

MANAGEMENT OF INFECTIVE DIARRHOEA (AAMATISARA) BY KUTAJ SHUNTHEE HARITAKI TABLET (VATI)

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ABSTRACT

As per *Ayurveda*, *Diarrhoea (Atisara)* occurs because of abnormal and less potent digestive power (*Agnidosha*) and (*Ajeerna*). The clinical manifestations of *Atisara* are similar to 'Diarrhoea' in modern medicine which is treated with specific Antibiotics and Antispasmodics. The Classics describe; six types of *Atisara* viz. *Vataj*, *Pittaj*, *Kaphaj*, *Sannipataj*, *Aamatisar* and *Raktatisar*. Cardinal symptom of Infective Diarrhoea (*Amatisara*) is frequent passage of stools in liquid status alongwith fluids. ('*Guden Bahu Drava Saranam*') and the line of treatment for Infective Diarrhoea [*Aamatisara*] includes Abstinence from causative factors (*Nidan Parivarjan*), Special therapy for removal of vitiated material (*Doshanuloman*), Fasting or Light Diet, Potencification of digestive fire, Improving Digestion (*Langhan-Deepan- Pachana*) and Forceful removal of infected material (*Shodhan chikitsa*). After primary screening, *Hollarhena antidysentrica (Kutaj)* and *Zinziber officinale (Shunthee)* were found effective in management of Infective Diarrhoea (*Aamatisara*). Similarly, *Terminalia chebula (Haritaki)* used in very less dose adjuvently; for removal of stagnated material (*Doshnuloman* of *Vibandha doshas*) enhances efficacy of the formulation. The Clinical efficacy of *Kutaj Shunthee Haritaki Vati* was confirmed by observing mainly cessation of loose motions (*Dravmal pravritti*), passage of stools which is well formed, non infected and without foul smell (*Pindit- Niram-Durgandhit malapravritti*), and cessation of pain in abdomen (*Udarshool*), improvement in appetite (*Kshudhavardhan*) and feeling of lightness in the abdomen (*Koshtha laghavata*). The study clearly indicated that the extract of the *Kutaj Shunthee Haritaki Vati* is highly effective in controlling the *E.coli*, *Shigella species*, *Klebsiela pneuminae* and *Salmonella paratyphi-B* pathogens responsible for Diarrhoea.

Keywords: Infective Diarrhoea (*Aamatisara*), *Hollarhena antidysentrica (Kutaj)*, *Zinziber officinale (Shunthee)*, *Terminalia chebula (Haritaki)*, Diarrhoea

INTRODUCTION

It is a know that most of the diseases are due to deficient digestive fire ('*Agnimandya*') and product of improper digestion &/or metabolism which is harmful to body called as '*Aam*' which is due to deficient digestive power &/or metabolic power (*Agnimandya*)¹. This is also true in

case of disease diarrhoea ('*Atisara*'). *Ayurveda* described that *Diarrhoea (Atisara)* occurs because of abnormal and less potent digestive power (*Agnidosha*) and (*Ajeerna*). The Etiological factors are basically classified as Dietetic (*Aharaj*), Behavioural (*Viharaj*), and Psychological (*Manasik*), Social (*Samajik*) etc. The Classics describe

six types of Diarrhoea (*Atisara*) because of vitiation of *Vata*, *Pitta*, *Kaphaj*, all three of these, Infective, containing blood (viz. *Vataj*, *Pittaj*, *Kaphaj*, *Sannipataj*, *Aamatisar* and *Raktatisar*). Further, chief components of pathogenesis (*samprapti*) of Infective Diarrhoea (*Aamatisara*) are Dietary causes (*Aaharaj hetu*), Lack of Digestive fire (*Agnimandya*), production of digestive &/or metabolic toxin (*Aam nirmiti*), vitiation of body components (*Dosh dushti*), vitiation of body systems and channels (*Srotodushti*), vitiation of body fluids (*Abdhatu dushti*), vitiation of lower part of Digestive and Excretory system (*pureeshwaha srotodushti*), and Liquefaction of stools (*Dravikaran* of *pureesh mal*) with its forceful, frequent excretion from Anus (*Guda*). Hence, we can co relate 'Atisara' definitely with 'Diarrhoea' in modern medicine.

Cardinal symptom of Infective Diarrhoea (*Amatisara*) is frequent passage of stools in liquid status alongwith fluids. ('*Guden Bahu Drava Saranam*')¹ and the line of treatment for Infective Diarrhoea (*Aamatisara*) includes Abstinence from causative factors (*Nidan Parivarjan*), Special therapy for removal of vitiated material (*Doshanuloman*), Fasting or Light Diet, Potencification of digestive fire, Improving Digestion (*Langhan-Deepan-Pachana*) and Forceful removal of infected material (*Shodhan chikitsa*).

Similarly, in Infective Diarrhoea, (*Aamatisara*)², treatment plan that includes drugs for Digestion of Aam (i.e. by product of improper Digestion), for improving Digestive fire and for reducing frequency of stools [*Grahee chikitsa*³ (*Aampachan+Agnivardhan+Purishgrahee*)] is advocated. After primary screening,

Holarrhena antidystrica (*Kutaj*) and *Zinziber officinale* (*Shunthee*) were found very effective. *Terminalia chebula* (*Haritaki*) is used in small quantity along with these drugs for easy and painless defecation of stagnated material. (*Doshnuloman* of *Vibandha doshas*)⁴.

The efficacy of formulation was confirmed by observing mainly Cessation of Loose motions and defecation of well formed - non infected – non foul smelling stools as well as absence of abdominal pain, Improvement in appetite and feeling of lightness in the abdomen.

AIMS AND OBJECTIVES

To study the efficacy of 'Kutaj Shunthee Haritaki Vati'⁵ in Infective Diarrhoea (*Aamatisara*) with Moderate degree of dehydration (*madhyam shrenee* of *Abdhatukshaya*) mainly in respect with following-

1. Reduction in frequency of loose stools
2. Improvement in quality of stools
3. Improvement in Appetite

MATERIALS AND METHODS

Study centre: IPD/ OPD patients at Dr. D. Y. Patil Ayurved Hospital, Navi Mumbai.

Type of Study: Open, non comparative Study.

Total number of patients: 25

Age Group: 15 to 60 of either gender.

Duration of Treatment: 7 to 10 days.

Drug & Dose: *Kutaj Shunthee Haritaki Vati*, 2 Tablet, three times a day with Luke warm water before food.

Inclusion Criteria

Patients included in this study have chief presenting symptoms as:

1. Increased frequency of loose stools
2. Uncontrolled defecation
3. Altered consistency and constituency of stools

4. Pain in abdomen
5. Bloating sensation, Tenesmus
6. Tastelessness
7. Heaviness in the abdomen
8. Loss of Appetite
9. Moderate degree of Dehydration

Exclusion Criteria

1. Severe Dehydration
2. Stools with blood
3. Pregnant women
4. Anal incontinence
5. Known case of poisoning
6. Carcinoma of rectum

Diagnosis: The diagnosis was mainly based on symptoms, signs and examination of stools.

Drug Profile: Kutaj Shunthee Haritaki Vati Preparation of Kutaj Shunthee Haritaki Vati

Good quality, fine powders of bark of *Holarrhena antidysenterica*, rhizome of *Zinziber officinale* and fruit of *Terminalia chebula* were taken and these powders were mixed thoroughly to make a homogenous mixture, in preparation of *Holarrhena antidysenterica* (6 Parts): *Zinziber officinale* (3 Parts): *Terminalia chebula* (1Part). This mixture was processed thrice with decoction of *Holarrhena antidysenterica* and once with decoction of *Zinziber officinale*. This mixture was dried and fine powder was made. This mixture was mixed with Gum

acacia and 5% sugar syrup and Talc [*Shankhajeerak*] and passed through grinder to grind it. Further, it is passed through granulator to get granules (mesh size 8). Then, these granules were dried in heater. These dried granules were loaded in tab letting machine to make tablets of 500 mg. each. Disintegration time of final product was 30 seconds, taste was Bitter-Spicy, color was grayish brown and Hardness of tablet was 6 units.

Assessment

Symptomatic relief was the basis of assessment of result.

Parameters to assess the results were⁶:

1. Cessation of loose stools i.e. Patient passes well formed, non foul smelling stools by normal frequency.
2. Controlled Defecation i.e. no stool incontinence during urination and flatulence
3. Cessation of Abdominal pain.
4. Lightness in the abdomen.
5. Improved appetite
6. Proper taste sensation
7. Improvement in character of Pulse, B.P. and other signs of dehydration.
8. Development of severe signs and symptoms after 24 hrs of therapy or if the sign and symptoms were found persistent, then also the patient was considered as having no relief and was given other drugs.

Table 1: Time for Symptomatic relief

| No. of Day for Symptomatic relief | No. of Patients | Percentage (%) |
|-----------------------------------|-----------------|----------------|
| Day 2 | 10 | 43.48 |
| Day 3 | 06 | 26.09 |
| Day 4 | 02 | 08.70 |
| Day 5 | 03 | 13.04 |
| Day 6 | 0 | 0 |
| Day 7 | 02 | 8.70 |

OBSERVATION AND RESULT

25 cases of Infective Diarrhoea with moderate Dehydration, attending IPD/ OPD

of Dr. D. Y. Patil Ayurvedic Hospital were treated with '*Kutaj Shunthee Haritaki Vati*' and followed up for a month. In the light of

data presented up till now, the following facts would be clear:

1. The incidence of Infective Diarrhoea is more in the Age group of 21-40 yrs.
2. Incidence of Infective Diarrhoea is more found in Rainy season (80%) than in summer season (20%).
3. Abnormal Digestive power is the main factor in pathogenesis of Infective Diarrhoea. Higher incidence (44%) is found in patients having Lack of Digestive power Patients having good Digestive capacity are rarely prone (8%) to Infective Diarrhoea.
4. *Vata* and *Kapha* are more commonly vitiated during pathogenesis of Infective Diarrhoea. *Vata-Kaphaj Atisara* has 44% incidence.
5. Infected cases of *Aamatisara* account for large group of patients having incidence of 44%. Mucus is present in 36%, cyst of E.H. is found in 28% and Bacilli in 16%. This was the status before treatment.
6. After treatment with '*Kutaj Shunthee Haritaki Vati*'- Number of pus cells decreased to zero. Cyst of E.H. disappeared completely from the stools. In patients with Bacillary infection, though Bacilli

disappeared from stool but total relief was not observed in those patients. They are found to have partial relief. This reveals that the drug is much useful for treating pathological findings of Stool Examination other than Bacilli.

7. Significant reduction in daily frequency of loose stools is found with '*Kutaj Shunthee Haritaki Vati*' in less time indicating its effectiveness in Infective Diarrhoea (*Aamatisara*). Regarding result of total work, 88% of the total number of patients are cured, 4% partially cured and 8% are not cured.

8. The study clearly indicates that the extract of the '*Kutaj Shunthee Haritaki Vati*' is highly effective in controlling the *E.coli*, *Shigella species*, *Klebsiella pneumoniae* and *Salmonella paratyphi-B*. pathogens.

The overall effect of treatment is observed clinically and the observations are proved with the help of Examination of Stool and by Antibacterial study, in vitro. The findings are supported with statistical methods by 't'test, paired't' test and 'Chi-square'test.

Table 2: Result of Total work

| Prognosis | No. of Patients | Percentage (%) |
|-----------------|-----------------|----------------|
| Cured | 22 | 88 |
| Partially Cured | 01 | 04 |
| Non Cured | 02 | 08 |

DISCUSSION AND CONCLUSION

The study revealed that 22 patients are completely cured i.e. complete relief is observed in 88% of the total number of cases. One patient (4%) is found to have partial relief, while 2 patients (8%) not cured after 4 days treatment and these patients were given another treatment.

Higher incidence of disease is observed in following:

1. Age group of 21 to 40 yrs.
2. Rainy season [*Varsha ritu*].
3. Patients lacking Digestive power [*Mandagni*]
4. Constitution-- *Vatta-Pittaja* and *Vata-Kaphaj prakriti*.

5. Patients having Dietary cause mainly Vegetarian diet.

6. Low economic status

7. Main combined vitiation [Doshanubandha] of Vata and Kapha.

Clinical efficacy has been observed within 48 hours after administration of 'Kutaj Shunthee Haritaki Vati'. The efficacy has also been observed pathologically with regard to Stool Examination.

Mechanism of action

The components of 'Kutaj Shunthee Haritaki Vati' have dominance of Bitter, Spicy, Astringent tastes and Agni and Vayu mahabhut. Thus, there is Digestion, Liquefaction, Detoxification and excretion of toxic products of improper digestion (Aama) from body by the Laxative action (Anulomana) leading to lightness in abdomen (Koshtha laghava) and indirectly Improvement in digestive capacity (Agni-Sandhukshana). For Digestion of toxins and control of infection, Zinziber officinale is the most useful herb, which is known as shreshtha Aamapachak dravya. Terminalia chebula is responsible for smooth excretion of detoxified material (Anuloman of pakwa dosha). In supplementation with digestion of toxins in GI tract (koshthagat Aampachan), formulation also helps in digestion of

Metabolic toxins (Dhatugat Aampachan) also⁷.

'Kutaj Shunthee Haritaki Vati' activates Ptylin secretions ('Bodhak kapha') in mouth for taste sensation (Rochan karya). Further, it acts for regulation and stimulation of digestive fire ('Saman Vayu' and 'Agni Sandhukshan'). As Vati has strong Kaphaghna action, Jatharagnideepan and Vatanulomana are easily achieved.

The taste and characters of 'Kutaj Shunthee Haritaki Vati' are useful for astringent action (Drava-Shoshan) and excretion of formed stools (pindit mala). The component Terminalia chebula ('Haritaki') acts for relieving obstruction ('Vibandhanashan') and facilitates Vatanulomana and passage of normal stools without tenesmus.

'Kutaj Shunthee Haritaki Vati' is proved to be 'Krimighna' (Bacteriostatic, Bactericidal)^{8,9} from Ayurvedic as well as Modern point of view. In this regard, study of Antibacterial activity of the drug was carried out which revealed that formulation was very effective in controlling various pathogens by showing bactericidal effect. Destruction of by-product of abnormal digestion ('Annavaisha') is the adjuvant function of this preparation.

Table 3: Observations of Anti- Bacterial Activity of 'Kutaj Shunthee Haritaki Vati'

| Sl. No. | Name of Organism | Inference |
|---------|-------------------------------|-----------|
| 1. | <i>E.coli</i> | Sensitive |
| 2. | <i>S. aureus</i> | Resistant |
| 3. | <i>Shigella species</i> | Sensitive |
| 4. | <i>Klebsiela pneuminiiae</i> | Sensitive |
| 5. | <i>Salmonella paratyphi-B</i> | Sensitive |

Report of Anti- Bacterial Activity of 'Kutaj Shunthee Haritaki Vati'

To test the sensitivity of pathogenic micro-organisms for 'Kutaj Shunthee

Haritaki Vati' the sample (extract of the Tablet) was send to 'BEE LABS'- Worli, Mumbai-18. Agar ditch method or diffusion assay method was used in the present study.

The selected pathogens were grown on nutrient medium. The nutrient agar was used for Gram negative and Gram positive bacteria like *E.coli*, *S. aureus*, *Shigella species*, *Klebsiella pneumoniae* and *Salmonella paratyphi-B*.

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