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A Comparative Clinical Study on Evaluation of Therapeutic Efficacy of *Bilva* and *Mustak* in *Grahani Vikara* w.s.r to IBS.

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ABSTRACT:

Background & objectives: *Grahani* is a disease of great clinical relevance in the modern era because of its direct link with the improper food habits and stressful lifestyle. According to modern science this disease can be understood under the context of Irritable bowel Syndrome (IBS) characterized by abdominal pain and altered bowel habits with no particular structural pathology of the gastrointestinal tract. Nowadays world is moving towards the system looking eagerly for newer and safer drugs. So, there was selected a commonest and cost effective drug in the management of *Grahani*, in the welfare of society. In the present study *Apakva Bilva* fruit pulp in the form of *Choorna* (powder) was selected in the reference of classical texts of *Charak Samhita*.
Methods: A trail study was conducted in 40 patients fulfilling the criteria of *Grahani* and divided into two equal groups: Group A and Group B. Patients in Group A were treated with *Apakva Bilvaphala churna* 3gm with *Takra*(50ml) BID after food along with *Pathya Ahara* and *Vihara*.Patients in Group B were administered with *Mustaka Kanda* (Tubes) *churna* 3gm with *Takra*(50ml) BID after food along with *Pathya Ahara* and *Vihara*.It was used as a control group. The study was carried out for a period of one month. Subjective parameters of *Muhur Baddha / Muhur Drava Mala Pravritti*, *Mala Swaroop: Durgandhita /Picchila Mala*, *Udgara Pravritti : Madhura / Tikta / Amla*, *Trishna*, *Arochaka*,*Vidaha* were taken for study.
Results: The trial produced significant result among patients of Group A with Group B in regard to relief in subjective parameters. Outcome of study showed that the drug has vital action in remission of the symptoms.
Discussion & Conclusion: Thus, the study showed the effectiveness of *Bilva Churna* in alleviating symptoms of *Grahani.* in comparison to that of control drug *Mustaka Churna*.

Keywords: *Grahani*, Irritable Bowel Syndrome, *Apakva Bilva Churna*, *Mustaka Churna*.

INTRODUCTION

In present era world is moving towards faulty dietary habits, sedentary lifestyle, hectic schedule and stress are the key causative factors for all lifestyle diseases. All these causes disturb the function of digestion and absorption

leading to many digestive disorders. Presently majority of the population suffering from digestive disorders and *Grahani* is one of the digestive disorders. *Grahani* is a disease of great clinical relevance in the modern era because of its direct link with the improper food habits and stressful lifestyle. According to modern science this disease can be understood under the context of irritable bowel syndrome (IBS) characterized by abdominal pain and altered bowel habits with no particular structural pathology of the gastrointestinal tract. Now the world is moving towards the system looking eagerly for newer and safer drugs. Present study aims on the cost-effective drug in the management of *Grahani Vikar.*

Grahani Vikar

In Ayurved *Grahani* is described as the *Agni Adhisthana* by almost all *Acharyas*[1].*Acharya Sushruta* described that *Atisara* is considered as one of the predisposing factor of *Grahani Roga*. *Acharya Vagbhata* described that *Arsha, Atisara* and *Grahani Vikara* as '*Anyonya Nidana Bhuta Vyadhi* (one disease causes another disease)', where *Agnimandya* is the root cause for the disease. *Grahani* is the *Agni Adhisthana* (site of *Agni*) and also influenced by *Agni. Grahani* and *Agni* are interrelated as base-dependent integration. The main pathology lies in the *Dushti* of *Agni* due to indulgence in causative factors [2-3]. As per Ayurveda *Grahani* is the site of *Jathragni (Pachakgni) w*hich is the main *Agni* and responsible for digestion, absorption, assimilation and all the metabolic processes in the body. Conservation of *Agni* in its natural form is the basic concept of Ayurveda. *Mandagni* is the important factor which causes improper digestion which leads to *Grahani Dosha*.[4] Four types of *Grahani Vikara* have been mentioned in classics as- *Vataja, Pittaja, Kaphaja* and *Sannipataja*. *Agnimandya* and *Aama Awastha* of ingested food are the main pathological factors of *Grahani Vikara*.[5]It is expressed as disturbed digestion, absorption and assimilation. In modern science, *Grahani Vikar* is compared with Gastro-intestinal disorders and is the one of the main ailments being observed in world over communities in present scenario. Prevalence of *Grahani Vikar*a is increasing day by day in general populations due to altered dietary habits and especially in economically poor and illiterate section of the society.

Among the common clinical problems, there are probably a few one that challenge the skill of the physicians, *Grahani* is one of them. The treatment of *Grahani* is still a challenge for even modern medicine as complete cure cannot be assured in most cases of *Grahani* with any single synthetic or semi-synthetic drug. High cost, non-availability and toxic effects are also the accompanying drawback of these drugs. Also the relapses and modified forms of the disease are other practical problems in curing the disease.

Irritable bowel syndrome (IBS):

Irritable bowel syndrome (IBS) is a vague term for a variety of diseases causing discomfort in the gastro-intestinal tract and causing a great morbidity in the population. It is called by many names, among them colitis, mucous colitis, spastic colon, or spastic bowel. It is a functional bowel disorder characterized by chronic abdominal pain, discomfort, bloating, and alteration of bowel habits in the absence of any organic cause [6]. Certain psychological conditions are also more common in those with IBS. Diarrhea or constipation may predominate, or they may alternate (classified as IBS- D, IBS-C or IBS-A, respectively). IBS may begin after an infection (post-infectious, IBS-PI), a stressful life event, or onset of maturity without any other medical indicators[7].

Population-based studies estimate the prevalence of irritable bowel syndrome at 10-20% and the incidence of irritable bowel syndrome at 1-2% per year, out of which, approximately 10-20% seeks medical care. An estimated 20-50% of gastroenterology referrals relate to this symptom complex. The incidence is markedly different among countries. Irritable bowel syndrome affects 15 to 20% of Indian population[8]. Being a functional illness, it is not fatal. But it is a cause of chronic pain, fatigue, and other symptoms and it increases a patient's medical costs, and contributes to work absenteeism. It is worth remembering that patients of irritable bowel syndrome form nearly 50% of the cases seen in gastrointestinal clinics all over the world. It occurs more often in women than in men, approximately 50% of people with irritable bowel syndrome report symptoms beginning before they were aged 35 years [9].IBS according to Ayurveda can be considered as a disorder where there is a derangement of *Vata* in *Pakvashaya* especially of *Apana Vayu* leading to Symptoms of pain in abdomen & altered bowel habits. Mental status is also responsible for *Mandagni,* which leads to *Dosha Prakopa*[10]. The emotions like anger, fear and grief etc. have their own effects on the *Agni*[11]. Thus, disturbance in mental health directly affects the gastro intestinal tract.

There is no specific test for IBS, although diagnostic tests

may be performed to rule out other problems. Irritable bowel syndrome IBS is a diagnosis of exclusion. Hence Rome III Diagnostic Criteria [12] for Irritable Bowel Syndrome is universally accepted and followed in the present study.

MATERIALS AND METHODS

Selection of standard drug:

Mustaka has been described in Charak Samhita as best for *Samgrahi*, *Deepana* and *Paachana* action and has been prescribed in *Grahani Chiktsa*.[13]For the present study *Mustaka Churna* was selected[14].

Selection of trail drug:

The line of treatment of *Grahani* described by *Acharya Charaka* is-Ama dosha situated in *Pakvashaya*, should be evacuated by Purgative and*Deepan Dravya*. If *Ama dosha*is dispersed in whole body, then pacifies it by *Langhan* and *Pachana Dravya*.[15]. The *Bilva* (*Agele marmelos* Linn.) has been the most reputed drug in the traditional medicine for the treatment of Gastro-intestinal ailments.

The *Deepan* and *Pachan* property of the*Bilva* stimulate the *Agni* and digest the *Ama*. The *Katu vipaka* of *Bilva* also reduces the accumulation of excessive *Kapha* responsible for pathogenesis of the disease. Also the special *Grahi* property of the *Bilva* helps in solidification of the stool and absorption of excess *Kapha* or mucous from the lumen of the bowel. Thus Bilva may be considered as an ideal drug for the management of *GrahaniVikara*.[16-18.]So, *Bilva Phal Majja* (*Apakva* has been selected from Ayurvedic texts by their properties, action and therapeutic use in *Grahani* Vikara

Drug Source:

The drugs required for the study were identified, collected and prepared from pharmacy of Vaidya Yagya Dutta Sharma P.G. Ayurvedic College and Hospital, Khurja, Bulandshahr (U.P.).Both the drugs were standardized by the Pharmacognosy lab, Department of Dravyaguna, Faculty of Ayurveda, IMS, BHU, Varanasi with reference no. DG/18-19/231/S, date: 13/06/2019.

Inclusion criteria:

1. Patients of either sex with age between 20 and 40years.
2. Patients having classical signs and symptoms of *Grahani Vikar.*
3. Known case of IBS as per Rome III criteria: (Symptoms of recurrent abdominal pain or discomfort and a marked change in bowel habit for at least six months, with symptoms experienced on at least 3 days/month in the last 3 months associated with two or more of the following:
   - Pain is relieved bydefecation
   - Onset associated with the change of frequency ofstools
   - Onset associated with a change in form (appearance) ofstools.
4. Uncomplicated cases with classical pictures of *Grahani* have been selected.

Exclusion criteria:

1. Age below 20 and above 40 years.
2. Complicated cases multiple diseases with classical pictures of *Grahani* have been excluded from this study.

Withdrawal Criteria:

The participant would be withdrawn from the trial if –

- He/She develops any serious adverse effect (necessitating hospitalization)ornon-compliance of the treatment regimen (minimum 80% compliance is essential to continue in thestudy).

Criteria for Assessment:

The improvement provided by the therapy was assessed on the basis of classical signs and symptoms of *Grahani*. All the signs and symptoms were assigned score depending upon their severity to assess the effect of the drugs objectively.

Chief Complaints/ Subjective criteria: Table 1

Associated Symptoms: Table 2

IBS Severity Score:

The maximum achievable score is 500. Mild, Moderate and Severe cases are indicated by scores of 75 to 175, 175 to 300 and > 300 respectively. Subjects scored below 75 and patients scoring in this range were considered to be in remission (Francis CY et al).

Objective criteria:

- Hematology: Hemoglobin, TLC, DLC,ESR.
- Stool examination (Microscopic):Parasites (Ova/Cyst), Mucous, cells, Occult blood

Study Design:

Sample selection: Patients with complaints of the symptoms of *Grahani Vikar* as explained in the classics

were randomly selected from the OPD of Vaidya Yagya Dutta Sharma P.G. Ayurvedic College and Hospital, Khurja, Bulandshahar (U.P.) irrespective of religion, occupation and socioeconomic status. A randomized comparative clinical study designed and study was started after ethical clearance of the institute with reference no. 2016/IEC/147 on date 20/04/2017. A total 40 Patients were selected for the study and divided into 2 equal groups-Group A and Group B.

Sample size- Total 20 patients in each group were recruited in the study.

Sampling technique- Non probability convenience sampling were followed for the study.

Group A-were treated with *Apakva Bilva Phala Churna* 3gm with *Takra*(50ml) BiD after food along with *Pathya Ahara* and *Vihara*.

Group B- were administered with *Mustaka Kanda* (Tubes) *Churna* 3gm with *Takra* (50ml) BiD after food along with *Pathya Ahara* and *Vihara*.It was used as a control group.

Duration of Treatment: Total duration of treatment in present study was one months. Follow up was taken at an interval of one week with total three follow ups. Patient was advised to consult in between for any reactions, side effects or complications.

Statistical Tools:

A. The Wilcoxon signed-rank test is applied to the statistical data for evaluating the difference in the B.T. and A.T. scores of subjective parameters. In less number of observations where non parametric test (Wilcoxon signed-rank test) fails but parametric test (Normality Test) passes in that observation Students paired't' test is applied.
B. Chi square test is applied to the statistical data for evaluating the difference in the effects of two therapies symptom wise.

OBSERVATIONS & RESULTS

Table - 3: After diagnosis, the patients were randomly divided into two groups. In the present study, a total of 40 patients of *Grahani* were registered. Out of which 30 patients completed the course of the treatment, 10 patients discontinued the treatment.

Table - 4: Effect of Therapy on *Muhur Baddha / Drava Mala Pravritti.* In Group 1, *Muhur Baddha / Drava Mala Pravritti* was improved by 76.92% which is statistically highly significant whereas it is improved in *Group 2* by 84% was statistically highly significant.

Table - 5: Effect of Therapies on *Durgandhit /Picchila Mala Pravritti.* *Durgandhit / Picchil Mala Pravritti* was reduced up to 91.43% in *Group 1*, 83.33 % in *Group 2*. All these values were statically highly significant.

Table - 6: Effect of Therapies on *Madhura/ Tikta/ Amla Udgara Pravritti.* In Group 1 and Group 2, *Madhura/ Tikta/ Amla Udgara Pravritti* was improved by 100%.

Table - 7: Effect of Therapies on *Trishna*. *Trishna* was improved by 100% in *Group 1*, while it was improved by 96.55% in *Group 2*. All these values were statistically highly significant.

Table - 8: Effect of Therapies on *Arochaka*. *Arochaka* was improved by 88.89% in *Group 1*, 80.95% in *Group 2*. All values were statistically significant.

Table - 9: Effect of Therapies on *Vidaha.* In *both groups*, *Vidaha* was improved by 100% but the P value obtained was statistically insignificant.

Table-10: Effect of Therapy on chief complaints:

Chronic or recurrent abdominal discomfort or pain- The relief in this symptom was 67.39%, which was statistically highly significant.

Abdominal bloating- This symptom was completely relieved having a statistically highly significant.

Constipation(IBS-C)- The relief in this symptom was not found because only one patient had this symptom and that too did not complete the study.

Diarrhoea (IBS-D)- This symptom was relieved by 86.96%, which was statistically highly significant.

Urgency of bowel movements- The relief in this symptom was 97.50%, which was statistically highly significant.

Feeling of incomplete evacuation- The relief in this symptom was 89.13%, which was statistically highly significant.

Passage of mucus- Statistically highly significant result was found on this symptom as 100 % relief was found.

Table-11: Effect of therapy on Disease Specific Symptoms.

***Pravahana*(Tenesmus)-** The relief in this symptom was 95.65%, which was statistically highlysignificant.

***Udara Shula*(Pain in abdomen):** The relief in this symptom was 67.39%, which was statistically highly significant.

***Anaha*(Distention of abdomen)-** The relief in this symptom was 93.48%, which was statistically highly significant.

***Mala Taga Santushti* (Satisfaction after defecation)-** The relief in this symptom was 89.13%, which was statistically highly significant.

***Kapha Nihssarana*(Mucus in stool)-** The relief in this symptom was 100%, which was statistically highly significant.

***Mala Durgandha*(Foul odour of stool)-** The relief in this symptom was 100%, which was statistically highly significant.

***Udara Atopa* (Tympanites)-** The relief in this symptom was 97.83%, which was statistically highly significant.

***Bhojanopranta mala Tyaga*(Defecation after taking meals)-** The relief in this symptom was 100%, which was statistically highly significant.

***Gud Shula*(Pain in perianal region)-** The relief in this symptom was 100%, which was statistically highly significant.

Table- 12: Effect of therapy on IBS SEVERITY SCORE Effect of therapy on IBS SEVERITY SCORE showed a relief of 64.59 % that was statistically highly significant (p<0.001).

Objective Criteria:

Table - 13: Comparative Effect of Therapy on Hematological Parameters of the Patients of *Grahani*

From the above table, it can be seen that there is no significant difference (p >0.05) in the effect of therapies in group 1 and 2 on Haematological parameters. All the patients from both groups have found normal urine investigations, before and after treatment.

Overall Effect Of Therapy:

Table: 14 Overall effect of therapy on patients of *Grahani*

Table -15: Group wise total effect of therapy on signs and symptoms of *Grahani.* In Group 1the mean score was 19.23 before treatment which was reduced to 2.15 after treatment with 88.80 % relief. It was statistically highly significant (P<0.001). The mean score in Group 2was 19.85 before treatment which was reduced to after treatment with 88.37 %relief. It was also statistically highly significant(P<0.001). While evaluating the overall effect of therapy, it was observed that none of the patients showed mild improvement or remained unchanged.

DISCUSSION

In Group 1, *Muhur Baddha / Drava Mal Pravritti* was improved by 76.92% which is statistically highly significant whereas it is improved in Group 2by 84% was statistically highly significant. There is no significant difference (p >0.05) in the effect of therapies in group 1 and 2 on *Muhur Baddha / Drava Mal Pravritti,* i.e. both groups equally decreases *Muhur Baddha / Drava Mal Pravritti*. These are clear from the above description that *Bilva Churna* and *Mustaka Churna* had reduced the frequency of *Muhur Baddha Muhur Drava Mala Pravritti*. *Muhur Baddha / Drava Mal Pravritti* was dueto *Grahani Dushti, Vaishmya* of *Samana Vayu* by *Chala Guna* and *Pichhilta of Ama.* Most of the drugs in both the groups are *Ama Pachaka, Ushna, Vatanulomana, Deepana, Pachana* properties, so that they cured *Muhur Baddha / Drava Mala Pravritti*.

Effect on *Durgandhit / Picchila Mala Pravritti.*

Durgandhit / Picchila Mala Pravritti was reduced up to 91.43% in Group 1 and 83.33 % in Group 2. All these values were statically highly significant.There is no significant difference (p >0.05) in the effect of therapies in group 1 and 2 on *Durgandhit / Picchil Mal Pravritti,* i.e. both groups equally decreases *Durgandhit / Picchil Mala Pravritti*. These are clear from the above description that *Bilva Churna* had reduced *Durgandhit / Picchila Mala Pravritti., Durgandhit Mala Pravritti* symptoms is produced due to present of *Ama* in *Mala* and due to *Vistra Guna* of *Pitta*, while *Picchila Mala Pravritti* symptoms produces due to *Sama Mala.* both drugs have *Ama Pachaka and Shoshaka, Deepana, Pachana* properties, which helped to cure *Durgandhit / Picchila Mal Pravritti*.

Effect on *Madhura / Tikta / Amla Udgar Pravritti.*

In *Group 1 and Group 2, Madhura/ Tikta/ Amla Udgar Pravritti* was improved by 100%. As Wilcoxon's test failed and normality test passed so paired t test is applied to both groups. Both of the values were statistically significant. The effect of therapies could not be compared by chi-square test as column total in non significant improvement category is zero. According to pathology explained earlier, the food material in *Grahani* cannot be digested due to the presence of excessive *Ama.* The *Margavarodha* of *Vayu* formed by *Ama* generates *Pratilomatva* which suppresses the peristaltic movement. The food material becomes stagnant due to lack of peristalsis and excessive *Ama*. This result in *Madhura Udgar* and this upward reflux is performed by the *Pratiloma Udana* and *Apana Vayu.* Etiological factors vitiate *Agni,* leading to vitiation of *Pitta*

which produces *Tikta/ Amla Udgara.* Drug of Group 1and 2 is *Ama Pachaka Deepana, Pachana, Vatanulomana*. The drugs have *Deepana, Pachana* properties, which control initial *Ama* formation, and due to *Vatanulomana Udgara Pravritti* decreases.

Effect of Therapies on *Trishna*.

Trishna was improved by 100% in *Group 1,* while it was improved 96.55% in *Group 2.* All these values were statistically highly significant. The effect of therapies could not be compared by chi-square test as column total in non significant improvement category is zero. *Trishna* was due to *Ushna Guna* of *Pitta*. The drugs have *Deepana, Pachana* properties, which control initial *Ama* formation leading to *Pachana* of *Sama Pitta* and *Trishna* decreases.

Effect of Therapies on *Arochaka*.

Arochaka was improved by 88.89% in *Group 1*, 80.95% in *Group 2*. All values were statistically significant.There is no significant difference (p >0.05) in the effect of therapies in group 1 and 2 on *Arochaka,* i.e. both groups equally decreases *Arochaka*. It *is produced due to Rasa and Kapha Vridhhi and Ama*.The drugs have *Deepana, Pachana* properties, 100% *Ushna Virya* so that both drugs had decreased *Kapha* and *Ama* which cured *Arochaka*.

Effect on *Vidaha.*

In *both groups Vidaha* was improved by 100% but the P value obtained was statistically insignificant.The effect of therapies could not be compared by chi-square test as column total in non significant improvement category is zero. According to pathology explained earlier, the food material in *Grahani* cannot be digested due to the presence of excessive *Ama*. Consumption of etiological factors vitiates *Agni, leading to vitiation of Pitta which produces Anna Vidaha.* The food material becomes stagnant due to lack of peristalsis and excessive *Ama*. Finally this *Ama* converted in *Shuktapaka* due to this condition V*idaha* felt. The drug of Group 1 and 2 has *Deepana, Pachana* properties, which controls initial *Ama* formation and cures the symptom *Vidaha.*

Effect of therapy on chief complaints:

Abdominal discomfort was relieved by 100%, abdominal bloating was relieved by 100%, diarrhoea by 86.96%, urgency of bowel movements by 97.50%, feeling of incomplete evacuation by 89.13%, passage of mucous by 100%. The above effects were happened by due to their *Rasa, Guna, Virya, Vipaka* and *Karma*. *Deepana* and *Pachana Karma* were the key actions of the both drugs which relieves all the complaints.

Effect of therapy on specific symptoms:

Tendency of tenesmus was relieved by 95.65%, pain abdomen by 67.39%, distention of abd. by 93.48%, satisfaction after defecation by 89.13%, mucoid stool by 100%, foul odour by 100%, tympanitis by 97.83%, defecation after taking meals by 100% and pain in perianal region by 100%.

Above all the symptoms were relieved by due to both drugs having *Deepana* and *Pachana Karma* and also having *Vatanuloman karma*.

Effect of therapy on IBS SEVERITY SCORE:

The effect on IBS severity score was relieved by 64.59%, which revealed the significant relief was observed by the patients.

Overall Effect of the Therapy:

26.67% patients had complete remission in each group. 60 % patients of Group-1 and same 60% patients from group 2 were noted as marked improvement. 13.33 % patients in each group-1 and 2 were noted as moderateimprovement. Nobody was noted as mild improved and unchanged in bothgroups. In Group 1the mean score was 19.23 before treatment which was reduced to 2.15 after treatment with 88.80 % relief. It was statistically highly significant (P<0.001). The mean score in Group 2was 19.85 before treatment which was reduced to 2.31 after treatment with 88.37 %relief. It was statistically highly significant (P<0.001).

CONCLUSION

Kayagni is the leader of all factors concerned with digestion and metabolism in the living body. Vitiation of *Agni* leads to disease and *Samagni* state leads to health condition. *Ama* is the root cause of almost all diseases produced in the body. So, the treatment of any disease can be based on *Sama* and *Nirama Avastha*. When the vitiated *Doshas* get confined to only the organ *Grahani* (i.e. functional derangement), then could be called *Grahani Dosha*. When the vitiated *Doshas* travel throughout the *Rasadi Dhatus* i.e. *Sarvasharira Gatatva* (may be structural derangement) then it could be called as *Grahani Roga*. Small intestine (along with pyloric sphincter and ileo-caecal sphincter) can be anatomically and physiologically considered as *Grahani*. But the duodenum, part of *Grahani* is found to be most functional and controlling part of *Grahani*. A single disease entity cannot be correlated with *Grahani* as per modern science, even though malabsorption syndrome is more similar. Chronic colitis, tropical sprue, IBS, etc also can be included. Improper dietary habits and stressful life style of modern

era are the root causes for *Agni Dushti* and subsequently *Grahani* disease.

Bilva Churna used as *Deepana – Pachana,* and*Grahi* drugs. The drug has properties- *Laghu*and *Ruksha*, *Ushna Virya*, *Katu-Tikta Rasa* which made them *Agni Deepak*drug[19]. Pacification of *Ama* by *Deepana*and *Pachana* action at*Grahani Adhisthana* and *Pakvashaya. Shoshan*of *Ama by Grahi*action and *Ushna Virya*. All the actionspacify the symptomatology of *Annavaha Srotodushti*. *Mustaka Churna* has properties like *Katu, TiktaRasa, Katu Vipaka, Laghu, Ruksha Guna* acts as *Agni Dipaka* and also *Amapachaka*. *Tikta Rasa* and *Laghu, Ruksha Guna* helps in reducing *Sama Mala Pravriti* by digesting *Ama*.

On the basis of all results obtained in the study it can be concluded that *Bilva Churna* works more effectively on chief symptoms and *Rasvaha, Annavaha* and *Purishavaha Srotasas*, while Mustaka *Churna* shows better cure in associated symptoms and in *Udakvaha Srotasa* to the patients of *Grahani.* In short *Bilva Churna* shows better results than *MustakaChurna*.As the study sample was very small, further study of larger group of patients may help to understand detail mode and site of action of the drugs. The present study was a humble try in search of a better management of this disorder and it is fulfilled up to some extent.

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Table - 1: Chief Complaints/ Subjective criteria:

1. *Muhur Baddha / Muhur Drava Mala Pravritti*	2. *Mala Swaroop: Durgandhita/Picchila Mala*
3. *Udgara Pravritti : Madhura / Tikta / Amla*	4. *Trishna*
5. *Arochaka*	6. *Vidaha*

Table - 2:Associated Symptoms:

1. *Pad Shotha*	2. *Tama Pravesha*
3. *Chardi* (Vomiting)	4. *Aalasya*
5. *Jwara*	6. *Praseka* (Hypersalivation)
7. *Bala Kshaya*	

Table - 3: After diagnosis, the patients were randomly divided into two groups.

Category	No. of Patients		Total
	Group 1	Group 2	
Completed	15	15	30
Discontinued	05	05	10
Total	20	20	40

Table - 4: Effect of Therapy on *Muhur Baddha / Drava Mala Pravritti.*

Group	N	Mean		Mean Diff	% Relief	W	P
		BT	AT				
1	15	3.47	0.80	2.67	76.92	120	<0.001
2	15	3.33	0.53	2.80	84	120	<0.001

Table - 5: Effect of Therapies on *Durgandhit /Picchila Mala Pravritti.*

Group	N	Mean		Mean Diff	% Relief	W	P
		BT	AT				
1	15	2.33	0.20	2.13	91.43	120	<0.001
2	15	3.20	0.53	2.67	83.33	120	<0.001

Table - 6: Effect of Therapies on *Madhura/ Tikta/ Amla Udgara Pravritti.*

Group	N	Mean		Mean Diff.	%Relief	W	P
		BT	AT				
1	5	1.80	00	1.80	100	15	0.063
2	4	2.25	00	2.25	100	10	0.125

Table - 7: Effect of Therapies on *Trishna*.

Group	N	Mean		Mean Diff.	% Relief	W	P
		BT	AT				
1	11	2.00	00	2.00	100	66	<0.001
2	11	2.64	0.09	2.55	96.55	66	<0.001

Table - 8: Effect of Therapies on *Arochaka*.

Group	N	Mean		Mean Diff.	% Relief	W	P
		BT	AT				
1	6	3	0.33	2.67	88.89	21	0.031
2	8	2.63	0.50	2.13	80.95	36	0.008

Table - 9: Effect of Therapies on *Vidaha.*

Group	N	Mean		Mean Diff	% Relief	W	P
		BT	AT				
1	2	3	0	3	100	3	0.5
2	2	3.5	0	3.5	100	3	0.5

Table-10: Effect of Therapy on chief complaints:

Chief Complaints	Mean Score	%	SD	SE	t	p
Chronic or recurrent abdominal discomfort or pain	0.84	67.39	0.36	0.05	15.83	<0.001
Abdominal bloating	0.89	100	0.31	0.04	19.20	<0.001
Constipation(IBS-C)	0	0	0	0	0	0
Diarrhoea(IBS-D)	0.87	86.96	0.34	0.05	17.32	<0.001
Urgency of bowel movements	0.84	97.50	0.36	0.05	15.83	<0.001
Feeling of incomplete evacuation	0.89	89.13	0.31	0.04	19.20	<0.001
Passage of mucus	0.95	100	0.20	0.03	31.46	<0.001

Table-11: Effect of therapy on Disease Specific Symptoms.

Disease Specific Symptoms		Mean Score	%	SD	SE	t	p
1.	*Pravahana* (Tenesmus)	0.95	95.65	0.20	0.03	31.46	<0.001
2.	*Udara Shula* (Pain in abdomen)	0.84	67.39	0.36	0.05	15.83	<0.001
3.	*Anaha* (Distention of abdomen)	0.93	93.48	0.25	.03	25.39	<0.001
4. 5.	*Mala tyaga Santushti* (Satisfaction after defecation)	0.87	89.13	0.34	.05	17.32	<0.001
6.	*Kapha Nihssarana* (Mucus in stool)	0.95	100	0.20	0.03	31.46	<0.001
7.	*Mala Durgandha* (Foul odour of stool)	0.73	100	0.44	.06	11.29	<0.001
8.	*Udara Atopa* (Tympanitis)	0.97	97.83	.14	0.02	45	<0.001
9.	*Bhojanopranta mala tyaga* (Defecation after taking meals)	0.82	100	0.38	.05	14.62	<0.001
10.	*Gud Shula* (Pain in perianal region)	0.39	100	0.49	.07	5.37	<0.001

Table- 12: Effect of therapy on IBS SEVERITY SCORE

IBS SEVERITY SCORE	Mean Score	%	SD	SE	t	p
	198.04	64.59	52.20	7.69	25.73	<0.001

Table - 13: Comparative Effect of Therapy on Hematological Parameters of the Patients of *Grahani*

Investigation (n= 15)	Mean Difference Group 1	Mean Difference Group 2	S.D.±	S.E.±	't '	P
Hb (gms. %)	0.47	0.46	0.42	0.16	0.042	0.966
ESR(mm/hr)	12	12.13	11.63	4.35	0.031	0.975
WBC	193.33	193.33	960.63	359.43	0.00	1.00

Table: 14 Overall effect of therapy on patients of*Grahani*

Results	Group-1		Group-2	
	No.	%	No.	%
Complete remission (100%)	04	26.67	04	26.67
Marked improvement (76-99%)	09	60	09	60
Moderate improvement (51-75%)	02	13.33	02	13.33
Mild improvement (26-50%)	00	00	00	00
Unchanged (= and < 25%)	00	00	00	00

Table -15: Group wise total effect of therapy on signs and symptoms of *Grahani.*

Group	N	Mean		Mean Diff	% Relief	W	P
		BT	AT				
1	15	19.23	2.15	17.08	88.80	78	<0.001
2	15	19.85	2.31	17.54	88.37	78	<0.001