



## ANALYTICAL STUDY OF ROLE OF AGNI IN THE METABOLIC DISORDERS

<b>Naik Shrikant*</b>	Assistant Professor Post Graduate Dept. of Samhita Siddhant, Govt. Ayurvedic College, Raipur, Chhattisgarh *Corresponding Author
<b>Patel Prabhat</b>	MD Scholar Post Graduate Dept. of Samhita Siddhant, Govt. Ayurvedic College, Raipur, Chhattisgarh
<b>Chandrakar Rupendra</b>	Associate Professor Post Graduate Dept. of Samhita Siddhant, Govt. Ayurvedic College, Raipur, Chhattisgarh

**ABSTRACT** *Agni* is considered as the factor responsible for the digestion, metabolism and transformation in the body. Metabolic disorders can happen when abnormal chemical reactions in the body alter the metabolic process due to malfunctioning of the *Agni*. Improper *Agni* leads to production of *Ama* at *Jathragni*, *Dhatvagni* and *Bhutagni* level. The role of *Jathragni* is considered as the digestion of food in stomach, *Bhutagni* is considered as the liver functions and *Dhatvagni* is considered as tissue metabolism. *Mandagni* is the main cause of production of *Ama*, an unwanted waste material or the by-product of the various altered reactions of body. Accumulation of *Ama* is extremely detrimental to our health, it can lead to all kinds of imbalances and is a causative factor of number of diseases. It so happens that enzymatic and hormonal activities didn't take place properly leading to disturbance such as Acid-base imbalance, Calcium and Phosphorus metabolism disorders, Glucose Metabolism disorders, Hyperlactatemia, Iron Metabolism disorders, Lipid Metabolism disorders, Malabsorption syndromes, etc. Thus in the onset of Metabolic disorders *Agni* plays an important role and it is very necessary to understand the concept of *Agni* for its proper management.

**KEYWORDS :** Agni, Ama, Jathragni, Dhatvagni, Bhutagni, Mandagni, Metabolic Disorders.

### INTRODUCTION

The concept of Agni is explained in *Ayurveda* as a factor responsible for the transformation of food into body entities. Agni plays a physiological role of biocatalyst, mainly concerned with the digestion of food, absorption and its transformation into body entities. Thus the actions of various enzymes and hormones are considered as the function of Agni. Metabolic disorders are the result of altered chemical reactions either due to absence, deficiency or excess of enzymes and hormones. This variation in amount of biocatalysts is mostly due to the Malabsorption, defective gene, improper functioning of liver and pancreas, etc. Improper digestion leads to improper production of enzymes and hormones in the body. As it is mentioned in *Ayurveda* that *Jathragni* controls the other Agni of body. And *Mandagni* is the cause of all diseases. *Mandagni* causes production of *Ama* which inhibits the normal Metabolism of body. For the management of Metabolic Disorders the regulation of Agni in the body should be given importance and we should adopt and suggest the diets, medicines, exercises, living habits, Yoga and Ayurvedic herbs of Deepan, Pachan must be used<sup>1-4</sup>.

### AIMS AND OBJECTIVE

To study the concept of Agni, types of Agni, vitiation of Agni as *Mandagni*, *Tikshnagni*, *Visamagni* and *Samagni*.

To analyse the vitiations of Agni in various Metabolic Disorders.

Management of Agni adopting proper lifestyle, diet and medications.

### REVIEW AND DISCUSSION<sup>1-8</sup>

#### Agni:

Agni is considered as the digestive fire. Agni occupies the entire body & helps in biotransformation by digesting food, absorption and Metabolism. Agni transforms the Panchbhutatmak components of food into the Panchbhutatmak body entities. There are thirteen types of Agni which can be grouped together into three classes one *Jatharagni*, five *Bhutagni*, and seven *Dhatvagni*.

**1. Jatharagni:** *Jatharagni* is the digestive fire that stays in *Jathara* or stomach and accomplishes body requirements. *Jatharagni* is also known as *Pachakagni* or *Pachaka pitta* as its function is digestion of food. *Jatharagni* has been considered to be of prime importance among all three types since strength of other Agnis depends on the strength of *Jatharagni*. There is a corresponding increase & decrease in strength of *Bhutagni* & *Dhatvagni* according to increase & decrease in strength of *Jatharagni*. Therefore efforts should be made to maintain the integrity of *Jatharagni*.

There are four types of vitiation of Agni: *Visamagni* (irregular digestion), *Tikshnagni* (sharp digestion), *Mandagni* (slow digestion) & *Samagni* (balanced digestion). For the proper digestion and good health *Samagni* should be maintained.

**Samagni:** The *Samagni* digests and assimilates food properly at the proper time. *Samagni* is due to equilibrium of *Doshas*. *Samagni* increases the quality of the *Dhatus*. Persons having *Samagni* are always healthy.

**Vishamagni:** The *Vishamagni* is due to *Vaat doshas*. Sometimes it digests food properly but sometimes causes indigestion.

**Tikshnagni:** *Tikshnagni* means sharp digestion it is mainly due to *Pitta Dosh*. *Tikshnagni* is a state of very quick digestion of food, regardless of the type of food. *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*.

**Mandagni:** *Mandagni* is due to *Kapha dosha*. *Mandagni* leads to slow digestive power or digestive capacity. Those who are having *Mandagni* eat very little and are unable to digest the smallest amount of food. Due to *Mandagni* some toxic materials are formed which is known as *Ama* in *Ayurveda*. The regular production and accumulation of *Ama* in body is considered as the cause of all the Metabolic Disorders.

**2. Bhutagni:** *Bhutagni* in normal condition digests and micro-process the minute fractions of food supplied to them after the action and digestion of *Jathragni*. According to *Ayurveda*, there are five types of *Bhutagni* representing each *Mahabhuta*, which digests their respective components such as *Parthivagni*, *Aapyagni*, *Tejasagni*, *Vayvayagni* and *Nabhasagni*. *Bhutagni*. As they are components of food, they are released from food by the action of *Jatharagni*. In addition to *Bhutagni* released from food, *Bhutagni* exists in digestive tract; both together nourish the *Panchbhautik* components of body.

**3. Dhatvagni:** After the digestion by *Jatharagni*, the *Aahararasa* reaches *Dhatuvaha Strotas* where it is again digested by *Dhatvagni*. The *Agni* that resides in *Dhatu* is known as *Dhatvagni*. The *Dhatvagni* helps in nourishment of seven *Dhatus*, it exists in *Dhatuvaha Strotas*. The seven *Dhatu* contain their own *Agni*, these *Agni* once again digests

food products into two proportions one portion is 'Sara bhag', of which *Sthulansa* nourishes the concerned Dhatu, Upadhatu and Sukshmansa provides nutrients for the next Dhatu. The other portion is called 'Kitta Bhag' that nourishes the 'Mala' or waste portion of that Dhatu. Each *Dhatvagni* or the bioenergy present in each *Dhatu* synthesizes and transforms the essential *Rasa Dhatu* required for that particular *Dhatu* or cell from the basic nutrients present in the *AnnaRasa* or essence of the diet that we consume. Each *Dhatvagni* has got a speciality to synthesize and transform the constituents suitable to its particular *Dhatu*.

All the seven *Dhatu*s (seven element tissues of the body) contain their own *Agni* to metabolize the nutrient materials supplied to them through their own *Srotas*. *Rasagni* present in the *Rasa Dhatu*, *Raktagni* present in the *Rakta Dhatu*, *Mamsagni* present in the *Mamsa Dhatu*, *Medagni* present in the *Meda Dhatu*, *Asthyagni* present in the *Asthi Dhatu*,

*Majjagni* present in the *Majja Dhatu*, *Shukragni* present in the *Shukra Dhatu*.

**Production of ama due to vitiation of Agni:**

As described in Ayurveda, almost all diseases are due to Mandagni (low strength of agni) especially Udara roga (diseases causing abdominal distension), Arsha (haemorrhoids), Atisaara (diarrhoea), Grahani Roga (enteropathy) etc. When the Agni becomes weak, a number of unwanted by-products of digestion start forming known as 'Ama'. This Ama on further stasis attains toxic qualities, vitiates Doshas and leads to increased impermeability and sluggishness of Srotas i.e. body channels. This blockage of channels i.e. Srotorodha is the commonest factor in the manifestation of any disease.

A Metabolic Disorder can happen when abnormal chemical reactions in the body alter the normal Metabolic process. The principal classes of Metabolic Disorders are:

S.No	Metabolic disorder	Physiological disturbance	Disease and symptoms	Disturbance of Agni
1.	Acid-base imbalance	Acid–base imbalance is an abnormality of the human body's normal –balance of acids and bases that causes the plasma pH to deviate out of the normal range (7.35 to 7.45).It is caused by: 1. Retention of carbon dioxide. 2. Production of non-volatile acids from the Metabolism of Proteins and other organic molecules. 3. Intake of acids or acid precursors	An excess of acid is called Acidosis or Acidemia and an excess in bases is called Alkalosis or Alkalemia.	Production of Ama due to Jathragni janya Mandagni.
2.	Calcium metabolism disorders	Disorders of calcium Metabolism occur when the body has too little or too much calcium. The serum level of calcium is closely regulated within a fairly limited range in the human body. In a healthy physiology, extracellular calcium levels are maintained within a tight range through the actions of Parathyroid hormone, vitamin D and the calcium sensing receptor.	Disorders in calcium Metabolism can lead to Hypocalcemia, decreased plasma levels of calcium or Hypercalcemia, elevated plasma calcium levels.	Due to improper Asthi Dhatvagni.
3.	Glucose metabolism disorders	Due to imbalance of insulin and glucagon, proper Metabolism of glucose is disturbed leading to Hypoglycaemia and Hyperglycaemia.	Diabetes Mellitus, commonly referred to as Diabetes, is a group of Metabolic Disorders in which there are high blood sugar levels over a prolonged period.	Due to improper Ras Dhatvgni and Medo Dhtvagni.
4.	Lipid metabolism disorder	Lipid Metabolism Disorders are illnesses where trouble occurs in breaking down or synthesizing fats (or fat-like substances)[14]. Lipid Metabolism Disorders are associated with an increase in the concentrations of plasma lipids in the blood such as LDL cholesterol, VLDL, and triglycerides which most commonly lead to Cardiovascular diseases.	Gaucher's Disease (Type I, Type II, and Type III), Neimann-Pick Disease, Tay-Sachs Disease, and Fabry's Disease are all diseases where those afflicted can have a disorder of their body's Lipid Metabolism.	Due to improper Medo Dhatvagni.
5.	Malabsorption syndromes	Malabsorption syndromes: Malabsorption is a state arising from abnormality in absorption of food nutrients across the Gastrointestinal (GI) tract	Impairment can be of single or multiple nutrients depending on the abnormality. This may lead to malnutrition and a variety of Anaemias. Malnutrition may leads to obesity or ameciation, marasmus, kwashiorkor.	Due to improper ras dhatvagni
6.	Iron metabolism disorder	Iron-deficiency Anemia is Anemia caused by a lack of iron.	Anemia is defined as a decrease in the number of red blood cells or the amount of hemoglobin in the blood.	Due to improper rakt dhatvagni
7.	Phosphorus metabolism disorder	Increase or decrease of serum phosphorus is mainly due to imbalance of	Decreased density of bones and weakening of tooth.	Due to improper Asthi dhatvagni.

**DISCUSSION**

Metabolic disorders mainly the results of Dhatvagni Mandya. Metabolic disorders can be treatable by nutrition management, especially if detected early. Due to improper digestion further enzymatic and hormonal production and efficiency gets impaired finally leading to lots of Metabolic Disorders. We need to improve the Jathragni at first for the improvement of patients of Metabolic Disorders. Due to Mandagni various toxic materials get formed known as Ama, further accumulation of such toxic materials results into impairment of other physiological reactions. Thus for healthy life Jathragni plays a great role.

**For the improvement of jathragni one should :**

Do fasting, expelling the phlegm out of the body through Vamana or

Emesis. Deepaniya drugs or appetisers, Pachaniya drugs digestive, pungent, salty medicines and food items. Formulations like Hingvashtaka churna, Trikatu churna, and Panchakolasava would be beneficial. Take healthy diet, with low fat content, increase physical activity take hot water, avoid causative factors i.e., heavy meals and eating before the next meal digested, irregular diet (Vishamashen), in case of constipation use Vata valomak drugs such as Haritki or mild purgatives. Laghu ahaar like mung khichari or mung dal, laja. Do meditation, Do yoga and physical exercises

**DON'T:**

Raw, uncooked food, Guru: black gram, and all heavy foods, Abishandhi: yogurt, fish, non-vegetarian food, Shita foods (in temp and guna), Avoid sedentary life, Avoid stressful life, Tobacco and alcohol

**CONCLUSION:**

The entire range of digestive and metabolic activity of the body takes place with the help of biological fire of the body known as Agni in Ayurveda. When the Agni gets vitiated, unwanted unripe by-products of digestion and metabolism i.e. ama starts forming and accumulating in the body at different levels from gastrointestinal level to the systemic level. These pathological events ultimately lead to various gastrointestinal, allergic, auto-immune, and metabolic disorders. Thus, it is important to understand the concept of Agni for the management of Metabolic disorders.

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