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Role Of ‘Pravahikahara Yoga’ In The Management Of Pittaja Pravahika W.S.R. To Amoebic Dysentry: A Clinical Trial.

Alok Kumar Srivastava¹, ²Gyanendra Datta Shukla², K. K. Sharma³, Shweta G. Shukla⁴, Mohita Bohra⁵

¹Associate Professor, Dept. of Panchakarma, Rishikul Campus (Haridwar), Uttarakhand Ayurveda University, Dehradun.
E mail: virgo.alok@gmail.com

²Assistant Professor, Dept. of Panchakarma, Rishikul Campus (Haridwar), Uttarakhand Ayurveda University, Dehradun.
E mail: dr.gdshukla@gmail.com

³Professor and Head, Department of Panchakarma, Gurukul Campus (Haridwar), Uttarakhand Ayurveda University, Dehradun.
E mail: kripayanam@yahoo.com

⁴Assistant Professor, Dept. of Kaya Chikitsa, Rishikul Campus (Haridwar), Uttarakhand Ayurveda University, Dehradun.
E mail: dr.shwetans83@gmail.com

⁵M.D. Scholar 2nd year, Dept. of Panchakarma, Rishikul Campus (Haridwar), Uttarakhand Ayurveda University, Dehradun.
E mail: mohita.india @gmail.com

ABSTRACT:

Pravahika is one of the most common diseases in the tropical countries and its severity varies from mild to severe fulminating type including life threatening complications sometimes. In modern parlance it is closely related with amoebic dysentery which is a national health problem in India and other developing and tropical countries, which is caused by Entamoeba histolytica, a parasite amoeba found in 25% of Indian population in their colon. Only a small proportion of all those harboring E. histolytica in the colon suffer with invasive form of amoebiasis. Here, the efficacy of Pravahikahara Yoga which contains dried powder of seeds of Kutaja (Holarrhena antidysenterica), herb of Mustak (Cyperus Rotandus), Fruit pulp of unripe Bilwa (Aegle marmelos), bark of Babool (Acacia arabica), Epicarp of Dadima fruit (Punica granatum) and the fruit pulp of Amaltas (Cassia fistula), is tested in the treatment of Pittaja Pravahika. 8 patients of Pittaja Pravahika were registered and were given Pravahikahara Yoga 2 tea spoons full (approx. 5 gm) 3 times a day with Dhanyaka Him as Anupana for 45 days. The result was calculated statistically for different assessment criteria and found to be significant. It may be new academic contribution to research workers and beneficial to the whole medical field.

INTRODUCTION

Amebiasis is highly endemic in the Tropics especially Africa, Latin America, India and South-East Asia.¹ It affects mainly those people who belongs to such family, society or place where the dietary habit and personal hygiene and sanitation are poor.² The reason for being more prevalent in tropical areas of the world is poor sanitation which allows food and water supplies to be exposed to fecal contamination. The similar cause is described by our Acharyas in Ayurvedic classics which are Ahitashana & Krimi.³
According to Sushruta, Pravahika is a clinical condition which is characterized by Pravahan (Tenasmus) during defecation, increased frequency of defecation and passing out small amount of faeces.[4]

On the basis of Rupa (Prominent clinical features) Pravahika has following types:[5]

(a) Vataja Pravahika
(b) Pittaja Pravahika
(c) Kaphaja Pravahika
(d) Raktaja Pravahika

These are aggravated by Ruksha and Sheet, Ushna and Tikshna, Snigdha and Sheeta, Ushna and Tikshna respectively.

The basic cardinal symptoms of Pravahika are given as (i) Tenasmus (ii) Increased frequency of defecation and (iii) decreased amount of faeces in defecation.[6] Along with these cardinal features if fever and burning sensation in the body are the prominent features, it is known as Pittaja type of Pravahika.

Amoebiasis is the second leading cause of death from parasitic diseases worldwide.[7] The causative protozoan parasite – Entamoeba histolytica is a potent pathogen.[8] The genus ENTAMOEBA contains many species, some of which (i.e., E HISTOLYTICA, ENTAMOEBA DISPAR, ENTAMOEBA MOSHKOVSKII, ENTAMOEBA POLECKI, ENTAMOEBA COLI, and ENTAMOEBA HARTMANNI) can reside in the human interstitial lumen. Of these, E HISTOLYTICA is the only one definitely associated with disease; the others are considered non-pathogenic.[9] In other words Amoebiasis is the infection of human gastrointestinal tract by E.histolytica, a protozoan parasite that is capable of invading the intestinal mucosa and may spread to the other organs mainly to the liver.[10] Once inside the body, amoeba clump together to form a cyst that is protected by the stomach’s digestive acid. When the cyst passes through the intestines it breaks open infecting the body. The amoebae burrow into the intestinal wall and cause small ulcers or abscesses. Cysts exit the body via faeces but are still able to live outside, that is why many people become infected. Amebic colitis affects both sexes equally.[11] However, invasive amebiasis is much more common in adult males than in females. In particular, amebic liver abscess is 7-12 times more common in men than in women, with a predominance among men aged 18-50 years.[12] Spread of amebiasis to the liver occurs via the portal blood. The findings according to a study suggest that E HISTOLYTICA organisms are able to kill hepatocytes without direct contact.[13]

E HISTOLYTICA is transmitted primarily through the fecal-oral route. Infective cysts can be found in fecally contaminated food and water supplies and contaminated hands of food handlers. Sexual transmission is possible, especially in the setting of oral-anal practices (anilingus). Poor nutrition, through its effect on immunity, has been found to be a risk factor for amebiasis.[14]
Amoebiasis is an important health problem, especially in developing countries.\[15\]

**Symptoms of amoebic dysentery:**

Clinical presentation can vary from fulminant colitis to mild, intermittent episodes of blood-tinged diarrhea. Associated symptoms include fever (< 40% of patients), weight loss, dehydration, and anorexia. Symptoms can persist for months to years with asymptomatic intervals.\[16\],\[17\] Amoebic dysentery is just an intestinal manifestation and the infection can also result in serious extra-intestinal manifestations to affect the basic function of the body like liver abscess, brain abscess, pericarditis, etc.\[18\]

Amoebic dysentery is primary stage of amoebic infection and may have very dangerous complications to affect the basic function of the body.

Although many single drugs clearly indicated for 'Pravahika' but we have tried a compound formulation for the better efficacy on the patients of 'Pravahika'. Temporarily this trial drug has been given the name 'Pravahikahara Yoga' for easy identification. 'Pravahikahara Yoga' contains six drugs as shown in Table 1.

**MATERIAL AND METHODS**

**A. Aims and Objectives**

**E. Drug**

**Table I. Contents of the Pravahikahara Yoga**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name</th>
<th>Guna</th>
<th>Rasa</th>
<th>Virya, Vipaka</th>
<th>Part used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bilwa ((Aegle marmelos))</td>
<td>Laghu, Ruksha</td>
<td>Kashaya, Tikta</td>
<td>Ushna, Katu</td>
<td>Pulp of fruit</td>
</tr>
</tbody>
</table>
2. Mustak (Cyperus Rotandus)  
Laghu, Kashaya, Tikta Katu, Sheeta Katu
Sheeta Katu
Panchang (whole plant)

3. Kutaj (Holarrhena antidysenterica)  
Ruksha Tikta, Kashaya Sheeta Katu
Seeds (Indrayava)

4. Aragvadha (Cassia fistula)  
Guru, Mridu, Snigdha Madhura, Tikta Sheeta Madhura
Fruits pulp

5. Babbula (Acacia arabica)  
Guru Kashaya Sheeta, Katu
Bark & Fruits

6. Dadima (Punica granatum)  
Laghu, Snigdha Madhura, Kashayam, Amla Anushma, Madhura
Epicarp of Fruit

**F. Posology**

The drug 'Pravahikahara Yoga' was prepared in the form of powder and packed in 100 gms of packs and was given to the patient.

**Dose:** 2 Tea spoon full (approx. 10 gm) after meal 3 times per day with Dhanyaka Hima as Anupana.

**Duration of Study:** 45 Days.

**G. Clinical Trial**

**Table II.** Grading system of different symptoms of Pravahika.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Grade (0)</th>
<th>Grade (1)</th>
<th>Grade (2)</th>
<th>Grade (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenasmus before defecation</td>
<td>Nil</td>
<td>Mild &amp; Occasional</td>
<td>Moderate &amp; Frequent</td>
<td>Severe &amp; Continuous</td>
</tr>
<tr>
<td>Increased frequency of defecation</td>
<td>1-2 times</td>
<td>2-3 times</td>
<td>3-6 times</td>
<td>6-9 times</td>
</tr>
<tr>
<td>Urgency of defecation after</td>
<td>No</td>
<td>Mild &amp; Occasional</td>
<td>Moderate &amp; Frequent</td>
<td>Moderate &amp; Definite</td>
</tr>
</tbody>
</table>

Total 8 patients of Pittaja Pravahika were registered.

All patients were treated with 'Pravahikahara Yoga' with Dhanyaka Hima as Anupana. Simultaneously microbial study of stool was carried out for the assessment of intestinal amoebiasis.

**H. Parameters of Assessment**

**Subjective Assessment:** Table II shows grading of different symptoms of Pravahika.
meals

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>Total no. of patients</th>
<th>No. of Patients having symptoms</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain in lower abdomen &amp; anal region</td>
<td>Nil</td>
<td>Mild, relieved after defecation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate &amp; decreased after defecation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe &amp; not relieved after defecation</td>
<td></td>
</tr>
<tr>
<td>Burning sensation in anal region</td>
<td>No</td>
<td>Mild</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Severe</td>
<td></td>
</tr>
<tr>
<td>Amount of mucous with stool</td>
<td>No</td>
<td>Occasional</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moderate amount &amp; often</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Large amount and always</td>
<td></td>
</tr>
<tr>
<td>Stool mixed with blood</td>
<td>No</td>
<td>Occasional</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Often</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

**Microbiological Study:** All the patients were subjected to microbial examination of stool to find out Trophozoits, ova or cysts of Entamoeba Hystolytica. Out of 8 patients, ova/cysts of E. Hystolytica were found in the stool of 1 patient.

**1. Selection of Cases**

Total 8 cases of Pittaja Pravahika were registered.

On the basis of clinical features it was observed that among 8 patients of Pittaja Pravahika all had tenasmus, increased frequency of stool and urgency of defecation after meals. Whereas 2 patients out of 8 had pain in lower abdomen and anal region, all had burning sensation in anal region and 03 out of 8 had stool with mucus. Also, none of the patients had stool with blood.

**Table III.** Occurrence of the different symptoms of Pravahika in the patients of Pittaja Pravahika.

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>Total no. of patients</th>
<th>No. of Patients having symptoms</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenasmus</td>
<td>08</td>
<td>08</td>
<td>100</td>
</tr>
<tr>
<td>Increased frequency of stool</td>
<td>08</td>
<td>08</td>
<td>100</td>
</tr>
</tbody>
</table>
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After the administration of the medicine, results were noted down after each follow up of the two. Also, the results were recorded after the completion of the treatment. The results in case of main distinguishing features were as follows:

1. Tenasmus before defecation

**Table IV.** Showing evaluation of results after each follow up on the symptom of Tenesmus.

<table>
<thead>
<tr>
<th>Group</th>
<th>BT M+ SD</th>
<th>F1</th>
<th>F2</th>
<th>AT</th>
<th>Within group comparison paired 't' test (BT-AT)</th>
<th>S.D.</th>
<th>S.E.</th>
<th>‘t’ Value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pittaja Pravahika</td>
<td>2.67 ± 0.52</td>
<td>2.00 ± 0.63</td>
<td>0.83 ± 0.41</td>
<td>0.17 ± 0.41</td>
<td>2.50</td>
<td>0.74</td>
<td>0.26</td>
<td>11.18</td>
<td>P&lt;0.001HS</td>
</tr>
</tbody>
</table>

2. Increased frequency

**Table V.** Showing evaluation of results after each follow up on the symptom of Increased frequency
3. Urgency of defecation after meal

Table VI. Showing evaluation of results after each follow up on the symptom of urgency of defecation.

<table>
<thead>
<tr>
<th>Groups</th>
<th>BT (M+SD)</th>
<th>F1</th>
<th>F2</th>
<th>AT</th>
<th>Within the groups comparison paired 't' test (BT-AT)</th>
<th>S.D.</th>
<th>S.E.</th>
<th>‘t’ Value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pittaja Pravahika (n=8)</td>
<td>3.00 ± 0.00</td>
<td>2.00 ± 0.63</td>
<td>0.83 ± 0.75</td>
<td>0.17 ± 0.41</td>
<td>2.83</td>
<td>0.53</td>
<td>0.18</td>
<td>t = 17.00</td>
<td>P &lt; 0.001 HS</td>
</tr>
</tbody>
</table>

4. Burning Sensation in anal region

Table VII. Showing evaluation of results after each follow up on the symptom of Burning sensation in Anal Region.

<table>
<thead>
<tr>
<th>Group (B)</th>
<th>BT</th>
<th>F1</th>
<th>F2</th>
<th>AT</th>
<th>Within group comparison paired ‘t’ test (BT-AT)</th>
<th>S.D.</th>
<th>S.E.</th>
<th>‘t’ Value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pittaja Pravahika (n=8)</td>
<td>3.00 ± 0.00</td>
<td>2.67 ± 0.52</td>
<td>1.50 ± 0.55</td>
<td>0.50 ± 0.55</td>
<td>2.50</td>
<td>0.75</td>
<td>0.27</td>
<td>t = 11.18</td>
<td>P &lt; 0.001 H.S.</td>
</tr>
</tbody>
</table>

Patients showed marked remission in the symptom of tenesmus as the initial mean score.
before treatment was 2.67 which reduced to 2.00 after first follow up and 0.83 after second follow up and became 0.17 after the completion of the treatment. Similarly, in the symptom of increased frequency the initial mean score was 3.00 which
came to 2.00 after first follow up, reduced as low as 0.83 after second follow up and became 0.17 after treatment. In case of the symptom of urgency of defecation after meal the initial mean score was 2.17 which came down to 1.17 after first follow up, 0.50 after second follow up and significantly reduced to 0.00 after the completion of the treatment.

The effect of treatment on the symptom of burning sensation in anal region which is the main characteristic feature of Pittajā Pravahikā, was remarkable as the initial mean score before treatment was 3.00, which reduced to 2.67 after first follow up and 1.50 after the second follow up and finally after completion of the treatment it became 0.50.

All these results were found to be highly significant when compared according to the paired ‘t’ test that showed P<0.001 in all cases.

**DISCUSSION**

Ayurvedic pathogenesis of Pravahika involves Samanā and Apana Vayu-dusthī along with Pachaka Pittā and Kledaka Kapha dusthī, ultimately leads to Agni-dushthī and Doshaprapkāpa which results into production of symptoms of Pravahika. Diagnosis is often made on the basis of presence of typical symptoms and specific symptoms described as a characteristic feature of various types of Pravahika. Laboratory diagnosis of intestinal amoebiasis is made by the presence of ova, cyst or trophozoits of *Entamoeba histolytica* in stool of patients. Recent researchers in modern science proved that the etiological factors according to Ayurveda, act as triggering factors in production of Pravahika. The results of the clinical study showed significant results and thus proved the efficacy of the *Pravahikahara Yoga* used in this trial.

Most of the drugs in *Pravahikahara Yoga* are Tridosha Har, Samgrahi, Agni Pradeepak & Pachaka and Rasayanā & Vrishyā. They are very clearly indicated for Pravahika*. Samgrahi Guna is very useful to control increased frequency of defecation and to maintain the consistency of stool. *Deepana & Pachana* quality of drug is very useful to treat the ‘Agni’ for digestion of the food material properly. Rasayanā and Vrishyā quality of drugs are helpful to maintain the normal metabolism of body. *Snigdha* Guna brings the disturbed function of Samanā Vayu to normalcy. *Laghu* Guna increases the strength of Agni and decreases the abnormally increased Pittā. *Kashaya* Rasa & *Ushna* Virya control the ‘Kapha’ and very effective in Aama Pachana. Madhur, Tikta Rasa and Sheet Virya pacify the increased frequency.

Raw fruit of Bilwa (*Aegle marmelos*) is Deepana, Pachana and Grahi.[15] Hence, it corrects the Agni and controls the increased frequency of stool. Mustaka (*Cyperus rotundus*) is considered as the best Deepana-pachana and Samgrahi.[20] Also, it is *Krimighna*. Hence, perfectly works for the Aam Pachana and destruction of protozoa. Because of its Sheeta Veerya, Mustaka pacifies Pitta.[22] Kutaja (*Holarrhena antidysenterica*) is Deepana, Stambhana[23] hence, acts on the symptom of increased frequency of defecation and urgency of defecation after meals. It is Ruksha, Tikta, Kashaya and Sheeta hence controls Pitta.[24] Aragvadha (*Cassia fistula*) has Sheeta Veerya hence, pacifies Pitta.[25] Dadima (*Punica granatum*) fruit is Deepana and Grahi[26] and thus helps in the management of the increased frequency of defecation.

Various fraction of *Holarrhena antidysenterica* showed promising activity against the experimental amoebiasis in rats and hamsters.[27] The fruit extract showed anti-protozoal effect against human *Entamoeba histolytica* stain STA, *Trypanosoma evansi*, anticancer effect against human epidermoid carcinoma of nasopharynx in tissue culture and hypoglycemic activity in rats.[28]
**Aegle marmelos** is proved to be an excellent and effective remedy in controlling acute diarrhoea. It contains a large amount of tannins which effectively control nonspecific diarrhoeas. Holarrhena antidysenterica along with **Aegle marmelos** and other herbs is known to help control diarrhoea. H. antidysenterica has been found to be more effective in treating Entamoeba histolytica positive patients compared to another herb *Hemigraphis birta*. A combination of **Aegle marmelos**, *Punica granatum*, *Tinospora cordifolia* along with other herbs is known to have potential antispasmodic activity. In addition, *Punica granatum* has shown anthelmintic activity in vitro studies.

The above instances show that major contents of this compound have proven effect on amoebic dysentery. And also, the study confirms the efficacy too.

Hence, the ‘Pravahikahara Yoga’ works perfectly well for the management of Pittaja Pravahika.

**CONCLUSION**

This clinical trial was done to derive an easy and affordable remedy for the management of ‘Pittaja Pravahika’, and to prevent serious complications further ahead. From the clinical trial done, the results clearly show highly significant improvement in the all the symptoms viz.- tenasmus before defecation, increased frequency, urgency of defecation after meal and burning sensation in anal region. The low sample size was the limitation factor of the study even then the promising results have paved the way for further scope of research on the Yoga named ‘Pravahikahara Yoga’ to extend the vision of the study.

**REFERENCES**


