Clinical Research

A clinical study of Devadarvyadi-Vati on Grahani Dosha in children

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Abstract

Childhood period is considered as the period of rapid growth and development, as it is the crucial stage of establishing future. Gastro-intestinal disorders show high prevalence in pediatric practice. These conditions generally produce chronic illness. Grahani Dosha is a disease related with Agnidushti. This condition is seen more in childhood period due to faulty dietary habit and changing lifestyle. The present paper deals with study on etiopathogenesis of Grahani Dosha and evaluates the efficacy of Devadarvyadi-Vati. The etiological factors and symptoms were observed carefully to make clear etiopathogenesis. Total 32 patients (3-12 years) were registered and randomly divided into two groups. In Group A Devadarvyadi-Vati (treated group) and in Group B Bhunimbadi-Vati (control group) given for 4 weeks with Koshna Jala. In Group A (Devadarvyadi-Vati), marked improvement was observed in 21.43% of the patients, moderate improvement was observed in 57.14% of patients and mild improvement was observed in 21.43% of patients.

Key words: Bhunimbadivati, Devadarvadyavati, Grahani Dosha

Introduction

Children are always put in a special category and they require more attention. In children, the diagnosis as well as prognosis based on strength of the clinical features should be made at the earliest possible, so that the management could be fixed soon.[1]

Diseases of digestive system constitute a major problem in India. It is certain that socioeconomic and environmental factors are responsible for a much greater prevalence of digestive disorders. Digestive diseases commonly affect the persons at the prime period of their life i.e., in the young - most productive part of the life and the children during the crucial stage of growth and development. Most of the digestive diseases are chronic or recurrent and lead to more disability than acute transient illness. Grahani Dosha is a disease related with gastrointestinal disorders. This condition is seen more in childhood period due to irregular dietary habit like over-eating; more ingestion of cool, heavy, dry, fried and dehydrated food. A wide variety of gastrointestinal symptoms like loss of appetite, abdominal pain, nausea, vomiting, constipation, etc., have been reported in children. Gastrointestinal disorders show high prevalence in pediatric practice. But in today’s era, this condition mostly goes unnoticed under the burden of antibiotics or at times is either not reported by the child or is not taken up seriously by the parents. These conditions generally hamper growth and development of the child and produce chronic illness. Proper care of digestive diseases in children will help in “Adding life to years...as well as years to life.”

The formulation having the property of Deepana-Pachana has been selected for present study in the form of Devadarvyadi-Vati as treated group mentioned by Acharya Charaka in Chikitsa Sthana Grahani Dosha Chikitsa Adhyaya 15/99. It contains six herbs: Devadaru [Cedrus deodara (Roxb.) Loud], Vacha (Acorus calamus Linn.), Musta (Cyperus rotundus Linn.), Sunthi (Zingiber officinale Rosc.), Ativisha (Aconitum heterophyllum Wall. ex Royle) and Haritaki (Terminalia chebula Retz.).

Bhunimbadi-Vati has been selected as control group mentioned in Charaka Samhita Chikitsa Sthana.[2] It consists nine drugs: Bhunimba (Svertia chirayata Roxb. Ex Flem.), Katuki (Pierorhiza kurroa Royle ex Benth), Shunthi (Zingiber officinale Rosc.), Maricha (Piper nigrum Linn.), Pippali (Piper longum Linn.), Musta (Cyperus rotundus Linn.), Chitraka (Plumbago zeylanica Linn), Kutaja [Holarrhena antidysenterica (Roxb. ex.Flem) Wall] and Indrayava [Holarrhena antidysenterica (Roxb.ex.Flem) Wall]. The collected drugs were authenticated in the pharmacognosy laboratory of IPGT and RA, Jamnagar.
**Aims and objectives**

- To study the etiopathogenesis of *Grahani Dosha* in children.
- To evaluate the clinical efficacy of *Devadarvyadi-Vati* in comparison to *Bhunimbadi-Vati* in the management of *Grahani Dosha* in children.

**Materials and Methods**

**Selection of the patients:** Patients (3-12 yrs), having signs and symptoms of *Grahani Dosha* have been selected from O.P.D. of *Kaumarabhritya* Dept., I.P.G.T. and R.A., G.A.U., Jamnagar hospital after excluding conditions like congenital disease, hereditary disease, worm infestation and infectious disease. A special research proforma was prepared for study based on Ayurvedic literature.

**Sampling method:** Simple random sampling method.

**Grouping**

Group A: *Devadarvyadi-Vati* (treated group)

Group B: *Bhunimbadi-Vati* (control group)

Dose: 3.5-12.5 gm according to age. *(SharangadharaSamhita)* in three divided doses.

*Anupana:* *KoshnaJala.*

Duration: 4 weeks

Follow up: 2 months

**Criteria for Assessment**

Assessment has been done based on the improvement in signs and symptoms and investigations. The scoring pattern adopted for the assessment of clinical features is as follows:

1. **Muhurbaddha Muhurshithila Mala Pravritti:**
   - 0 - Passing of normal consistency stool (1 time/day) in the morning.
   - 1 - Passing stool irregular (1-2 times/day), without pain.
   - 2 - Passing stool irregular (2-3 times/day), with pain.
   - 3 - Passing stool irregular and just after meal (3-4 times/day), with pain.
   - 4 - Passing stool irregular and just after meal (>4 times/day), with pain.

2. **Anaddhodarata:** (Distention of abdomen)
   - 0 - No complaint.
   - 1 - Rarely complaint once in a week.
   - 2 - Distention of abdomen after taking meal, up to 1 hour.
   - 3 - Distention of abdomen after taking meal, up to 1-3 hours.
   - 4 - Distention of abdomen after taking meal, up to 6 hours.

3. **Arochaka:**
   - 0 - Taking normal diet with interest.
   - 1 - No interest in taking normal diet.
   - 2 - Food has taken forcefully.
   - 3 - Not taken a food even forcefully.

4. **Balakshaya:**
   - 0 - No weakness.
   - 1 - Weakness but performs day-to-day activities.
   - 2 - Weakness and difficulty in performing day-to-day activities.
   - 3 - Child cannot able to get up from the bed.

5. **Alasya:**
   - 0 - Enthusiastic.
   - 1 - Occasionally, the baby is in lethargic condition.
   - 2 - Often, the baby is in lethargic condition.
   - 3 - Persistent.

6. **Klama:**
   - 0 - No exhaustion.
   - 1 - Exhaustion with moderate work.
   - 2 - Exhaustion with mild work.
   - 3 - Exhaustion without effort.

7. **Trishna:**
   - 0 - Normal thirst.
   - 1 - Mild thirst, take water frequently.
   - 2 - Thirst increase.
   - 3 - Feel excessive thirst, never satisfied after taking a good amount of water.

8. **Mukha-Vairasya:**
   - 0 - No complaint.
   - 1 - Occasionally.
   - 2 - Frequently.
   - 3 - Whole day.

9. **Tikta-Amlodgara:**
   - 0 - No complaint.
   - 1 - Occasionally.
   - 2 - 1-3 days/week.
   - 3 - 3-5 days/week.
   - 4 - 5-7 days/week.
   - 5 - All the 7 days.

10. **Praseka:**
    - 0 - No complaint.
    - 1 - Mild salivation.
    - 2 - Moderate salivation with nausea occasionally per day.
    - 3 - Excessive salivation with nausea and with often vomiting.

11. **Antrakujanam:**
    - 0 - Presence of 5-6 symptoms.
    - 1 - Presence of 4-5 symptoms.
    - 2 - Presence of 3-4 symptoms.
    - 3 - Presence of 2 symptoms.
    - 4 - Absence of all the symptoms.

12. **Abhayavarana Shakti:**
    - 0 - Good quantity thrice a day.
    - 1 - Good quantity twice a day.
    - 2 - Normal quantity twice a day.
    - 3 - Less quantity twice a day.
    - 4 - Less quantity once a day.

13. **Jarana Shakti:**
    - Scoring according to *Jeerna Aahara Lakshana* present after 6 hours after taking food. They are Utsaha, *Laghuta, Udgarushuddhi, KshudhaTrishnaPravritti* and *YathochitMalotsarga.*
    - 0 - Presence of 5-6 symptoms.
    - 1 - Presence of 4-5 symptoms.
    - 2 - Presence of 3-4 symptoms.
    - 3 - Presence of 2 symptoms.
    - 4 - Absence of all the symptoms.
Laboratory investigations
- Routine and microscopic examination of stool.
- Routine and microscopic examination of urine.
- pH value of stool.
- Mala parikhana by ayurvedic method.

Habits (Regular/Irregular), Number of motions, Akriti (Appearance) of the stool (Cylindrical/Not define), Samhatatva-consistency (Semisolid/Hard), Varna, Gandha and Jala Parikshana (Plots/Sinks in water) of stool was assessed.

Dietary restrictions
The patients were strictly advised to follow the restrictions regarding food habits and life style and to avoid the possible causative factors for Agnimandya like Vishamashana, Sheeta Jala Sevana, etc.

Assessment of total effect of therapy
No improvement - 0 %
Mild improvement - 0-25%
Moderate improvement - >25-50%
Markedly improvement - >50-75%
Complete remission - 100%

Paired ‘t’ test was carried out to evaluate the statistical significance of the results obtained at the end of the therapy.

Clinical study
Total 32 patients were registered and randomly divided into two groups. Out of 32 patients of Grahani Dosha, 24 had completed the course of treatment. In Group A (Devadarvyadi-Vati) 14 patients had completed the course of treatment and 4 patients were discontinued. In Group B (Bhuminbadi-Vati) 10 patients had completed the course of treatment and 4 patients were discontinued.

Observation and Results
Observations of 32 patients are as presented below:

| Symptoms                      | N  | Mean | D  | %  | SD | SE  | t  | P     |
|-------------------------------|----|------|----|----|----|-----|----|-------|
| Muhurbaddha                   | 14 | 2.28 | 0.50| 1.78| 78.12| 0.80| 0.21| 8.33  | < 0.001|
| Muhurshithila Mala Pravritti |    |      |    |    |    |     |     |       |
| Anaddhodarata                 | 11 | 2.09 | 0.54| 1.54| 73.91| 0.68| 0.20| 7.45  | < 0.001|
| Arochaka                      | 14 | 1.78 | 0.35| 1.43| 80.00| 0.51| 0.13| 10.40 | < 0.001|
| Balakshaya                    | 13 | 1.46 | 1.23| 0.23| 15.79| 0.43| 0.12| 1.89  | < 0.05 |
| Aalasya                       | 12 | 1.83 | 1.00| 0.83| 45.45| 0.71| 0.20| 4.02  | < 0.01 |
| Klama                         | 07 | 1.71 | 1.28| 0.43| 25.00| 0.53| 0.20| 2.12  | < 0.05 |
| Trishna                       | 06 | 1.83 | 0.33| 1.50| 81.82| 0.54| 0.22| 6.70  | < 0.01 |
| Mukha Vairasya                | 02 | 2.00 | 0.50| 1.50| 75.00| 0.70| 0.50| 3     | > 0.05 |
| Tikta Amlodgara               | 02 | 4    | 1   | 3   | 75.00| 1.41| 1   | 3     | > 0.05 |
| Praseka                       | 06 | 1    | 0   | 1.00| 100  | 0.00| 0.00| -     | -     |
| Antrakujanam                  | 13 | 2.07 | 0.61| 1.46| 70.37| 0.66| 0.18| 7.98  | < 0.001|
| Agnibala                      |    |      |    |    |    |     |     |       |
| Abhayavarana Shakti           | 14 | 2.36 | 0.78| 1.57| 66.67| 0.75| 0.20| 7.78  | < 0.001|
| Jarana Shakti                 | 14 | 3.35 | 1.50| 1.86| 55.32| 0.66| 0.18| 10.48 | < 0.001|

Maximum numbers of patients were in the age group of 3-5 years (40.62%), male (62.50%), Hindu (87.50%), middle class (50%) and mothers are housewives (96.87%). Majority of the patients were Vata-Pitta Prakriti (53.12%), Avara Sara (65.62%), Avara Samhanana (81.25%), Avara Vishamayan Shakti (87.50%), Avara Abhyavarana Shakti (87.50%) and Avara Jarana Shakti (84.38%).

Majority of patients (59.37%) were having past history of Grahani Dosha followed by 37.50% of patients been having past history of Atisara. Vishamashana (93.75%), Divaswapna (46.87%) and Krodha (56.25%) was observed in maximum numbers of the patients.

Vatakapha Pradhana Rupa was observed in i.e., 59.37% of the patients. As chief complaints Muhurbaddha-Muhurshithila Mala Pravritti (100%), Anaddhodarata (84.37%), Arochaka (95.75%), Balakshaya (90.62%), Aalasya (87.50%), Klama (59.37%), Trishna (62.50%), MukhaVairasya and TiktaAmlodgara (09.37%), Praseka (37.50%), Antrakujanam (96.87%) were observed. Chronicity (6-12 months) was observed in 56.25% of the patients.

Nirama mala pravritti was observed in 50% of patients treated in Group A, which is statistically highly significant. Only 20% effect on this symptom was found in Group B, which statistically insignificant. In trial group, increase in pH of stool was observed (27%), while in control group; it was 11.67%. Both results are statistically highly significant.

Overall effect of therapy
In Group A, marked improvement was observed in 21.43% of the patients, moderate improvement was observed in 57.14% of patients and mild improvement was observed in 21.45% of patients. Not any patient was observed as complete cured and unchanged [Table 1]. In Group B, moderate improvement was observed in 40% patients and mild improvement was observed in 60% patients [Table 2].

Discussion
Bruhattrayee as well as Laghuttrayee have explained Grahani
Dosha in detail along with management. According to Kashyapa Samhita the children whose Grahani is vitiated and often eat too much, they suffer from Phakka (Vyadhiqa).\[5\] Agnimandhya predominantly causes the disease Grahani Dosha. When Doshha Dushti occurs, the disease is manifested and Apakva food is invariably voided (unchanged). In Purvarupavastha both Ama and Pakva food products come out through the stool, the condition is described as Grahani Dosha. When only Apakva food is invariably voided, the condition is described as Grahaniroga.\[5\] Grahaniroga is considered as the advanced stage of Grahani Dosha.

According to Acharya Charaka, the action of the drug depends upon either its Rasa, Guna, Virya, Vipaka or Prabhava.\[9\] To break the Sampnapti of the disease, an ideal drug should have Deepana, Pachana properties predominantly. Devadaryadi-Vati contains Katu Rasa, Laghu Guna, Ushna Veerya, Katu Vipaka, Vatakapha Doshaghnata predominantly and in Bhunimbadi-Vati most of the drugs have Tikta and Katu Rasa, Laghu and Raksha Guna, Sheeta Virya, Katu Vipaka and Kaphapittashamaka Doshaghnata. Due to these properties of the both groups help in Aropchaka and Agnidipti.

Maximum numbers of the patients belonging to the age group of 3-5 years. Digestive diseases can affect at any age, but incidence seems to be higher in small aged children. The beginning of Annada Avastha period and the characteristics of Balyavastha are described as Aparipakva Dhatu, Asampurna Balam, Shleshmadhatuprayam, Aniyata Agni, etc. During this period, any mild etiological factor can impairs Agni easily and disturbs the digestive system.

Most of the mothers were housewives. As a housewife, the mother is in the home whole day with children, she thinks that her children eat nothing and she forces her children to eat more and more. “Atimatra Ashanam Amapradosha Hetunam” and “Ajeerna Adhyashanam Grahani Dushnanam”\[7\] over-eating, is one of the factors for creation of Ama.\[8\] Most of the patients were having past history of Grahani Dosha and Atisara. It suggests that Grahani Dosha is a recurrent condition. Atisara is described as Nidanarthakaraha Roga.\[9\]

Majority of the patients were taking biscuits, chocolates, kurkure, sweets, ice cream, wafers, curd, tea and bakery items frequently in their whole day diet. Vishamashana was observed as Abharaanidana, Divaswapana was observed as Viharajanidana and Chinta was observed as Mansakiranidana predominantly. These all are responsible for Agni Vaishamya. Majority of the patients were having chronicity of 6-12 months. The observation suggests it comes under chronic condition. Proper treatment and Pathyapathy is needed for cure the disease.

The effect of trial drug Devadaryadi-Vati showed better result on Muhurbaddha Mukha Vairaayas Mal Pravritti, Anaddhodara, Aalasya, Klama, Trishna and Jarana Shakti due to its Kaphavatashakamaka properties predominantly, while the control drug Bhunimbadi-Vati showed better result on Mukha Vairaayas and Tikta Amolodgaradue to its Kaphapittashakamaka properties predominantly. Both groups showed similar effect on Praseka.

The results on Muhurbaddha Muhurshithila Mal Pravritti, Anaddhodara, Arochaka, Balakshaya, Aalasya, Klama, Trishna and Antrakujanam showed statistically highly significant in both groups. While result on Balakshaya, Klama and Tikta Amolodgara were insignificant in both groups. Treated group Devadaryadi-Vati showed highly significant effect on Aalasya and Praseka. Control group Bhunimbadi-Vati showed highly significant effect on Mukha Vairaanya and significant effect on Praseka.

Regarding scoring pattern, uniformity should be maintained
and regarding overall effect of therapy, assessment should be done at different interval; it will become more specific for conclusion.

**Conclusion**

Grahani Dosha is due to functional derangement of Grahani. Grahaniroga is considered as the advance stage. Faulty dietary habit and changing in the life style are main etiological factors responsible for Doshadushti resulting in Agnimandhya. In Balyavastha Agni is stated as Aniyata Avastha, even a mild etiological factor may become responsible for Agnidushti. Grahani and Agni are interdependent; therefore, all etiological factors of Agni Dushti are the direct cause of Grahani Dosha. It comes under chronic diseases. If the proper care is not taken, it will hamper child's growth and development. It is mostly seen as recurrent condition. Devadarvyadi-Vati showed better relief on Anaddhodarata, Arochaka, Balakshaya, Aalasya, Klama, Trishna and Antrakujanam. Bhunimbadi-Vati showed better relief on Mukha Vairasya and Tikta Amlodgara. After completion of treatment, both the groups showed similar effect on Praseka and nearly similar effect on Muhurbaddha Muhurshithila Mala Pravritti. Pathyapathy plays an important role in the treatment of Grahani Dosha. No any adverse effect of drug observed in this study.

**References**

1. Vriddhajeevaka. KashyapaSamhita. Text with English Translation and Commentary. Indriya Sthana 36. Tewari PV, editor. Varanasi: Chaukambha Visvabharati; 2008. p.157.
2. Agnivesha, Charaka, Dridhabala, CharakaSamhita, Chikitsa Sthana 15/132. Chokrapaniidatta Commentary. VaidyajadavajiTrikamaji Acharya, editor. Varanasi: Chaukambha Prakashana; 2007. p.521.
3. Madhavakar, Madhava Nidanam, Agnimandhyadhi Nidanam 6/24. Madhukosha Vriddhajeevaka. Shri Yadunandanopadhyaya, editor. Varanasi: Chaukambha Prakashana; 1992. p.237.
4. Kashyapa, Vriddhajeevaka, KashyapaSamhita. Chikitsa Sthana 15/57. Vol. 4. Chakrapaniidatta Commentary. Sharma RK, Bhagwandash. Varanasi: Chaukambha Sanskrita Series Office; 2006. p. 29.
5. Ibidem Charak Samhita, Sutra Sthana 26/71-2. Vol 1, 2006. p.478.
6. Ibidem Charak Samhita, Sutra Sthana 25/40. Vol 1, 2006. p.426.
7. Ibidem Charak Samhita, Sutra Sthana 15/41-2. Vol 4, 2006. p.23.
8. Ibidem Charak Samhita, Chikitsa Sthana 15/141-2. Vol 4, 2006. p.22.
9. Sushruta. SushrutaSamhita. Uttaratantra 40/167, with the Nibandhasandastra Commentary of Shri Dhidechocharya, JadavajiTrikamaji Acharya, editor. Varanasi: Chaukambha Sanskrita Samsthana; 2009. p.709