



Review Article

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DIAGNOSIS OF GRAHANI GADA WITH SPECIAL REFERENCE TO IRRITABLE BOWEL SYNDROME: A REVIEW

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ABSTRACT

The word Grahani Dosha refers to the ailments of Grahani (duodenum or small intestine) comprises of Grahani Gada (malfunctioning of duodenum or small intestine), Agnimandhya (weak digestive power), Ajirna (indigestion), Amlapitta (peptic ulcer disease and GERD) etc. It occurs due to impaired digestion of food due to vitiation of Agni (digestive power) in a vitiated Grahani. Properly digested food provides nourishment to Deha-Dhatu (tissue elements of body) as well as it is also responsible for Ojas (vital essence), strength and complexion. The erratic lifestyle and food habits causes' diminished digestive power leading to improper digestion and metabolism resulting into the Grahani Gada and it is characterised by frequent watery stool or constipation. The symptoms are very similar to irritable bowel syndrome. There is no clear diagnostic markers exist for diagnosis of IBS, thus the diagnosis of this disorder is based on clinical presentation either in Ayurveda or modern medicine.

Keywords: Grahani Gada, Agni, IBS.

INTRODUCTION

Grahani is the site of the Agni (digestive enzymes) and it is called Grahani due to its function of Grahana (to restrain) the food for digestion and downward movement of food. It is located above the umbilical region. The Agni, while providing nourishment and support to Grahani, helps in digestion of food. Normally, it restrains the food and causes downward movement of food after digestion; it releases food through the sides of its lumen. In the abnormal condition, when it gets vitiated because of weakness of Agni (digestive power), it releases food in undigested form. Impaired Agni burns the food incompletely which goes either upward or downwards. When it moves downward either in ripe or unripe condition is known as Grahani Gada¹. Grahani Gada is synonym to Grahani Roga. That is 'Grahani Dosha' implies the malfunctioning of Agni (enzymes responsible for digestion and metabolism). Individual afflicted with Grahani gada passes frequent watery stool or constipated bowel. The symptoms are similar to irritable bowel syndrome.

Concept of Agni²

The term Agni (bio digestive fire) in common language means fire. Agni is responsible for digestion and metabolism of food in a living organism. However, in the context of functioning of living organism, which maintains its integrity and performs its vital activities by converting biophysical and biochemical processes of the foods to provide the energy, necessary for strength, longevity, complexion, health etc.

Types of Agni

Three main types of Agni have been described namely Jatharagni, Bhutagni (Agni to digest respective Bhuta) and Dhatvagni (Agni present at tissue level).

Jatharagni

Jatharagni (enzymes located in the gastrointestinal tract) is responsible for disease and health. During its normalcy it is responsible for longevity, complexion, strength, health, enthusiasm, well built, lustre, immunity (Ojas), body temperature, proper functioning of other Agni (Bhutagni and Dhatvagni) and other vital functions. The health or diseased state of body is entirely depends on normal or abnormal functions of Agni. Jatharagni is the chief among all types of Agni's³.

Bhutagni

This is of five types according to Pancha Mahabhuta (Aakash, Agni, Jala, Vayu, Prithvi) and is cause of digestion and metabolism of respective Bhuta qualities of food and tissues. The food consists of five Mahabhuta is digested by five Bhutagni and each of its principles process to its own analogues in the human body. The concept of Bhutagni may be correlated to present understanding of digestion in the alimentary canal where food is broken up or food is converted or breaking it down into substances suitable for absorption and assimilation in the oral cavity⁴. It also performs functions at tissue level for the nourishment of each Dhatus because each Dhatus are made of Panchamahabhutas.

Dhatvagni

The seven varieties of Dhatu (Tissue elements) are accountable for support and maintenance of body cells and tissues. There are three components emerge from Jatharagni digestion .i.e. Poshya (nourishment material for respective Dhatu), Poshaka (nourishment substance for development of next Dhatu) and Kitta (waste materials generated by the digestion of respective Dhatvagnis). The nutrient part .i.e. Poshaka of Rasa (essence of food) provides nourishment to Rakta (blood), Rakta to Mamsa (muscle tissue), Mamsa to Medas (adipose tissue), Medas to

Asthi (connective tissue), Asthi to Majja (bone marrow) and Majja to Shukra (Semen) and from Shukra to Ojas (Source of immunity/strength). The Dhatus form flawlessly by metabolic transformation from Rasa to Shukra for the normal growth of the body cells and tissues. Such chemical processes within a living cell yields energy and is responsible for sustenance of body tissues and cells⁴.

Nidana (aetiology) of Grahani Gada⁵

Grahani Gada manifest due to disordered function of Agni in the region of Grahani. A person cured from Atisara (diarrhoea) or person who is suffering from mild digestive fire, consumes unwholesome dietetic regimen leading to further vitiation of Agni and Grahani causes Grahani Gada.

On the other hand Doshic Grahani (due to predominance of any Dosha) occurs due to utilization of etiological factors causing vitiation of any Dosha⁶ either Vata, Pitta or Kapha collectively or individually.

Causes of Vataja Grahani Gada

Excessive intake of pungent, bitter, astringent, excessively unctuous and cold food, intake of less food, excessive fasting, walking long distance, suppression of natural urges and excessive sexual intercourse. All these factors laid the foundation vitiation of Vata along with other doshas and agni leading to development of Vataja Grahani Gada.

Causes of Pittaja Grahani Gada

Excessive consumption of pungent, heavy, Vidahi (causes burning sensation); sour and alkaline substances cause aggravation of Pitta leading to development of Pittaja Grahani Gada. It extinguishes Agni (digestive enzymes) as hot water causes extermination of physical fire.

Causes of Kaphaja Grahani Gada

Excessive ingestion of heavy, unctuous and cold food, intake of food in excess amount and sleeping immediately after meals

causes Kapha aggravation leading to the development of Kaphaja Grahani Gada.

Irritable bowel syndrome

Irritable bowel syndrome (IBS) is a functional GI disorder and its causes remain poorly defined but there are some triggers stimulate the reactions inside gastrointestinal tract and these differ from person to person.

Common triggers include⁷

Foods- Certain food substances like chocolate, spices, fats, fruits, beans, cabbage, cauliflower, broccoli, milk, carbonated beverages and alcohol etc developing more severe symptoms after consumption of these items.

Stress- Signs and symptoms are worse or more frequent during periods of increased stress in few cases of IBS.

Hormones- Hormonal changes play a role in the development of IBS in females because women are twice as likely to have this disease and it has been observed that signs and symptoms are worse during or around their menstrual periods.

Other illnesses- Acute episode of infectious diarrhoea (gastroenteritis) or too many bacteria in the intestines (bacterial overgrowth) can trigger IBS. It may be compared to the etiological factors described in Ayurveda in relation to Grahani Gada followed by Atisara.

Types of Grahani

Four types of Grahani Gada namely Vataja grahani Gada, Pittaja Grahani gada, Kaphaja Grahani Gada and Sannipataja Grahani Gada are described in detail.⁸

Diagnostic criteria of Grahani according to Ayurveda

Subjective criteria are mentioned for each variety of Grahani Gada for the diagnosis and common signs and symptoms in general.

Table 1: Presenting Rupa (General Symptoms) of Grahani Gada, are useful to diagnose the condition⁹

S.N.	General Symptoms	Result
1.	Are you suffering from altered bowel(frequent watery stool or constipation)	Yes or No
2.	Do you feel excessive thirst	Yes or No
3.	Do you lost the desire towards food	Yes or No
4.	Do you feel distaste in mouth	Yes or No
5.	Do you feel excess salivation	Yes or No
6.	Do you have complain of darkness in front of eyes	Yes or No
7.	Do you have oedema on feet and hands	Yes or No
8.	Do you have pain in bones and joints	Yes or No
9.	Is there any history of vomiting	Yes or No
10.	Do you feel increased warmness of your body	Yes or No
11.	Are you suffering from eructation having metallic or Ama (toxic material) smell, bitter and sour belching	Yes or No
12.	Is your weight reduced	Yes or No
13.	Do you have desire to eat everything but not able to eat due to decreased digestive power	Yes or No
14.	Do you feel burning sensation	Yes or No

Table 2: Presenting Vataja Grahani Gada symptoms¹⁰

S.N.	Symptoms	Result
1.	Does your food digest with difficulty	Yes or No
2.	Do you feel hyperacidity	Yes or No
3.	Do you feel roughness in body	Yes or No
4.	Do you feel dryness of throat and mouth cavity	Yes or No
5.	Do you feel excessive thirst and hunger	Yes or No
6.	Have you complaint of blurred vision	Yes or No
7.	Do you feel tinnitus sound in your ears	Yes or No
8.	Are you suffering from frequent pain in sides of chest, thighs, pelvic region and neck	Yes or No
9.	Are you suffering from diarrhoea and vomiting	Yes or No
10.	Do you feel pain in cardiac region	Yes or No

11.	Is your weight reduced	Yes or No
12.	Do you feel excessive weakness	Yes or No
13.	Do you feel distaste in mouth	Yes or No
14.	Do you have cutting type of pain in abdomen	Yes or No
15.	Do you have desire to eat everything of all taste	Yes or No
16.	Do you feel excessive lassitude	Yes or No
17.	Do you feel like that you are suffering from Vatagulma, Hridroga or Pliha roga (disease of heart or spleen and liver)	Yes or No
18.	Have you complaint of flatulence after and during the process of digestion and get relived after taking meal	Yes or No

Table 3: Presenting Pittaja Grahani Gada symptoms¹⁰

S.N.	Symptoms	Result
1.	Are you passing undigested bluish yellow or yellow colour watery stool	Yes or No
2.	Is there any foetid smell and sourness in eructation	Yes or No
3.	Have you complaint of burning sensation in throat and cardiac region	Yes or No
4.	Have you no desire towards food	Yes or No
5.	Do you feel excessive thirst	Yes or No

Table 4: Presenting Kaphaja Grahani Gada symptoms¹⁰

S.N.	Symptoms	Result
1.	Does your food digest with difficulty	Yes or No
2.	Do you feel nausea	Yes or No
3.	Are you suffering from vomiting	Yes or No
4.	Do you lost the desire towards food	Yes or No
5.	Is there any sliminess and sweet taste in mouth cavity	Yes or No
6.	Are you suffering from cough often	Yes or No
7.	Have you complaint of excessive spitting of sputum	Yes or No
8.	Have you complaint of cold and sneezing repeatedly	Yes or No
9.	Do you feel sluggishness in your cardiac region	Yes or No
10.	Do you feel your abdomen is still and heavy	Yes or No
11.	Is there any sweetish eructation associated with foul smell	Yes or No
12.	Do you feel excessive fatigue	Yes or No
13.	Have you complaint of lack of desire towards woman	Yes or No
14.	Have you complaint of passing of stool which splits into pieces, mixed with ama and mucus and heavy	Yes or No
15.	Do you feel weakness and lassitude without no emaciation	Yes or No

Sannipataja Grahani Gada– It is characterised by amalgamation of symptoms of Vataja, Pittaja and Kaphaja types of Grahani Gada.

On the other hand according to modern science pain or abdominal distress is a key symptom for the diagnosis of Irritable bowel syndrome. These symptoms should be improved with defecation and/or have their onset associated with a change in frequency or form of stool. Painless diarrhoea or constipation does not fulfil the diagnostic criteria to be classified as IBS. Supportive symptoms that are not part of the diagnostic criteria include defecation straining, urgency or a feeling of incomplete bowel movement, passing mucus, and bloating¹¹.

For Irritable Bowel Syndrome (IBS) the criteria is as follows¹²

Recurrent abdominal pain or discomfort at least 3 days/month in the last 3 months associated with two or more of the following criteria are helpful in the diagnosis of IBS.

Is there any improvement with defecation

Onset associated with a alteration in frequency of stool

Onset related with a change in form (appearance) of stool

IBS can also cause symptoms in other parts of body including: Low back pain, muscle and joint pain, continuous fatigue, headache, nausea, burping, Bad breath and a frequent and urgent need to urinate. Due to the pain, discomfort and embarrassment

that are sometimes associated with IBS, some people also experience feelings of anxiety and gloominess.

DISCUSSION

Sluggish functions/reduced power/irregular power of Agni leads to derangement in digestion and metabolism causing diseases of Annavaha Srotas (gastrointestinal tract) mainly Grahani Dosha. The word Grahani Dosha refers to the disorders of Grahani comprises of Grahani Gada (malfunctioning of duodenum or small intestine), Agnimandhya (abnormal power of Agni), Ajirna (Indigestion), Amlapitta (peptic ulcer disease and GERD) etc. Irregular diet and activities causing mildness of power of Agni leading to abnormal digestion and favours the genesis of Grahani Gada. The properly digested food passes through the gastrointestinal tract after processing at each level from oral cavity to anus. The function of the duodenum is not only to assimilate the food but also releases the digested food into the colon where it is absorbed and excreted under influence of Vata, Pitta and Kapha. During disease state Grahani fails to perform its normal functions due to impaired power of Agni and other body humours and it releases its contents early than normal into colon with food being raw or it preserve its contents for longer periods. Hence Grahani Gada is characterised by alternating diarrhoea with constipation.¹³

Assessment of Nidana (Causes)

Nidana Parivarjna (withdrawal of causes) is the first step for management of any disease that's why it is necessary to understand aetiology entirely. Trigger factors as described in

modern science in respect of IBS can be understood in Ayurvedic perspectives. *Kostha Viruddhahara* (food which is not suitable for gut i.e. Gut incompatibilities) causes vitiation leading to abnormality in Agni.¹⁴ *Viruddha Chesta* (erratic activities either physical or mental) indicates all the activities of body which have an adverse effect on normal physiological functions of gastrointestinal tract leading to vitiation of Agni. Anger and fear, excitement and anxiety trigger the body's 'fight or flight' response. The adrenal glands flood the body with stress hormones, such as adrenaline and cortisol. The brain shunts blood away from the gut and towards muscles, in preparation for physical exertion. The constant flood of stress chemicals and associated metabolic changes that accompany recurrent unmanaged anger can eventually cause harm to many different systems of the body. Some of the short and long-term health problems that have been linked to unmanaged anger and other emotions include: headache, digestion problems, abdominal pain, insomnia, increased anxiety, depression, high blood pressure etc. Stress, emotional instabilities like fear complexes (phobias), etc. have tremendous somatic impact in bringing down the digestive power. An inhibiting influence of the nervous system on gastric secretions encountered in emotional states is obvious. The mechanism of inhibition with emotions would seem to be stimulation of the sympathetic nervous system on one hand and a reflex increase in the secretion of adrenaline have an inhibiting effects on gastric secretions leading to *Mandagni* (low digestive power)¹⁵. Hormonal variation in during menstruation cycle may be understood as *Vata* increases during late progesterone cycle and on the other hand *Pitta* in decreasing state causing impairment of Agni in Ayurveda. Stress also impairs the functions of Agni.

Other illnesses: The alteration in gut motility pragmatic in IBS is qualitative, with no split pattern that can differentiate patients from healthy subjects. Two major changes are noted as changes in gut transit and augmented motility of gut. Enhanced gut transit is seen in some patients with diarrhoea-predominant IBS, and decreased gut transport is seen in some patients with constipation-predominant IBS. Increased motility in contrast with healthy is observed in response to various stimuli, such as psychological stress, meals, etc.¹⁶. Eventually all these factors cause vitiation of Agni leading to *Grahani Gada*.

Critical understanding of presenting complaints

Thirst is the longing for fluids, an essential mechanism for fluid balance in body. It arises from a lack of fluids or an increase in the concentration of certain osmolites. If the water volume of the body falls below a certain verge or the osmolite concentration becomes too high, the brain signals thirst¹⁷. Ayurveda says greatly exacerbated *Vata* and *Pitta* brings vitiation in *Ambuvaha Srotas* (channels which carries water) and causes dehydration of *Saumya Dhatus* (*Kapha*, *Rasa*, *Udaka-water* etc.) causing *Trishna* (thirst). Other causes leads to *Trishna* are consumption of heavy food; milk etc. because during digestion there is an obstruction of the channels by their mixture resulting in *Vata* and *Pitta* vitiation¹⁸.

Anorexia or lack of desire of food, nausea, and vomiting with pain can all be regarded teleologically as protective reflexes whereby the body prevents the entry of toxins into the body. On the other hand it may also be occurred due to mentally stress as described under *Manobhigataja Arochaka* (anorexia due to affliction of mind).¹⁹

Altered taste or having a bad taste in the mouth is also a result of stress. If infrequent stress responses occur, the body can recover relatively quickly from the physiological, psychological, and emotional changes and allows the body to return to normal functioning. A body that becomes stress-response hyper

stimulated can exhibit similar sensations and symptoms to that of an active stress response. Stress also affects the stomach and digestion. Stress response suppresses the stomach's capability to assimilate food as well as that of the digestive tract and these are useful in real danger, but can cause problems when stress reaction is triggering too frequently. In over stressed condition, a number of stomach and digestive problems occur, which can affect the taste in the mouth also. Stress adversely affects the nervous system—beneficial when in real danger, the stress response impacts the nervous system the most. When the nervous system is unfavorably affected by too much recurrent and/or dramatic stress responses, can cause a number of nerve and nervous system irregularities including disturbing the taste buds in the mouth. Moreover, a stress-response hyper stimulated nervous system can cause the misreporting of sensory information, such as taste. Many anxious people experience a bad taste in the mouth due to stress-response hyperstimulation.²⁰ Excessive salivation shows the presence of *Ama* in body produced due to weakness of Agni²¹. Along this it can be thought as acid reflex in GERD.

Darkness in front of eyes also caused by impaired Agni due to which there is impaired formation of all *Dhatus* including *Majja Dhatu* leading less or impaired RBCs production causing anemia.

After a time being IBS patient may also have joint pain known as *sacroiliitis* (pain in joints) in IBS. This may follow the pathogenesis of *Amavata* (group of joint disorders) due to formation of *Ama* (internal antigen) in body.

Fever in *Grahani Gada* is a disease caused by vitiation of Agni, causes indigestion of food, in *Jvara* (fever) pathogenesis it has been said that when aggravated *Doshas* enters *Amashaya* (stomach) and combines with Agni, accompanying *Rasa* (*plasma*), blocks channels of *Rasa* and *Sveda* (sweat), impairs functions of Agni and expels out Agni from the site of digestion and spread to all over the body and gives rise to body temperature²².

Eructation having metallic or *Ama* smell, bitter and sour belching and burning sensation) may also be experienced by some patients because gastric symptoms as part of their IBS symptom picture. If reflux and/or hypochlorhydria are chronic, gastritis and ulceration can result. When the symptoms are similar to gastritis and ulcer, disease has progressed into a pathology²³.

Due to less formation of proper *Rasa Dhatu*, it fails to nourish the other *Dhatus* as a result patient gets emaciated. On the other hand *Ama Rasa* blocks the channels fails to nourish the other *Dhatus* due to obstruction of channels also.

CONCLUSION

Grahani Gada is caused by erratic lifestyle and abnormal diet pattern. Hence it should be managed with appropriate diet modification and lifestyle changes. *Grahani Gada* may be correlated to Irritable bowel syndrome due to their similar clinical presentations. The diagnostic criteria for the diagnosis of *Grahani Gada* in general along with its various types have been prepared.

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