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A VIEW ON NIDANA PANCHAKA OF GRAHANI ROGA W.S.R. TO IRRITABLE BOWEL SYNDROME

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ABSTRACT

Grahani and agni are having adhara-adheya-sambandha. Grahani is described as agni adhisthana by the ancient acharyas. Mandagni is root cause of ama dosha and it is the main factor for manifestation of most of the diseases. Any deviation from the status of samagni i.e. mandagni, teekshanagni and vishamagni is called as grahani dosha. Grahani is the main functional part of mahasrota which is situated in between amashaya and pakwashya. Its main function is to hold the ahara up to the end of avasthapaka and once it completes, it passes the ahara into pakvashya. Improper agni results in vitiation of grahani. As a result, it releases food in indigested form which gets fermentated and

act like poison in the body. It's called *ama*. *Ama utpatti* leads to *grahani roga*. Based on the symptomatology, *Grahani* can be correlated with IBS (Irritable Bowel Syndrome). In IBS, the wall of the intestine becomes sensitive to even mild stimulus which causes excess abdominal cramps & hence the bowel movement alters along with indigestion. In India, IBS affects about 15% of adult population. It is 3 times more common in women and people of working age. **Objectives:** The study aims to explore the *Nidana Panchaka* of *Grahani roga* w.s.r. to Irritable Bowel Syndrome. As a result, *roga pariksha* of the disease can be done easily and hence management of the disease can be planned accordingly. **Data source:** *Ayurvedic* classics named *Charak samhita*, *Sushruta samhita*, *Astang hridya*, textbooks and online data bases have been studied thoroughly to understand the concept of *Grahani*. Various scientific journals, books and online data bases were reviewed for the understanding of pathogenesis of Irritable Bowel Syndrome. **Results:** *Grahani roga* is a disorder of mainly *agni* and various causative factors like *aaharaj*, *viharaj*, *mansik* etc. are held responsible for the condition. *Ama* is an important causative factor for the disease. Based upon the *nidana*

panchaka of the disease, it can be correlated with I.B.S. as it is group of associated symptoms of impaired gastrointestinal tract functions. **Conclusion:** *Nidana Panchaka* has been considered as the *Roga Pariksha* of any disease. *Grahani Roga* can be properly examined and understood with the help of its *Nidana Panchaka* and the management of the disease can be planned accordingly.

KEYWORDS: *Grahani dosha, Mandaagni, Adhara-Adheya, IBS, Agnidushti.*

INTRODUCTION

As per *Shabda kalpadruma*, the word *grahani* is derived from *dhatu* '*Grah*' which means to catch, to hold or to get. *Grahani* is a specialized part of *mahasrotas* (gastrointestinal system). It is explained as the seat of *agni* i.e. digestive fire of the body. It retains the food till the food is fully digested and then passes it into *pakwashaya* (intestine). A person tends to suffer from the various diseases by his improper food habits.^[1] These improper food habits are basically violation of rules and regulation of diet intake. Functionally weak *agni* i.e. *mandagni* cause improper digestion of ingested food and hence leads to *grahani roga*.

As per Ayurveda all the diseases are said to be caused due to *mandagni*. Acharya Sushruta considers *pittadhara kala* as *grahani* which is located between *aamashaya* and *pakwashaya*. He has mentioned *Grahani* as seat of *Pachakpitta* which receives and retains food substances. According to *Acharya Vagbhata*, *Grahani*, *Arsha*, *Atisara* manifests mainly due to the improper Agni and related *Dosha-dushyadushti*. They all are considered as *Nidanathakararoga* i.e. as one become the cause of other *Grahani roga* is one of the *Kashtasadhya vyadhi* i.e. difficult to cure, as it is mentioned in *Ashtamahagada* by *Acharya Vagbhata*.

The disease in which *Grahani naadi* gets vitiated by the aggravated *doshas* and impairment of *agni* is called as *Grahani Roga*. ^[6] *Grahani roga* is the advance stage of *Grahani dosa* where not only *vatadi doshas* get vitiated, but *Grahani naadi* also gets vitiated. ^[7] *Grahani roga* is the disorder of digestive system due to vitiation of *Pachaka pitta*, *Saman Vayu* & *Kledaka Kapha*. It manifest symptoms like *Muhurbaddha Muhurdravam* (alternate passing of hard & loose bowel habits), *sarujam ama-apakwa puti Malapravritti*(painful foul smelling defecation in form of *ama-pakwa Avastha*), *bahusho bimunchati* (defecation in large quantity), *Vairasya* (tastelessness), *Suktapaka*(acid eructation), *Trishna*(excessive thirst), *Daurbalya* (weakness), *manasa sadanam* (depression) etc. ^[8] Due to mal absorption and lack

of nutrition, various complications due to predominance of *vata* become manifested like *swasa*, *kasa*, *gulma*, *hridroga*, *pliharoga*, *parikartika*.^[9] Psychological factors like *Krodha*, *Shoka*, *Bhaya*, *Kama* etc. also play role in *ama utapatti* which again results in *Agnidushti*.^[10] Hence *agni dushti* is the main causative factor in the pathogenesis of disease '*Grahani*'.

Various meanings of grahani can be illustrated as below

- 1. *Grahani* as *ashaya Grahani* is the main functional part of *mahasrota* which is situated in between *amashaya* and *pakwashya*.
- 2. It is also known as *pittadhara kala* which is 6th *kala* and site of *Jatharagni*. Its main function is to hold the *ahara* up to the end of *avasthapaka* and once it completes, it passes the *ahara* into *pakvashya*.
- 3. Grahani as *Nidanathakararoga* According to *Acharya Vagbhata*, *Grahani*, *Arsha*, *Atisara* manifests mainly due to the improper Agni and related *Dosha-dushyadushti*. They all are considered as *Nidanathakararoga* i.e. as one become the cause of other.
- 4. *Grahani dosha* The hypo function of *Agni* i.e. *Mandagni* is the root cause of all the disease, *Grahani dosha* is also mainly caused by *Agnidushti*. The main site of *Agni* and the disease *Grahani dosha* is the organ-*Grahani*, and considering no difference between *Ashraya* (shelter) and *Ashrita* (dependent), the malfunctioning mainly lies in the organ-*Grahani*, is called *Grahani dosha*.
- 5. Grahani roga The disease in which Grahani naadi gets vitiated by the aggravated doshas and impairment of agni is called as Grahani Roga. Grahani roga is one of the Kashtasadhya vyadhi i.e. difficult to cure, as it is mentioned in Ashtamahagada by Acharya Vagbhata.

Grahani is a disease of great clinical relevance in modern era because of its direct link with the improper food habits and stressful lifestyle of the current time. According to signs, symptoms and pathology of *Grahani*, it can be correlated with Irritable Bowel Syndrome (IBS). Clinically IBS shows symptoms like altered bowel habit i.e. constipation, diarrhoea or mixed type, abdominal pain and bloating, indigestion, heart burn, feeling of incomplete defecation, passage of mucous in stool etc.^[11] I.B.S. is a functional disorder of G.I. tract. About 10-15% of people in the developed countries are believed to be affected by IBS. It is estimated that 15-45 % of people globally are affected by IBS.^[12] In India, IBS affects about 15% of adult population and the ratio of male and female is 3:1 which is just reverse to the ratio in the western countries.^[13] Hence, it indicates that prevalence of the disease in the

society demands its study. Despite of such a strong prevalence rate, there is no known cure for IBS till today.^[14]

The understanding of IBS has undergone a rapid evaluation with scientific advancement, but historically it was recognised over 150 years ago. In 1849, Cumming reported, 'The bowels are at one time constipated, another lax, in the same person. How the disease has two such different symptoms I do not profess to explain'. [15]

Altered gastrointestinal motility, visceral hypersensitivity, post infectious reactivity, brain-gut interactions, alteration in fecal micro flora, bacterial overgrowth, food sensitivity, carbohydrate mal absorption and intestinal inflammation all have been implicated in the pathogenesis of IBS.^[16] Serotonin is largely present in the enterochromaffin cells in the gut and is a major regulator of the peristaltic reflex and sensory relays in the gut.^[17] There are two lines of evidence supporting the view that serotonin regulation is abnormal in IBS. The release of serotonin in plasma appears to be reduced in those with constipation-predominant IBS (IBS-C) and increased in diarrhoea-predominant IBS (IBS-D).^[18] A defect in serotonin signalling was noted in both IBS and ulcerative colitis, with a reduction in normal mucosal serotonin and serotonin transporter immune reactivity in both diseases.^[19]

MATERIAL AND METHODS

Charak samhita, Sushruta samhita, Kashyapa samhita, Astang hridya, medical textbooks, journals and online data bases were seen thoroughly for the study. Relevant data was collected and analyzed critically to explore the concept.

Nidana panchaka of grahani roga

The impairment of *grahani* will impair the functional aspect of Agni and Vice versa. Therefore, all the etiological factors of *agni dushti* may cause *Grahani* and Finally result in *grahani roga*. Various causative factors of the disease are described below:-

Nidana

- 1. Samanya nidana^[20]
- Abhojana (Excessive fasting), Ajirna (Indigestion), Atibhojan (Excessive food intake),
 Vishmashan (Improper food).
- Food intake like- *Asatmya* (Incompatible), *Guru* (heavy), *Sheeta* (cold), *Atiruksha* (dry), *Dusit bhojan* (Contaminated food).

- Asamyak prayoga of panchakarma therapies like- Vamana (emesis), Virechana (Therapeutic purgation), Snehana (oleation) etc. (Adverse effect of therapeutic measures).
- Desha, Kaal, Ritu vishamta (Habitat, time, weather irregularities)
- *Vega vidharana* (Suppression of natural urges).
- 2. Vishishta nidana^[21]:- Here, specific types of grahani which result from a specific causative factor which has been elaborated below:-

S. No.	Vataj Grahani	Pittaj Grahani	Kaphaj Grahani	Sannipataj Grahani
1.	Katu (pengent), Tikta (bitter), Kashaya (astringent) rasa	Katu (pengent), Amla (sour) rasa yukta aahar	Guru (difficult to digest), Atisnigdha (unctuousness), Sheeta bhojan (stale food)	Mixed
2.	Atiruksha (dry), dushit bhojan (contaminated food)	Ajeerna (indigestion)	Atibhojan (taking excess amount of food)	
3.	Pramitashan (permissiveness)	Vidhai anna (food which causes burning sensation)	Bhukta matra swapna (prefer sleep after having meal)	
4.	Anshan (fasting)	Kshara (Alkaline food)		
5.	Veganigraha (suppression of natural urges)			
6.	Atimaithun (excess of sexual activity)			

3. Manasika nidana in grahani roga

In Ayurveda, diseases are divided into two types -1. *Sharirika* (Somatic) and 2. *Manasika* (psychological)^[22] *Manasika* and *sharirika roga* are interconnected with each other as one becomes the reason of other after some time and vice versa. As in the past, the etiology and symptomatology of many diseases emphasize the importance of psychological factors. Mind and body are related as one is *adhara* and the other is *adheya*, one can easily influence the other. Hence it can be said that somatic disorders have psychological backup. According to Ayurveda, Anxiety, Grief, Fear, Anger etc. are found to play a major role in *Grahani roga*.^[23]

Acharya Charaka has mentioned that any wholesome food, even if taken in the right quantity, does not get digested if the mental state of the person is disturbed. Anxiety, grief, fear, anger, restless and irritability due to lack of sleep are the psychological factors held responsible for

production of amadosha and hence Grahani Dosha. [24] The same thing is found to play role in IBS also.

Causative factors of irritable bowel syndrome (IBS)

The pathogenesis of IBS is poorly understood, although role of below factors have been proposed.

- Abnormal gut motor & sensory activity
- Central neural dysfunction
- Psychological disturbances & stress
- Luminal factors
- Post infection

The role of psychosocial factors in IBS must also be considered because these factors influence treatment options and patients' expectations. [25] Modern epidemiological, psychophysiological and functional brain imaging research has partially clarified the mechanisms through which these psychosocial factors may act on GI function or symptomatology. Although the exact nature of their relationship remains a matter of controversy. The "brain-gut axis" can be conceptualized as the bidirectional connection system between the GI tract (with its enteric nervous system) and the brain (central nervous system) through (autonomic) neural, neuroimmune and neuroendocrine pathways. Thus, when gut function is disturbed, the cause of this disturbance can be found in the GI tract itself or in the modulatory input from the central nervous system via the brain-gut axis. [26]

Table no. 1: Purva roopa (Premonitory symptoms) of grahaniroga.

S. No.	Purva rupa	Acharya charaka	Acharya sushruta	Acharya vagbhata
1.	Trishna (Thirst)	+	+	+
2.	Alasyam (Lethargic)	+	+	_
3.	Balakshaya (Loss of strength)	+	+	_
4.	Annasyavidaha (Improper digestion of food)	+	+	-
5.	Chirapaka (Delayed digestion)	+	_	+
6.	Kayasya gourvam (Heaviness of the body)	+	_	+
7.	Sadana (Lassitude)	_	+	+
8.	Klama (Exhaustion)	_	+	+
9.	Aruchi (Aversion of food)	_	+	+
10.	Kasa (Cough)	_	+	_
11.	Karnakshweda (Ringing in ear)	_	+	+

12.	Antrakujanam (Rumbling sound		1	1
	in the intestine)		+	+
13.	Preseka (Salivation)	ı	I	+
14.	Vaktravairasaya (Tasteless)	_		+
15.	Bhrama (Confusion)	ı	I	+
16.	Anaddhodarata	ı	I	+
17.	Chardi (Vomiting)			+
18.	Amlapakam (Acid phase of paka)	_		+

Prodromal symptoms of Irritable Bowel Syndrome (IBS)

IBS is a common disorder that affects the stomach and intestines, also called the gastrointestinal tract. Prodromal symptoms of IBS include cramping, abdominal pain, bloating, gas, diarrhoea or constipation, or both, depending on what type of IBS you have.

Rupa of grahani Roga and Irritable bowel disease

Table no. 2: Showing the comparison between lakshana of grahani Roga and IBS. [28]

S. No.	Grahani roga	IBS
1.	Atisrishtam vibaddham va	Altered bowel with diarrhoea and constipation
2.	Punah punah srijet varcha	Frequent defecation
3.	Shoola	Abdominal pain
4.	Amameva vimunchati	Passes mucus along with stools
5.	Jeerne jeeryati adhmanam	Post prandial fullness
6.	Parshva vankshana	Pain on right and left sides (flanks), epigastric
0.	hritpeeda	and hypogastric pain
7.	Chirat mala pravritti	Delay in delivery of stools
8.	Đukhena mala pravritti	Impaired rectal sensation and hence painful
0.		defecation
9.	Tiktamlodgar	Dyspepsia
10.	Shabda phena mala	Gas, flatulence
11.	Hrillasa	Heartburn
12.	Chardi	Vomiting
13.	Shiroruk	Headache
14.	Manasaha sadanam	Abnormal psychological behaviour

According Acharya Charaka Life-span, complexion, strength, health, enthusiasm, corpulence, luster, immunity, energy, heat processes and vital breath all these depend on body fire (agni). One dies if this body fire is extinguished, lives long free from disorders if it is functioning properly, gets ill if it is deranged, and hence agni is the root cause of all diseases. In grahaniroga, main root cause is alteration of agni and accordingly, it is classified in to four types i.e. Vataja, Pittaja, Kaphaja and Sannipataja grahani. Muhur-badham, muhur-dravam (passage of stools alternated with constipation or diarrhoea) is the cardinal sign of grahaniroga, which is similar to the common symptom of IBS. [29]

Classification of grahani

1. Vataja grahani

- Food digest with difficulty, Suktapaka, Visuchika.
- ➤ Passes stool with difficulty, Feces are either watery, Dry, Frothy, Small sized associated with flatus and undigested.
- Roughness of skin, dryness of Throat and Mouth, Hunger, Blurred vision, Tinnitus.
- Pain in Chest, Pelvic, Thigh, Neck region, Emaciation, Parikartika, Cough, Dyspnea.
- Craving for Sweet, Sour, Saline food (*Madhuradi rasa*).
- > Reduced mental strength.
- Adhmana (Distension of abdomen) occurs during digestion and after completion of digestion whereas the patient feels abdominal comfort just after taking meal.

2. Pittaja grahani

- ➤ Watery, undigested, yellowish stool.
- > Foetid and sour eructation.
- > Burning sensation in the cardiac region and throat.
- Anorexia and thirst.

3. Kaphaja grahani

- > Stool not well formed, Mixed with undigested food particles and Mucous and Heavy.
- ➤ Heaviness and Stiffness of abdomen.
- Nausea, vomiting, anorexia
- > Eructation with foul smelling and sweet taste.
- ➤ Patient does not feel Enthusiastic and There is suppression of libido.
- Patient is not emaciated still he feels Weakness and Laziness.

4. Sannipataja grahani

Mixed lakshan of Vataja, Pittaja, Kaphaja Grahani.

Medha is karma of pitta hence it can be deduced that vitiation in medha (Psychological function) contributes in grahani roga and in modern medical science also IBS associated with a "derailing of the brain-gut axis." Psychological factors may be important in the etiology of IBS. The outcome is the indigestion of ingested food i.e. production of pakwapakwam, mal absorption of the products of digestion, hyper motility of gut resulting in frequent evacuation of the bowel.

Other two types described by acharyas are

5. Samgraha grahani

- Antra kujan (Gurgling sound in intestine)
- ➤ *Alasya* (Malaise)
- Daurbalya (Weakness)
- > Drava, sheeta, ghana, snigddha, sakati vedana shakrita (Passes mala with pain in kati region which is watery, cold, solid & fatty in nature)
- Passes mala which is pichchila & aam yukta
- Appears once in interval of 15, 30 or 10 days or even daily.
- Diva prakopa, ratri shanty (pronounced during day & subsiding by night)
- > Sangraha Grahani occurs due to aam & vata and it is difficult to cure (krichcha sadhya).[30]

6. Ghantiyantra grahani

- > Svapatah parshyo shoolam (Pain in flanks when lying)
- ➤ Galajjal ghati dhvani (Noise in the abdomen resembling the sound of a water clock). [31]

Classification of irritable bowel disease

According to WHO DMS-IV code, classification for IBS and its subcategories, IBS can be classified as either

- 1. Diarrhoea-predominant (IBS-D)
- 2. Constipation predominant (IBS-C)
- 3. With alternating stool pattern (IBS-A) or pain-predominant.
- 4. In some individuals, IBS may have an acute onset and develop after an infectious illness characterized by two or more of the following: fever, vomiting, diarrhoea, or positive stool culture. This post-infective syndrome has consequently been termed "post-infectious IBS" (IBS-PI).[32]
- According to the Rome III criteria, and on the basis of patient's stool characteristics:

A. IBS with constipation (IBS-C)

- Hard or lumpy stools \geq 25 % of bowel movements
- Loose (mushy) or watery stools < 25 % of bowel movements
- More common in men
- Up to one-third of cases

B. IBS with diarrhoea (IBS-D)

- Loose (Mushy) or watery stools ≥ 25 % of bowel movements
- Hard or lumpy stools <25 % of bowel movements
- More common in women
- Up to one-third of cases

C. Mixed IBS (IBS-M)

- Hard or lumpy stools \geq 25 % of bowel movements
- Loose (mushy) or watery stools ≥ 25 % of bowel movements
- One-third to one half of cases

D. Complex IBS

Insufficient abnormality of stool consistency to meet criteria for IBS-C, D or M

It must be remembered however that:

- Patients commonly transition between these subtypes.
- The symptoms of diarrhoea and constipation are commonly misinterpreted in IBS patients. Thus, many IBS patients who complain of diarrhoea are referring to the frequent passage of formed stools and, in the some patient population, constipation may refer to any one of a variety of complaints associated with the attempted act of defecation and not simply to infrequent bowel movements.

Ayurveda classifies Grahaniroga mainly in four types which can be correlate in modern science like-

- 1. *Vataja grahani* Constipation-predominant IBS.
- 2. Pittaja grahani Diarrhoea–predominant IBS (IBS-D).
- 3. *Kaphaja grahani* Dysentery-predominant IBS.
- 4. Sannipataja grahani –Complex IBS.

Upashaya of grahani roga

Among ahara dravya shatika shali, mulaka, masura, mudga, go-gritha, go-dadhi, ajagritha and takra are advisable in grahaniroga. Among phalavarga dadima, kadali, bilwa, kapitha, jambuphala, tinduka and mahanimba are beneficial for grahanirogi. Soup prepared of shasha, ena and tittiramamsa serves beneficial. All types of matsya specially, khalis and khuddisa are indicated as pathya in grahaniroga. [33]

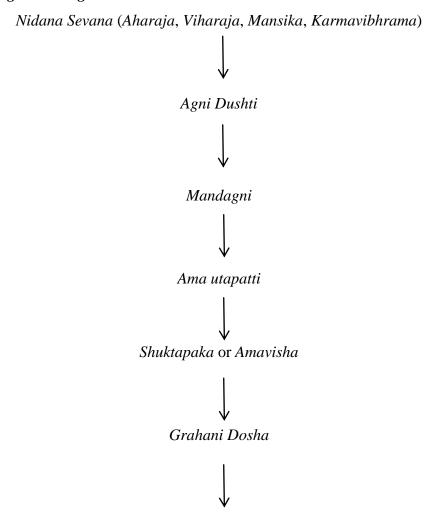
Upashaya (Demulcent factors) of IBS

1. Dietary habits

For IBS - C: (1) Increased fibre intake i.e. whole grain bread and cereals, beans, fruits and vegetables.

- (2) Plenty of water intake.
- For IBS D: (1) Moderate amount of soluble fiber such as whole wheat bread, oats, barley, brown rice, dry fruits etc. are advised to eat.
- (2) Foods at same temperature such as cold water and hot soup in the same meal should be avoided.
- (3) Broccoli, onions and cabbage should be avoided.
- 2. Management of stress and anxiety by relaxation therapy, biofeedback, hypnotherapy, cognitive behaviour therapy and psychotherapy.
- 3. Exercise and meditation can help to prevent constipation and ease stress.

Samprapti of grahani roga

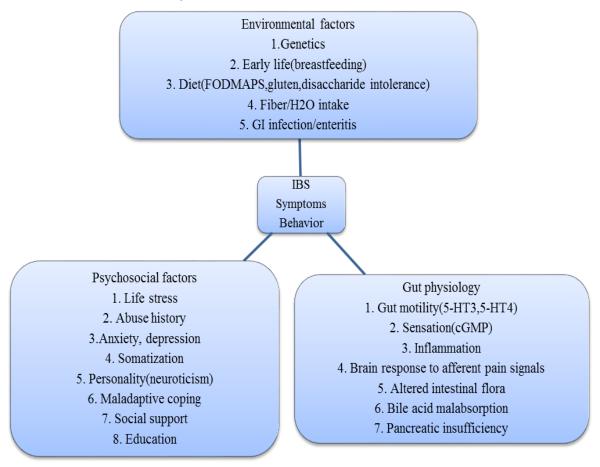


Grahani Roga

Samprapti ghataka

- Dosha- Tridosha
- Dushya- Anna, Rasa
- > Srotas- Annavaha, Purishavaha
- > Adhishthan-Pittadharakala, Grahani
- > Srotas dushti Atipravarti, Sanga
- ➤ Agni- Mandagni
- ➤ Vyadhiswabhava- Chirakari
- Sadhya-Asadhyata- Krachasadhya

Causes of irritable bowel syndrome



The pathogenesis of IBS is poorly understood, although roles of abnormal gut motor and sensory activity, central neural dysfunction, psychological disturbances, inflammation, stress and luminal factors such as bile acid mal absorption and gut dysbiosis have been proposed.

Sadhya-asadhyata of Grahaniroga

Sadhyasadhyata of Grahani roga is stated according to age group. [34]

- ➤ Bala (children) Sadhya (curable)
- ➤ Yuva (young) Kruchrasadhya (difficult to cure)
- ➤ Vriddha (aged) Asadhya (incurable)

Irritable bowel syndrome prognosis

For 10 % of people, IBS will go away over time. For most people, IBS is a chronic condition. Symptoms may get better and worse depending on your stress levels or other factors, but they will not resolve completely. IBS is not a life-threatening condition, but it can significantly impact the quality of life. [35]

CONCLUSION

Grahani roga is chronic disease of Annavaha and Purishavaha srotas developed due to alteration of Agni and Manas (Mind). The main treatment is correction of Agni i.e. indirectly treating indigestion. According to Ayurveda, Grahani is Tridoshatmak disease of digestive fire which occurs due to Agnidusti. As per the GIT system there is nervous involvement present in the various activities of GIT absorption and peristaltic movement. In this view Psychology also plays a major role in maintaining human health. Unusual psychology of a person about anxiety, anger, greed, etc. can affect the physiology of digestion, therefore; they disrupt homeostasis, which teaches Grahani. Satvavajaya chikitsa is also important as psychological factors also act as causative factor to the disease. Hence, i.e. counselling and enhancing the will power of the patient along with use of drugs which act on pittadharakala indirectly on manas (mind).

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