tissue elements) further nourishes the subsequent Dhatu through their respective Srotas (channels of circulation). The restoration of a well-

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formed Dhatu and the adjustment of Agni are necessary for disease treatment.<sup>[8]</sup> Dhatvaani (Dhatvagnipaaka) is responsible for the general feeding and growth of the body structures. Dhatvaqnipaaka is the term used to describe the successive transformations that the essence.

Dhatvagni, in general, represents the process of tissue metabolism and assimilation. Different types of wholesome foods ingested in the form of eatables, drinkables, lickables and masticables stimulate digestion (Antaragni). They are further digested by respective Bhutagni (specific digestion per primary constituent or element). In due course of time, food gets transformed into different *Dhatu* in the presence Dhatvagni (tissue-specific of digestion and metabolism)<sup>[9]</sup> and Vata (Vyanavayu) by the process of Dhatvagnipaka.<sup>[10]</sup> The Jatharagni essentially nourishes the respective Dhatu in the form of Dhatvaani residing in each of the Dhatu.<sup>[11]</sup> It nourishes the tissues through channels of circulation without interruption and produces plumpness, strength, complexion, health, and longevity. The tissues are sustained by getting fed by various nourishing factors (Poshaka Dhatu). Thus, it plays a vital role in maintaining the digestive physiology and assimilation in the body.<sup>[12]</sup> Therefore, the whole genesis, metabolism, functioning and elimination of Dhatu are dependent on this process of Dhatvagnipaaka.<sup>[13]</sup> Hence, it is the basis of the Ksheeradadhinyaya (law of complete transformation of one substance to other like milk into curd) and Kedarikulyanyaya (sequential transformation of tissues just like canals in a farm). The Dhatvagni is responsible for the increase (Vriddhi)/ decrease (Kshaya) of the representative Dhatu. The hypo functioning (Saada) of the Dhatvagni leads to the increase in the respective Dhatu. While hyper functioning (Atideepti) leads to diminished production (Kshaya) of the Dhatu. Thus, every Dhatu's metabolism depends on the functions of the Dhatvagni, preceding and subsequent Dhatu.

Interaction of Dosha-Dhatu (Samurchhana) is the basis of pathogenesis. The state of Agni should be considered in the pathogenesis. Any derangement of Dosha, if not corrected properly, progresses deeper into the Dhatus and becomes more challenging to correct.

#### **CONCLUSION**

Aqni is the physiological entity responsible for the status of Dosha.<sup>[14]</sup> Agni and ultimately the Dhatvagni are equally responsible in the maintenance of health and even in the affliction of diseases. The *Dhatvagni* is a determinant of the production and functions of Dhatu. Hence its proper functioning is of utmost importance in health. Imbalance can lead to disease manifestation.

It is very important for metabolic disorders like dyslilipdemia (Medoroga), obstinate urinary disease including diabetes (Prameha), obesity (Sthaulya). For instance, in condition like Raktapitta, the excessive Pitta is responsible for the overstimulation of Agni and Dhatvagni, leading to the depletion of quality of Rakta Dhatu and liquidity (Dravana).<sup>[15]</sup> Here the Dhatvagni is overstimulated, leading to an imbalance in the tissue metabolism. Also, in conditions like obesity (Sthoulya), the Meda Dhatu metabolism weakens, leading to excessive Meda (fat deposition). This depicts that Agni and mainly the Dhatvagni are the basic concepts that are important to rule out the cause and treatment of any disease.

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