

A Comparative Clinical Trail to Evaluate the Efficacy of Indukanta Ghrita Matra Basti and Mustakarishtha with Changeri Ghrita Matra Basti and Maha Kalyanaka Kashaya in the Management of Grahani Roga vis-à-vis Irritable Bowel Syndrome (IBS)

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Abstract: *Grahani roga is the main disease of gastrointestinal tract. Conditions like Muhurbaddha muhurdrava malapravrutti, (irregular bowel habits) Ama mala privrutti (stool with mucus) UdaraShoola (abdominal pain), Ajeerna (indigestion), Aruchi (anorexia), Adhmana (distention of abdomen), have been described under the heading of Grahani Roga. Which analogues with Irritable bowel syndrome of contemporary medicine which is a chronic, relapsing functional disorder characterized by abdominal pain, bloating & changes in bowel habit. Present study is to evaluate and compare the efficacy of Indukanta ghrita matra basti and Mustakarishtha with Changeri ghrita matra basti and Maha kalyanaka kashaya in the management of Grahani roga vis-à-vis Irritable bowel syndrome. The clinical study with a pre-post test design included 42 subjects between the age group of 18-60 years. The results obtained after the completion of intervention showed statistically significant with 'p' value less than 0.001 and also overall assessment showed marked (75%) improvement in all 42 subjects. Grahani roga being Agni dushti and Pittadhara kaladushti janyavyadhi drugs which are deepana, pachana, vathanulomaka and grahi pacified the signs and symptoms of Grahani roga vis-à-vis IBS*

Keywords: *Grahaniroga irritable bowel syndrome Matra basti Mustakarishtha, Mahakalyanaka kashaya.*

1. Introduction

Present day life style factors such as irregular diet habit, sedentary work pattern and also tremendous mental stress cause disturbance in the digestive system, which results into many disorders of Gastro-intestinal tract. In today's practice, one can come across good number of patients suffering from the complaints related to G.I.T. These complaints vary from loss of appetite to chronic abdominal pain, irregular bowel habit, incomplete evacuation, chronic flatulence, constipation, diarrhoea and failure to thrive etc. These factors affecting people will not only disturb the growth and development of physical health but also social behaviour, immunity, mental strength and concentration power too. If above mentioned problems are remain untreated or unnoticed, they may turn in to its related complications.

Ayurveda considers that the dysfunction of *Agni* is responsible for improper digestion of food which leads to various functional and structural defects in the gastro-intestinal tract. *Grahaniroga* described in classical text books of Ayurveda represents a group of disorders of digestive system caused by the impairment of *Agni*. *Grahani* is the seat of *Jataragni* and situated above the umbilical region ⁽¹⁾ and is supported and nourished by the strength of *Agni*. *Grahani roga* is such a disorder where in, its significance is emphasized by its inclusion among *Ashta maha gada* ⁽²⁾. *Grahani roga* is a disease of great clinical relevance in the modern era because of its direct link with

the improper food habits and stressful lifestyle of the present times. Irritable bowel syndrome represents an important disorder among the various Gastro intestinal diseases which can be included under the heading of *Grahani roga*. The cardinal features of *Grahani roga* explained in the clinical text books of Ayurveda, have at most similarities with the clinical features of Irritable Bowel Syndrome (IBS) explained in contemporary medicine. Irritable bowel syndrome (IBS) is a functional bowel disorder characterized by abdominal pain or discomfort and altered bowel habit in the absence of detectable structural abnormalities ⁽³⁾. The global prevalence of IBS is 10-20% and occurs more in young adults. Young women are affected 2-3 times more often than men, Indian prevalence is 4.2% with male predominance.

As IBS is a motility disorder of colon, if not treated in time with proper medication, it tends to become chronic and causes severe distress to the subjects. Abnormal psychological features have been reported in over 80% of the patients especially in referral centres. The role of CNS factors in the pathogenesis of IBS is strongly suggested by the clinical association of emotional disorders and stress.

The general line of treatment for *Grahani roga* as per *Charaka samhita* includes *sadhyovamana* (in *saama avasta*, *kaphotklesha*) *agnideepana*, *amapachana*, *shodhana peyadikarma*, *basti* and *shamanoushadi* ⁽⁴⁾. As *Grahani roga* is caused due to *Agni dushti*, the main line of treatment

is to correct the *Agni dushti* by administering drugs which are *Deepana*, *Pachana*, *Grahi* and *vathanolomana* drugs. For *Ama-pakwashaya vikara bastichikitsa* is considered to be one of the best method of treatment. Analysing pathogenesis of *Grahani roga* which involves *Agni dushti*, *kala dushti* and *dushti* of *samana vata* and *apanavata* and some extend to *prana vata* also, it seems logical to consider *matra basti*. *Mustakarishtha* having *deepana*, *pachana* *sangrahi* property, indicated in *Grahani roga* and *Mahakalyanaka kashaya* is again one of the most selected formulations for the management of stress which is evident in *Grahani roga*.

2. Objectives of the Study

Primary Objective

To compare the effect of *Indukanta ghrita matra basti* and *Mustakarishtha* with *Changeri ghrita matra basti* and *Maha kalyanaka kashaya* in *Grahani roga* vis-a-vis Irritable bowel syndrome.

Secondary Objective

- 1) To evaluate the combined effect of *Indukanta ghrita matra basti* and *Mustakarishtha* in *Grahani roga* vis-à-vis Irritable bowel syndrome.
- 2) To evaluate the combined effect of *Changeri ghrita matra basti* and *Maha kalyanaka kashaya* in *Grahani roga* vis-à-vis Irritable bowel syndrome.

3. Materials and Methods

Source of data

Subjects were selected from the OPD and IPD of Government Ayurveda Medical College & Hospital, Mysuru and Government Hi-tech Panchakarma Hospital, a teaching Hospital of Government Ayurveda Medical College, Mysuru.

Study design

Comparative clinical trail with pre and post-test design. The study was completed in 42 subjects. Total 45 subjects were registered, there were 3 dropouts.

Inclusion criteria

- 1) Individuals of all gender between the age groups of 18-60 years with signs and symptoms of *Grahani roga* vis-a-vis IBS were included.
- 2) Both fresh and treated cases were taken.

Exclusion criteria

- 1) Subjects suffering with other systemic diseases which interfere with the intervention like uncontrolled Diabetes mellitus and uncontrolled Hypertension were excluded.
- 2) Individuals unfit for *basti* karma such as co morbidity of rectal pathology such as fissure, hemorrhoids, rectal prolapse were excluded from the study.
- 3) Volunteers with features such as severe anemia, rectal bleeding and significant weight loss were excluded.
- 4) Pregnant and lactating women were excluded.

Diagnostic criteria

The diagnosis was based on classical features of *Grahani roga* vis-a-vis IBS and Rome IV criteria

- 1) Muhur badda muhur drava mala pravrutti
- 2) Muhur muhur mala pravrutti
- 3) Amayuktha mala pravrutti
- 4) Udarashula
- 5) Admana

Rome IV criteria

Recurrent abdominal pain on average at least, 1 day per week in the last 3 months, associated with two or more of the following,

Related to defecation

Associated with a change in frequency of stool

Associated with a change in form (appearance) of stool

Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis.

Assessment criteria

Assessment was done based on the following parameter

<i>Baddamala</i>	Scoring
Once a day	B0
Alternative days	B1
Once in two days	B2
Once in three days	B3

<i>Dravamala Pravrutti</i>	Scoring
Normal once in a day	D0
Twice in a day	D1
2-4 times per day	D2
4-6 times per day	D3

<i>Muhur Muhur Mala Pravrutti</i>	Scoring
Normal once in a day	M0
Twice in a day	M1
2-4 times per day	M2
4-6 times per day	M3

<i>Amayukta Mala Pravrutti</i>	Scoring
No visible mucus in stool	A0
Visible mucus stuck to the stool	A1
Passage of mucus with frequent stool	A2
Passage of large amount of mucus in stool	A3

<i>Udara Shula</i>	Scoring
No udara shula	P0
Occasional udara shula	P1
Intermittent pain relieved by passage of flatus and stool	P2
Continues pain relieved of flatus and stool	P3

<i>ADMANA</i>	Scoring
No abdominal distention	G0
Occasional abdominal distention	G1
Frequently abdominal distention with increased flatulence & belching	G2
Rumbling/ gargling sound present in abdomen	G3

Investigations

The diagnosis and assessment of the study did not involve any mandatory investigations. However investigations were conducted to rule out other systemic disorders,

investigations like Hb%, TC, DC, ESR, Urine –sugar, albumin and microscopic examination and microscopic examination of stool for the presence of ova and cyst were carried out wherever necessary.

Statistical methods

The results were analysed statistically by using Descriptive statistics and Chi square test using service for statistical solution (SSPS) for windows software.

Intervention

For group A-

Indukanta ghrta matra basti was administered in *yoga basti* pattern for 8 consecutive days of intervention. From 9th day to 30th day, *Mustakarista* 45ml in three equally divided doses with lukewarm water as *anupana* (internally) was given.

For group B-

Changeri ghrta matra basti was administered in *yoga basti* pattern for 8 consecutive days of intervention. From 9th day

to 30th day *Mahakalyanaka kashaya* 45ml in three equally divided doses with lukewarm water as *anupana* was given. Total period of intervention: 30 days

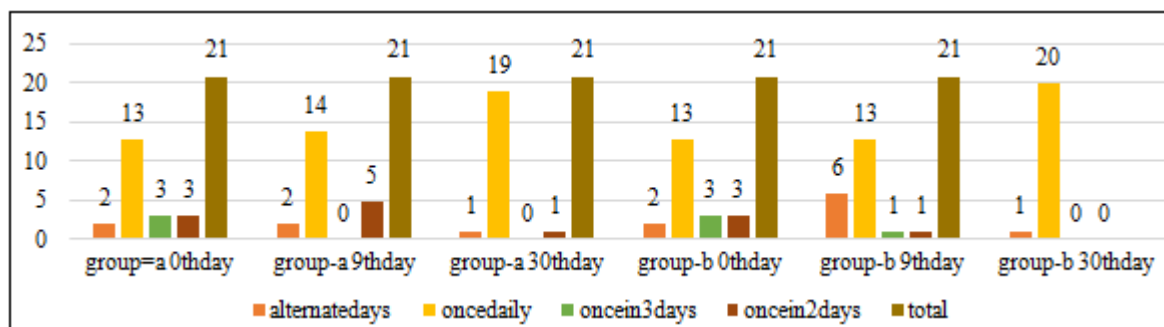
The assessment was done on following 3 schedule.

- 1) Pre test assessment – Before the commencement of intervention (0th day)
- 2) Mid test assessment - After the completion of basti (9th day)
- 3) Post test assessment – After the completion of intervention (30th day)

4. Observations and Results

The following observations were done in this study :maximum number of subjects between the age group 29-48 years, chronicity upto 10 yrs, more of *vata-pitta prakriti*, with *mandagni*, having spicy and irregular food intake habit and with the history of *amlapitta*.

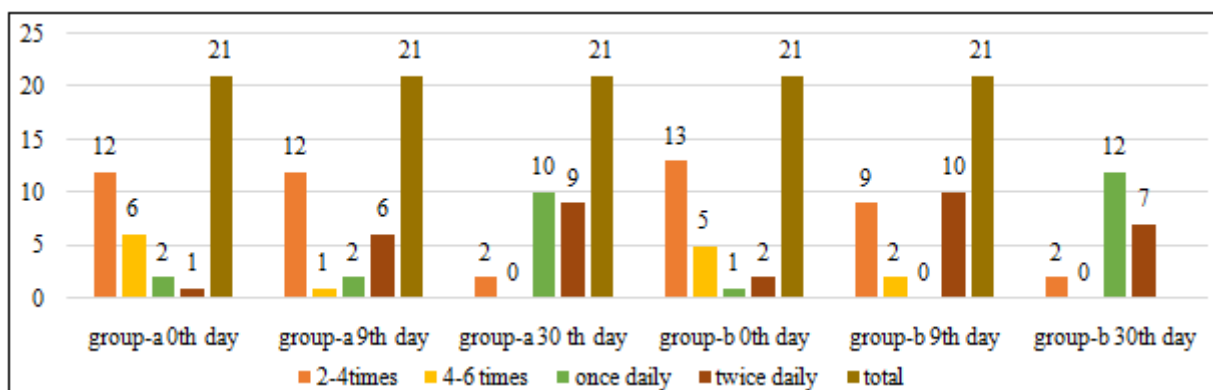
Result on *badda mala pravrutti*:



Among 42 subjects, 8 subjects in each group reported with *badda mala pravrutti* of various grade. Even in the global incidence diarrhoea predominant IBS is most common and same is observed in this study. Most of the subjects complained of ribbon or pallet like hard stools, experiencing delayed and incomplete evacuation, leading to *muhur muhur*

mala pravrutti with altered consistency. At the end of the study 2 in Group-A and 1 in Group-B continued with alternate day *mala pravrutti* symptom. Group- A showed 90% result in *badda mala pravrutti*. Group-B showed 95.5% result.

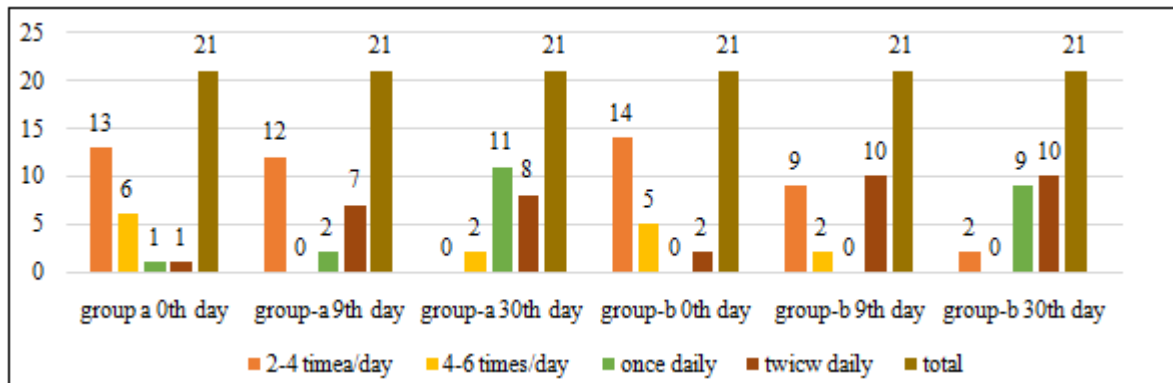
Result on *drava mala pravrutti*:



Subjects complaining of *drava mala pravrutti* ranging from 2-6 times per day. After intervention severity of the symptom reduced. In Group-A once daily *mala pravrutti* in 48% and twice daily *mala pravrutti* in 43% observed which can be considered as normal. In Group-B 57% with once

daily and 33% twice daily reported. So over all result in this symptom management showed significant result. Group-A showed 47.% result and Group- B showed result with 57%.

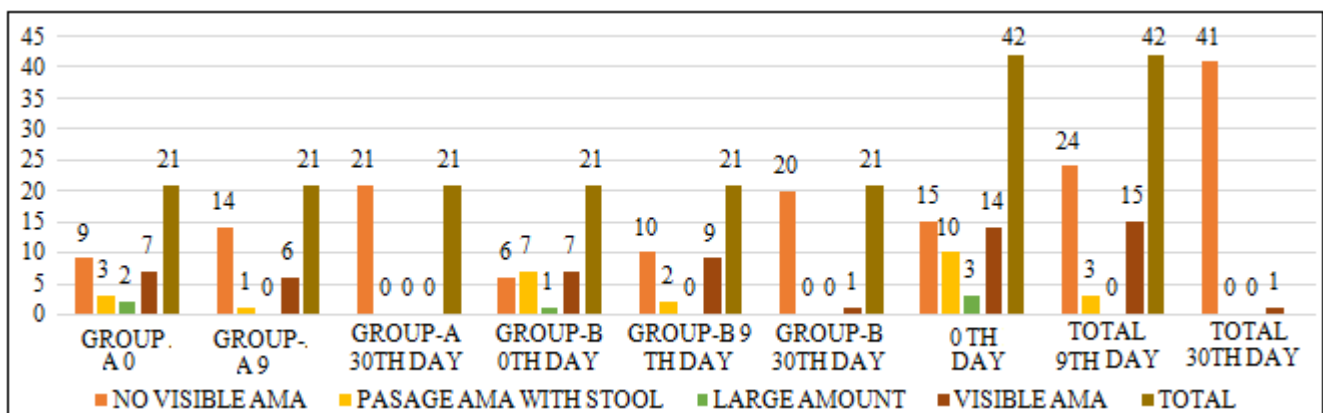
Result on *Muhur muhur mala pravrutti*:



In this condition grade 0 and 1 both considered normal, because bowel movement twice daily is *pravrutti*. And this is the cardinal symptom observed both in *badda* and *drava*

type of *mala pravrutti*. Group-A and Group-B both the groups showed better result with 90.5%.

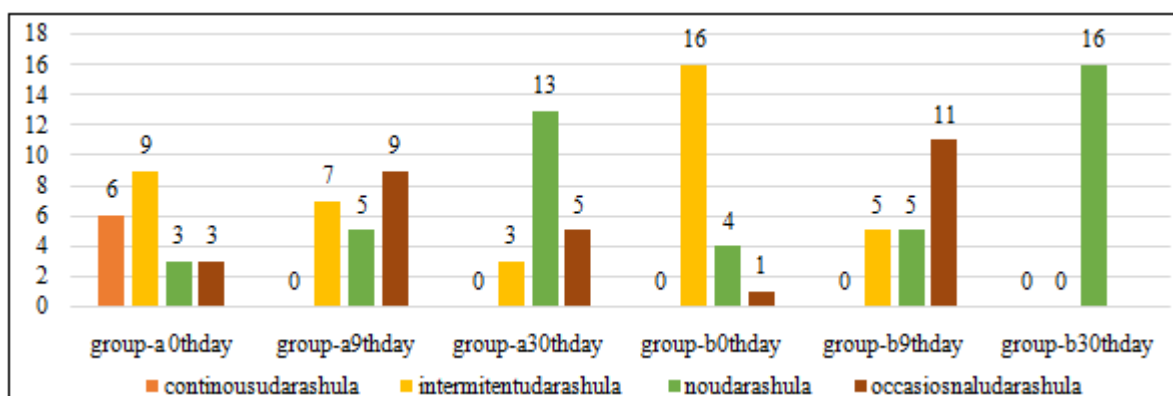
Result on Amayukta mala pravrutti:



About 12 subjects in Group-A and 15 subjects in Group-B showed ama in stool at different levels. Even though statistical insignificant between the groups was observed, on

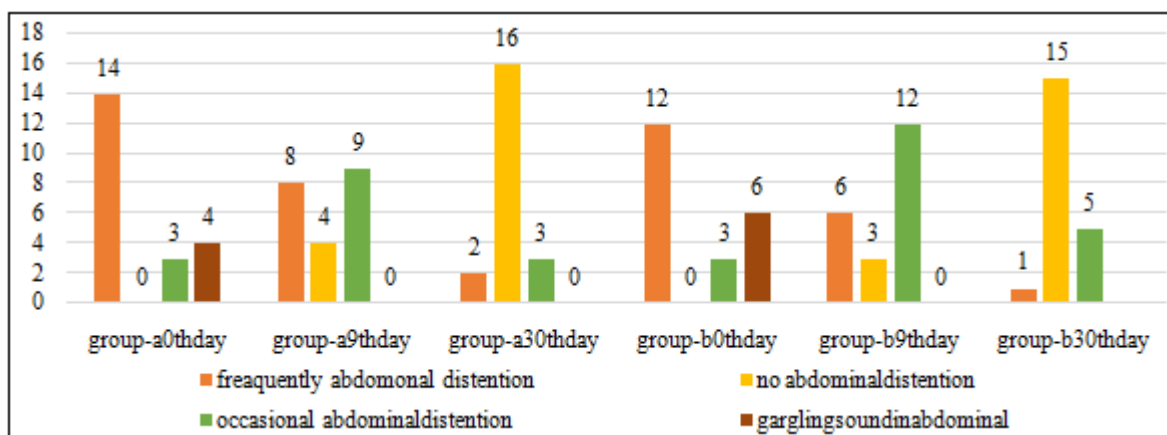
comparing the clinical results, Group-A showed 100% relief and Group-B with 98% relief in this symptom.

Result on Udarashula:



Among 42 subjects 6 subjects in Group-A had continues abdominal pain which was turned to occasional *Udara shula* after Indukanta ghrita matra basti. However after the intervention 8 members in both groups continued with occasional *Udarashula*. Totally with 62% remission in Group-A and 76% in Group-B showed better result.

Result on Admana



At the time of registration all the 42 subjects had *Admana* ranging from occasional abdominal distention to rumbling sound in the abdomen. After the intervention most of them were relieved from those symptoms. Both Groups showed better response in this symptom. Group A with 76.2% and Group B with 71.4% remission.

Table 1: Comparative Effect of intervention on signs and symptoms of *Grahani Roga* in both groups

S	Group A	Group B	Assessment
<i>Badda mala pravrutti</i>	90.5%	95.5%	Marked improvement in Group-B
<i>Dravamala pravrutti</i>	47.1%	57.1%	Moderate improvement in Group-B
<i>Muhur muhr mala pravrutti</i>	90.5%	90.5%	Moderate improvement in Group-A
<i>Amayuktha mala pravrutti</i>	100%	98%	Marked improvement in Group-B
<i>Udara shula</i>	62%	76%	Marked improvement in Group-B
<i>Admana</i>	76.2%	71.4%	Marked improvement in Group-A

5. Discussion

Strength of *Grahani* depends upon power of Agni present in it. The impairment of Agni leads to *dooshana* of *Grahani*. i.e., structural defect and functional impairment of *Grahani* resulting in *Grahani roga*. In Context of pathogenesis of *Grahani roga*, Sushruta samhita states that: *Grahani roga* occurs as a sequela of disease *Atisara*⁵. A person who has been relieved of *Atisara*, but is still having *mandagni*, if he takes injudicious food it leads to vitiation of Agni and then damages the organ *Grahani*. This condition is called as *Grahani roga*. Concept of *Grahani roga* is constructed with the consideration of symptoms like, *Muhur badda muhr drava mala pravrutti* as chief complaint associated with *Udara Shula*, *Aruchi*, *Atopa*, *Udara Gaurava*. Many diseases of GIT can be included under the broad heading of *Grahani roga*, among which Irritable bowel syndrome is one. Clinically it was observed that most of the symptoms of *Vataja Grahani roga* has the highest similarity with IBS. Abnormal gut motor activity which is the main clinical manifestation of IBS is attributed to *samana vata dusti* and also one of the symptom *Manasa sadana of vataja* *grahani roga* can be interpreted as abnormal psychological behaviour

which is evident in IBS. Due to improper *ahara* and *vihara nidana sevana*, *dravyathaha vrutti* of *pitta*, *manda* or *vishamata* of Agni occurs along with *karmataha dushti* of *samana vata* and *dravyathaha vrutti* of *kledaka kapha*. Vitiated dosha takes *stana samshraya* in *Grahani* which in turn vitiates *pittadhara kala* causing *lakshana* of *Grahani roga*.

Matra basti proved very effective because the formulations used such as *Indukanta ghrita* and *Changeri ghrita* possess *deepana*, *pachana*, *vatanulomana* and *grahi* property. *Ghrita* which is the fat media facilitates effective absorption of *dravya*. *Kashaya* and *madhura rasa* of ingredients present in this formulation locally reduced the irritation in intestinal wall. Thus may normalize the increased gut motility. Recent studies showed that *basti* mainly act by modulation of Brain-Gut axis and exerting neuro-endocrino-immunological action. Apart from this, local reflex action, modulation of gut microflora may have some role in explaining the pharmacological activities of *basti*. Based on the functions, *samana vata* can be correlated to the ENS which governs the entire GI tract. In real sense it is the stimulus of ENS (*samana vata*) that is sent to CNS and resulting in vagal stimulation and gastrin feed back mechanism (*prana vata*) leading to the muscular movements, secretion of gastric juices (*vyana vata*) for digestion, absorption and discrimination

*INDUKANTA GHRITA*⁶ is a well balanced preparation including the drugs which have *deepana*, *pachana* and *srotoshodhana* properties, essential for proper functioning of Agni. The ingredients are also have *balya*, *brumhana* and *rasayana* properties which are very important as mal absorption is evident in *Grahani roga*

*MUSTAKARISHTA*⁷, main ingredient is *Musta* in the form of decoction in this formula. *Musta* is an *agrya dravya* for the *sangraha*, *deepana* and *pachana* action, which justify the selection in *Grahani roga*. The main drug *Musta* (*Cyperus rotundus*) has shown tranquilizing property which can reduce anxiety and other mental disturbances.

All the ingredients of *CHANGERI GHRITA*⁸ having *deepana*, *pachana*, *grahi* and *vatanulomana* properties act effectively on *Grahani roga*. *Dadhi* as one of the ingredient proved best for its probiotic action and number of studies

showed that probiotics reduce abdominal pain, flatulence and also it reduces bowel movement.

MAHA KALYANAKA KASHAYA ⁹*Maha kalyanaka Kashaya* indicated in *Unmada rogadhikara* might had influence on mind regulating gut-brain axis. Having *swayamgupta* i.e., *Mucuna pruriens* which is the natural source of L-DOPA, which is a precursor for Dopamine, used in neurotransmitter diseases, and also possesses many other compound like serotonin., oxiptiptin etc, which acts as anti-depressant and neuro-protective. In *Grahani roga* indirect vitiation of *prana vata* is observed. Hence usage of this particular kashaya is claimed beneficial

6. Conclusion

Grahani roga is a disorder of digestive system caused mainly by the functional impairment of *Agni* with the involvement of *samana vata* and *apana vata*. The *samprapti* and *lakshana* of *Grahani roga* can be correlated to Irritable bowel syndrome. *Samana vata* and *apana vata dushti* explained in literature of *Ayurveda* can be correlated and understood with the abnormal gut motility and sensory activity in IBS. In this study, incidence observed, in relation to age, chronicity, symptoms, psychological features and the clinical features matches with the standard general observations of IBS. Diagnostic criteria of IBS i.e., Rome IV criteria has similarity with the *pratyatma lakshana* of *Grahani roga*. Result in between the Groups was statistically insignificant. However percentage wise improvement in symptoms showed better result in Group B.

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