A CLINICAL STUDY ON GRAHANI ROGA AND ITS MANAGEMENT
BY AN INDIGENOUS HERBAL COMPOUND

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ABSTRACT

Grahani Roga is a disease of Annavaha Srotas caused due to the production of Ama and Mandagni. Elimination of vidagdha paka or apakwa anna through the anal canal is known as Grahani Roga. Acharya Charak has mentioned that Mandagni causes improper digestion of ingested food, which moves either in Urdhwa or Adho-Marga. When it goes into Adho-marga, then it leads to Grahani Gada. Acharya Sushrut has mentioned that, patients of Aritisra, during the stage of Agnimandya, if take incompatible diet, may lead to Grahani Roga. So Agni plays an important role for producing this disease. Muhurvdaddha muhurdravra mala pravriti (altered bowel habit), Slesma mala pravriti (mucous in stool) are the main symptoms of this disease. Considering the above effects the trial drug an indigenous herbal compound which contains Bilwa, Chavya, Chitraka and Sunthi in equal quantity was selected to reduce the pathogenesis of this disease. Most of the ingredient of this formulation possesses Ama Pachana, Agni Deepana and Grahi qualities. A total number of 45 patients were selected and divided into two groups. Simple random sampling methods were used in this study. In the study group 30 patients were given with the trial drug and in the other group patients were given with placebo drug. Mild to moderate improvements in symptoms of Grahani found in trial group. In placebo group patients also have shown certain improvement in the symptom of Tikta Amla Udgara and Mukha vairasya. Trial drug has shown more effective in bowel habit of Grahani patients.

Keywords: Grahani Roga, Agni, Ama Dosha, IBS, Ayurveda.

INTRODUCTION

Faulty lifestyle and excessive desires for wealth in a very short period of time and as a result of this anxiety, worry, anger, fear and depression leads to various types of gastro-intestinal tract disorders. Grahani Roga is the leading disorder of the gastrointestinal tract. Mandagni is the root cause of this disease, so all the aetiological factors of Agnidushti are the direct causes of Grahani Roga. The etiological factors which are responsible for Agnidushti are—Aharaja (improper diet pattern), complication of Panchakarma (Vypadpa of Vrshchana, Vamana and Snehana) and incompatibilities of Desha, Kala, Ritu and Vegadhara (suppression of natural urges). Psychological and emotional factors like jealous behaviour and excessive fear too have important role in causation of Grahani Roga. When a person consumes or follows above mentioned etiological factors of Agnidushti, it results in indigestion and Ama formation. Thus, the food attains Shuktata which leads to Annavisha formation. Here indigested food undergoes fermentative changes; produce so many diseases like poison does. Anna Visha gets located in the organ Grahani and disturbs the physiological process of digestion. When this undigested food goes into Adhomarga then it leads to Grahani Gada. Acharya Sushruta has mentioned that, patients of Aritisra, during the stage of Agnimandya, if take incompatible food or diet, may lead to Grahani Roga. Altered bowel habit, mucous and foul smell stool and flatulence are common symptoms of this disease. In the modern medical science, no disease or condition can correlate exactly to Grahani Roga, but the conditions which have very close similarity with the Grahani Roga are irritable bowel syndrome, mal absorption syndrome, celiac disease, tropical sprue, worm infestations like Amoebiasis and Giardiasis. These conditions are very common in India and developing countries. People initially neglect these problems and do not take any medication for the same till their routine gets disturbed. While seeking the treatment for this, patients were being advised with antimicrobials and anthelmintics which do not address the pathogenesis of the disease process rather this gives many unintended adverse effects. On viewing the above fact a comprehensive approach is necessary to solve this problem. So in this context the trial drug indigenous herbal compound was selected for this study which is described in Yoga Ratnakara Grahani Chikitsa. This formulation contains Bilwa (Aegle marmelos), Chavya (Piper chaba), Chitraka (Plumbago zeylanica) and Sunthi (Zingiber officinalis) in equal quantity which possesses Ama Pachana, Agni Deepana and Grahi properties. Most of the ingredients of this formulation are having digestive, anti-amoebic, anti-diarrhoeal, anthelmintic, anti-haemorrhagic, anti-spasmodic, carminative, appetite, anti-inflammatory, hepato protective, stomachic, anti-bacterial and anti-ulcerative properties. So considering above fact an attempt has been made to evaluate the efficacy of indigenous herbal compound in the management of Grahani Roga.

MATERIALS AND METHODS

Aims and objective

- To evaluate the efficacy of indigenous herbal compound in the management of Grahani Roga.
To compare the efficacy of indigenous herbal compound with placebo.

Source of data

45 numbers of patients of both the sex suffering from Grahani Roga were selected for this study from OPD and IPD of Gopabandhu Ayurveda Mahavidyalaya and Hospital, Puri, India. The study was carried out from October 2016 to April 2017. Ethical approval was obtained from IEC, GAM, Puri, India.

Diagnostic criteria

The patients with the classical symptoms like Muhurvaddha Muhurdrava Mala Pravriti (altered bowel habit), Shlesma Mala Prvriti (mucous in stool), Durugandhita Mala Pravriti (foul smell stool), Adhmana (flatulence) etc. were selected for this study.

Inclusion Criteria

Patients between 16-60 years of age group.

Exclusion Criteria

Patients suffering from acute diarrhea, gastric ulcer, peptic ulcer, ulcerative colitis, colitis associated with hemorrhage, intestinal tuberculosis, diabetes mellitus and hypertension.

Investigations

Following investigations were carried out:

- **Blood**: Hb (gm %), Total Leucocytes Count (TLC), Differential Count (DC), Erythrocyte Sedimentation Rate (ESR).
- **Urine**: Routine and microscopic examinations.
- **Stool**: Routine and microscopic examinations.

Plan of Study

There were two groups:

**Group A**: 30 patients were selected in this group and indigenous herbal compound was given internally at a dose of 5 gm twice daily with Takra as Anupana after food.

**Group B**: 15 patients were treated with control drug (placebo i.e. Laja powder).

Duration: 30 days, the assessments were carried out in each 15 days of the treatment.

Dietary Restrictions: As per the diet plan for Grahani Roga and Agnimandya.

Study design

Single group design

Effectiveness of treatment in trial group and control group were assessed individually before and after treatment.

Double Group Design

Effectiveness of treatment in trial group was assessed and compared with control group.

Assessment criteria

**Scoring Pattern**

Grading of parameters taken for assessment:

1. **Muhurvaddha Muhurdrava Mala Pravriti**
   - Grade 0: Passing of normal consistency stool.
   - Grade 1: Passing of stool (2-3 times /day) irregularly, without pain.
   - Grade 2: Passing of stool (3-5 times / day) just after meals, irregularly with pain.
   - Grade 3: Passing of stool more than 5 times/day just after meals, irregularly with pain.

2. **Shleshma Mala Pravriti (Presence of mucous in stool)**
   - Grade 0: No visible mucous in stool.
   - Grade 1: Visible mucous sticked to the stool.
   - Grade 2: Passage of mucous with frequent stool.
   - Grade 3: Passage of large amount of mucous in stool.

3. **Durghandhita Mala Pravriti**
   - Grade 0: Normal smelling of stool.
   - Grade 1: Occasionally foul smelling of stool.
   - Grade 2: Frequent foul smelling of stool.
   - Grade 3: Severe foul smelling of stool.

4. **Adhmana**
   - Grade 0: No abnormal gas.
   - Grade 1: Occasionally abdominal distension.
   - Grade 2: Frequent abdominal pain increased with abdominal distension.
   - Grade 3: Gargling sound present in abdomen.

5. **Tikta Amlodgara**
   - Grade 0: No complaint.
   - Grade 1: Occasionally during day or night.
   - Grade 2: 3 to 4 times per day.
   - Grade 3: More than 4 times per day.

6. **Aruchi**
   - Grade 0: No complaint.
   - Grade 1: Occasionally Arochaka.
   - Grade 2: Frequently Arochaka.
   - Grade 3: Severe Arochaka.

7. **Mukha Vairashya**
   - Grade 0: No Mukha Vairashya.
   - Grade 1: Occasionally Mukha Vairashya.
   - Grade 2: Frequently Mukha Vairashya.
   - Grade 3: Severe Mukha Vairashya.

8. **Trishna**
   - Grade 0: Normal thirst, take fluid normally.
   - Grade 1: Mild thirst, take water frequently.
   - Grade 2: Thirst increases, take water eagerly.
   - Grade 3: Feel excessive thirst; take water eagerly and never satisfied after taking a good amount of water.

Assessment of total effect of therapy

Based on the assessment of the symptoms, the total effect of therapy is evaluated and grouped according to following criteria.
1. Clinical assessment of result

- Complete Remission (Cured): 100% improvement in the symptoms
- Markedly Improvement: 75% or more relief in the symptoms (75%-99%)
- Moderate Improvement: 50% or more relief in the symptoms (50%-74%)
- Mild Improvement: 25% or more relief in the symptoms (25%-49%)
- Unchanged: Less than 25% improvement in the symptoms (0%-24%)

2. Statistical assessment of result

- For the purpose of statistical assessment of result Mean ± SD of each sign and symptom before treatment has been compared with Mean ± SD value after treatment. Paired t-test is being applied for the purpose of test of significance to evaluate the efficacy of drug to different sign and symptom.
- Also unpaired t-test has been applied to see the effect of trial drug in comparison to control drug for the different sign and symptom. The result has been assessed through p-value.

Observation

Age

Maximum numbers of patients i.e. 33.33% were from the age group of 49-60 years followed by 31.11% in 38-48 years age group. 26.67% patients were from age group of 27-37 years. The lowest numbers of patients i.e. 8.89% were in the age group 16-26 years.

Sex

The disease was found higher in males (66.67%) as compared to females (33.33%).

Socio-economic status

Majority of patients belonged to middle class family i.e. 57.78% and 33.33% of patient belonged to upper middle class family. Next to that 4.44 % of patients belonged to lower middle class and rich class each.

Nature of Diet

Patients taking mixed type of diet suffered somewhat more i.e. 82.22% than vegetarian patients 17.78%.

Dietary habit

Maximum number of patients i.e. 71.11% were having dietary habit of Vishamasana followed by 13.33% patients were having Adhyasana, 11.11% patients were having Samasana and 4.44 % patients were having Anasana.

Kostha

Maximum 66.67% patients were of Mridu Koshtha, 20% were of Madhyama Koshtha and 13.33% patients were of Krura Koshtha.

Mental Status

60% patients were in stress, 28.89% of patients were in pleasant mood, 8.89% patients were having depression, whereas only 2.22% of the patients were having frustration mood.

Shareera Prakriti

Maximum 51.11% patients were of Vataja-kaphaja Prakriti, 28.89% were of Pitta-kaphaja and 20% were of Vata-pittaja Prakriti.

Bowel Habit

Irregular bowel habit was found in 25 (55.56%) number of patients, 14 (31.11%) number of patients had loose motion, while constipation was observed in 6 (13.33%) of patients.

RESULT

From this clinical study it was found that in Trial Group patients, two patients (6.66%) got complete remission, 23 patients (76.67%) got maximum improvement and 5 patients (16.67%) were moderately improved. Similarly, in Control Group, no patients got complete remission, 02 number of patients (13.33%) got maximum improvement, 02 number of patients (13.33%) got moderate improvement, 09 patients (60%) got mild improvement and 02 (13.33%) patients had unsatisfactory change. Statistical analyses showing the effectiveness of Trial Drug and Placebo to different symptoms are shown in Table 1. Statistical analyses showing the effectiveness of Trial Drug in comparison to Placebo Group with reference to different symptoms are shown in Table 2.

DISCUSSION

Vitiated Agni is the main etiological factors of Grahani roga, which creates a cascade of events in the organ Grahani leads to various symptoms. Ama formation leads to Suktata and Anna which creates a cascade of events in the organ Grahani leads to vitiated Agni. Thus, to counter the Agni Vikara an indigenous herbal compound was selected as trial drug for the present study. As there was no standardized drug for Grahani Roga, the control group patients were given with placebo drug.

The trial drug contains four drugs viz. Bilwa, Chavaya, Chitraka and Sunthi in equal quantity. All of drugs are taken in powder form. In the context of Aygra Dravya Charak has mentioned Bilva is considered the best among Samgrahika, Deepaneeya and Vata-Kapha Prasamana. The active ingredient of unripe fruit pulp of Aegle marmelos contains Marmelosine and Tannic acid which helps in amoebic dysentery and infective diarrhea. The biochemical component Marmelosine does have antibacterial and anthelmintic properties whereas Tannic acid is having anti diarrheal properties. Chitraka is considered as best among Depaneeya, Pachaniya and Sulahara drugs. According to Sarangdhara Samhit, Sundhi and Gajapippali (Chavaya) are considered among best Grahi dravya. Zingerone in Zingiber officinalis has shown protective effect in hypermotility diarrhea. Significant effect of trial drug in Grahani cases may be attributed to correction of Jatharagri and Dhatwagni in the tissue level. All the four drugs of this compound are having appetizer, digestive, carminative, anti-inflammatory, anti-spasmodic, antibacterial, anti-amoebic and anti-ulcerative properties. Takra (Buttermilk) is used as Anupana in this study and it is considered as best in Grahani Roga. Thus, it might have effect in relieving the symptoms in this clinical trial.
| Sl. No. | Sign & Symptom | Group | Mean ± SD | Mean Diff±SD | d.f. (n-1) | t-value | p-value | Remark |
|--------|----------------|-------|-----------|--------------|------------|----------|---------|--------|
| 1      | Mukuravaddha   | TG    | 2.70±0.47 | 1.53±0.51   | 29         | 16.86    | <0.001  | ****   |
|        | Muhurdrava     |       |           | 2.40±0.62   |            | 21.15    | <0.001  | ****   |
|        | Mala Pravriti  | AT1   | 1.37±0.38 | 0.53±0.52   | 14         | 4.00     | <0.001  | ****   |
|        |                | AT2   | 1.05±0.63 | 0.80±0.56   | 14         | 5.53     | <0.001  | ****   |
| 2      | Shlesma Mala   | TG    | 2.45±0.57 | 1.41±0.50   | 29         | 8.90     | <0.001  | ****   |
|        | Pravriti       | AT1   | 2.14±0.74 | 0.31±0.47   | 28         | 15.50    | <0.001  | ****   |
|        |                | AT2   | 1.50±0.56 | 1.93±0.46   | 14         | 3.23     | <0.01   | **     |
| 3      | Durgandhita     | TG    | 1.75±0.52 | 1.00±0.38   | 27         | 9.00     | <0.001  | ****   |
|        | Mala Pravriti  | AT1   | 0.75±0.44 | 0.46±0.58   | 27         | 10.33    | <0.001  | ****   |
|        |                | AT2   | 1.29±0.60 | 1.45±0.52   | 10         | 2.89     | <0.02   | *      |
|        |                |       |           | 0.82±0.60   | 10         | 4.50     | <0.001  | ****   |
| 4      | Adhmana         | TG    | 1.96±0.51 | 1.14±0.71   | 27         | 6.49     | <0.001  | ****   |
|        |                | AT1   | 0.82±0.67 | 0.32±0.55   | 27         | 13.99    | <0.001  | ****   |
|        |                | AT2   | 1.64±0.62 | 2.14±0.36   | 13         | 3.68     | <0.002  | ***    |
| 5      | Tikta Amla Udga| TG    | 1.72±0.67 | 1.06±0.42   | 17         | 5.83     | <0.001  | ****   |
|        | Udra           | AT1   | 0.67±0.49 | 0.33±0.49   | 17         | 11.75    | <0.001  | ****   |
|        |                | AT2   | 1.39±0.50 | 1.83±0.41   | 5          | 3.16     | <0.02   | *      |
|        |                |       |           | 0.83±0.41   | 5          | 5.00     | <0.02   | ***    |
| 6      | Aruchi          | TG    | 1.88±0.54 | 1.21±0.51   | 23         | 6.78     | <0.001  | ****   |
|        |                | AT1   | 0.67±0.48 | 0.44±0.50   | 23         | 14.04    | <0.001  | ****   |
|        |                | AT2   | 1.46±0.51 | 1.88±0.64   | 7          | 2.05     | <0.05   | #      |
|        |                |       |           | 0.75±0.71   | 7          | 3.00     | <0.02   | *      |
| 7      | Mukha Fairasya | TG    | 2.17±0.51 | 1.11±0.58   | 17         | 10.76    | <0.001  | ****   |
|        |                | AT1   | 1.06±0.42 | 0.56±0.62   | 17         | 13.63    | <0.001  | ****   |
|        |                | AT2   | 1.61±0.50 | 2.13±0.64   | 7          | 3.00     | <0.02   | *      |
|        |                |       |           | 1.38±1.06   | 7          | 3.67     | <0.01   | **     |
| 8      | Trishna         | TG    | 2.00±0.56 | 1.00±0.46   | 19         | 9.75     | <0.001  | ****   |
|        |                | AT1   | 1.00±0.46 | 0.45±0.60   | 19         | 11.46    | <0.001  | ****   |
|        |                | AT2   | 1.55±0.60 | 1.43±0.53   | 6          | 1.55     | <0.05   | #      |
|        |                |       |           | 0.71±0.95   | 6          | 1.99     | <0.05   | #      |

| Sl. No. | Sign & Symptom | Group | Mean ± SD | Mean Diff±SD | d.f. (N-2) | t-value | p-value | Remark |
|---------|----------------|-------|-----------|--------------|------------|----------|---------|--------|
| 1       | Mukuravaddha   | TG    | 1.17±0.38 | 0.53±0.52   | 43         | 4.22     | <0.001  | ****   |
|         | Muhurdrava     | AT1   | 0.53±0.52 | 2.40±0.62   | 43         | 8.70     | <0.001  | ****   |
|         | Mala Pravriti  | AT2   | 0.80±0.56 | 0.13±0.35   | 42         | 6.11     | <0.001  | ****   |
| 2       | Shlesma Mala   | TG    | 1.03±0.63 | 0.33±0.64   | 42         | 7.46     | <0.001  | ****   |
|         | Pravriti       | AT1   | 0.75±0.44 | 0.45±0.52   | 37         | 1.66     | >0.05   | #      |
|         |                | AT2   | 1.29±0.66 | 0.82±0.60   | 37         | 2.12     | <0.05   | Just   |
|         |                |       |           | significant at 5% level |  |         |         | level |
| 3       | Durgandhita     | TG    | 0.82±0.67 | 0.71±0.73   | 40         | 0.46     | >0.05   | #      |
|         | Mala Pravriti  | AT1   | 0.82±0.67 | 0.71±0.73   | 40         | 0.46     | >0.05   | #      |
|         |                | AT2   | 0.71±0.73 | 0.71±0.73   | 40         | 0.46     | >0.05   | #      |
On observation it has been shown that, the middle class and upper middle-class family members are affected more. Both the class people pay more attention to maintain their status in the society, which causes mental stress and vitiation of Vata Dosha produces Vishamagni and later on Grahani Roga. On dietary habit, it has been found that Vishamagni and Adhyasana type of dietetic habit produce Ama in the body; finally, it results into occurrence of disease. On psychological aspect maximum numbers of patients were in mentally stress condition. Emotional anxiety and stress lead to vitiation of Agni and it results into Amavastha of Grahani Roga. This study showed that irregular bowel habit is more common in Grahani Roga.

As regards to improvement in different signs and symptoms it has been found that, after completion of treatment the trial drug was found to be statistically significant in relieving all the symptoms.

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The trial drug was found to be effective in relieving the symptom Muhurvaddha Muhur Drava Mala Pravriti. It might be attributed to Grahi, Deepana and Pachana properties of composed drugs. Shlesma Mala Pravriti was relieved because of Bilvya and Shunthi having the properties of Grahi. Durgandhita Mala Pravriti was subsided because Chitraka and Chavya are the best Deepana Pachana dravya which enhances the power of Agni and improves digestion. Ushna veerya and Deepana Pachana properties of this formulation might have helped in relieving the symptoms of Adbhana. Ushna Veerya and Katu Vipaka of both Sunthi and Chavya act as a natural appetizer and it might have effect in relief in Aruchi.

**CONCLUSION**

Grahani Roga is a disease entity goes hand in hand with gastrointestinal disorders. It is a common health problem for all age group which hampers the daily life activities. Grahani Roga represents a group of digestive disorders where Samana Vayu, Pachaka Pitta and Kledaka Kapha Dusti occur with significant vitiation in Agni and Ama Dosha. The indigenous herbal compound targets the Agni, Pitta and Vata Dosha in Grahani Roga. Hence it meets the requirement of Chikitsa Sutra of Grahani Roga. Significant improvements were found in most of the common symptoms. With these obtained results, it can be concluded that this trial formulation is effective in the management of Grahani Roga. As sample size in this study was small the results were not conclusive in many symptoms. Further studies with more cases may give new insights in clinical management of Grahani Roga.

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