

ACUTE INFECTIVE GASTROENTERITIS TREATED WITH CORIANDER, GINGER AND THEIR COMPOUND FORMULATIONS

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ABSTRACT

Acute infective gastroenteritis is common health problem (constituting >90% of acute diarrhea cases) is common health problem especially in childhood age, which may lead to serious complications if left untreated or if not managed promptly which is considered as *Atisara* in Ayurveda. Resistance to Antibiotics and their limitations is emerging medical concern, hence management of infections with safer, bio friendly drugs, with broad therapeutic utility is better option. Hence 3 cases of acute infective diarrhea treated with Ayurvedic management by dietary food stuffs (medicated water, soup), decoction prepared from spices (ginger and coriander seeds) and their powder are presented. Three cases of Acute infective Diarrhea in the age of 10

months to 38years, out of which 2 adults and one child suffered due to consumption of unhygienic food and water provoked by faulty dietary and routine practices in one case, presented with history of 1-2 days and mild to moderate dehydration. They were successfully treated with Ayurvedic formulations of Ginger and Coriander seeds.

KEYWORDS: Ginger, Coriander, Diarrhea, Antimicrobial, spices, *Atisara*.

Key massages-Acute infective Gastroenteritis can be successfully treated with Ayurvedic medicines coriander and ginger.

INTRODUCTION

Acute infective gastroenteritis is common health problem (constituting >90% of acute diarrhea cases^[1]) especially in childhood age, which may lead to serious complications if left untreated or if not managed promptly. Inappropriate use of antibiotics leads to microbial

resistance and ineffectiveness of antibiotics. Infective Acute gastroenteritis is similar with group of diseases mentioned as *Atisara*^[2] in Ayurveda, whose detailed scientific description is well explored in classics and is being treated by Ayurvedic practitioners. It is need of time to document the effect of treatment in terms of contemporary parameters for better interdisciplinary understanding. Hence an attempt has been made to record a case series of 3 cases of Acute infective gastroenteritis with Ayurvedic drugs i.e. Coriander and ginger.

CASE HISTORY

3 cases of Acute diarrhea (Infective gastroenteritis), in the age between 10months to 38years from same family were treated with formulation of Ginger and Coriander. **Case 1-A** 38 years old man (father) was presented with foul smelling loose motions 3-4 times/day, occasionally mucoid, mild fever, nausea and vomiting (once only), loss of appetite, gaseous distention and pain in abdomen, indigestion, generalized weakness and malaise since 2 days after travelling and consumption of outside food. He got little relief after vomiting (semi liquid vomitus). He had irregular sleep, diet and motion pattern, faulty dietary pattern (over eating), inappropriate liquid intake for 6 days. He was not having history of malabsorption syndrome, irritable bowel syndrome (IBS), chronic diarrhea, chronic indigestion, worm infestation, intestinal amoebiasis, tuberculosis or ulcerative colitis. On examination, there were signs of moderate dehydration and signs of *apakwa mala*^[3] (malformed stool) in stool examination. No other significant abnormality was noted in systemic examination. He was advised to take water cooked with *Aushadhasiddha paniya*^[4] (medicated water of fresh ginger and coriander seeds) for drinking, decoction (*Kwatha*) and *Churna*^[5] (fine powder) of same medicines and was advised to take same *Aushadhasiddha paniya* for drinking. He was put on soup of green gram (*Mudga yusha*^[6]) and scum of cooked rice (*Dhanya Manda*^[7]) boiled along with same medicated water of Ginger and coriander and added with rock salt. Lemon water (prepared from boiled and luke warm water) along with salt was allowed to take plenty of. The treatment was continued for one week. Frequency of stool reduced since second day of treatment and consistency of stool, appetite started improving gradually. There were regular bowel habits with normal stool consistency and *pakwa mala lakshana* (properly formed stool) and signs of *Pakwa Aama*^[8] from 4th day of treatment. **Case 2-** A 10 months old baby was presented with loose, foul smelling stools with mucus and froth, crying, mild fever, apathy, less activeness and resistance to oral feeds except breast feed since 1 day. She was having regular non foul smelling stools with normal consistency. She had been started oral feeds other than breast feed since age of 6 months and no new dietary ingredient was

added just prior to episode of diarrhea. She didn't had history of lactose intolerance, worm infestation. There was no family history of IBS or Gluten sensitivity. Stool microscopic examination didn't revealed ova, cysts, RBCs. There were few vegetable cells and few pus cells and chemical examination revealed acidic reaction, no occult blood and sugar and signs of improperly formed stool. She was diagnosed as case of infective diarrhea with grade I dehydration by allopathic pediatrician and antibiotic Cefixime, lactobacillus spores (Tablet Sporolac) and Oral rehydration solution. (ORS) was prescribed. She was also advised for stool culture but parent opted Ayurvedic management. She was put on Ghana (concentrated, solidified decoction) of *Dhanyanagara Kwatha*^[9] along with honey *Dhanya Manda* and *Mudga yusha* prepared with Ginger and coriander and ORS. Consistency and frequency of motions was normal and there were signs of properly formed stools on 4th day onwards. **Case 3-A** 33 year old housewife (mother) presented with similar presentation of acute onset diarrhea, frothy foul smelling semi liquid stools 3-4 times per day, gaseous distention and pain in abdomen, nausea and indigestion since 1 day after consumption of stale food. On examination she had mild dehydration. She was prescribed with similar treatment protocol. Besides medicated water of Ginger and Coriander, only boiled water made to luke warm along with pinch of rock salt was advised for drinking. She got significant relief in signs and symptoms on 3rd day. None of them were on any medication just before or during an episode of diarrhea, except haematinic in case 2 which was ongoing since 1 months without any noticeable change in bowel habit. All 3 cases were not reported in same month or year. No body was immuno-compromized and were not infected with Human immunodeficiency virus (HIV) (mother tested 1 and ½ year ago and father tested 3 months ago).

DISCUSSION AND RESULTS

Ayurveda, like contemporary science accepts unhygienic (*dushta*, contaminated with pathological microorganisms) food and water as cause of Acute Diarrhea besides many other etiological factors like *Krimi dosha*, consumption of non recommended food or food combinations (*Asatmyahara*, *Viruddhahara*),^[10] overeating, irregular dietary habit (non adoption of *Aharavidhi visheshayatana*),^[11] indigestion, *Ama*^[12] and non adoption of recommended diurnal, seasonal regime etc.^[13] In the immunologically competent person, the resident fecal microflora rarely cause diarrhea and help in suppression of pathogens. Acute infection or injury occurs when ingested agent overwhelms the hosts mucosal immune and non immune (gastric acid, digestive enzymes, mucus secretion, peristalsis and suppressive resident flora) defenses.^[14] Diarrhea with fever favors infection as etiological factor, in which

as per Ayurvedic concept, *Agnimandya*,^[15] vitiation of few liquid body components (like *Rasa, Jala, mutra, sweda, Kapha, Pitta, Rakta* etc) and production of *Ama* are main pathological events. Treatment of *Ama* is indicated with *langhana*^[16] (fasting or consumption of limited, easy to digest, liquid to semi liquid diet), *Deepana* and *pachana*^[17] (administration of appetizers). Ginger and Coriander seeds possess *Deepana* and *pachana, grahi* (reduces frequency of diarrhea by correction of indigestion), *shulaghna* (antispasmodic, analgesic) and *Jwaraghna* (antipyretic) properties.

Both the drugs and their extracts or isolated chemical moieties have been proven to possess Antidiarrheal,^{[18], [19]} Antimicrobial^{[20], [21], [22], [23], [24]} (antibacterial,^[25] antiviral, paraciticidal, amoebicidal), antiemetic,^{[26], [27]} antispasmodic,^{[28], [29], [30], [31]} antipyretic, anti-inflammatory, Analgesic,^[32] Digestive stimulant (antidyspeptic)^[33] and Gastrointestinal tract modulatory^[34] (stimulant^{[35], [36]} as well as inhibitory actions^{[37], [38]} on gastrointestinal secretions and gut motility^[39]) properties through contemporary evidence based researches. Although extracts, isolated chemical moieties of both the drugs are known to affect (increase and retard) gastric and intestinal transit time, gut secretions, still when they are administered as whole drug, they exhibit good control in acute diarrhea, indigestion and associated signs and symptoms probably due to their associated actions like hinderance of microbial invasion to mucosal tissue by changing host cell metabolism,^[40] balancing gastrointestinal secretions, antispasmodic, anti-inflammatory, antioxidant, antiemetic properties besides their antimicrobial property, which is their combined effect.

Antimicrobial agents (antibiotics) are frequently administered in practice and often without precise diagnosis (culture and sensitivity) which may lead to antibiotic resistance which is emerging problem. Acute infective diarrhea may be associated with different clinical complex situations where option of use of medicines may be limited like cases of nephropathy, pregnancy, pediatric age, old age etc. Besides antimicrobial property, Ginger and coriander seeds possess several other beneficial properties needed for the management of Acute infective Diarrhea besides their broad spectrum therapeutic utility^[41] (table 2) which facilitates their use in different clinical conditions.

Table-01: Treatment given.

Name of medicine	Ingredients of formulation/latin name/Details of formulation	Total daily Dose (gms)	Divided in to equal doses	Mode of administration
<i>Dhanya nagara Kwatha</i> (Decoction)	Course Powder of Coriander seeds and Dried Ginger [1 part of drug (mixture of both drugs in equal quantity) added with 16 parts of water and reduced to 1/8 th by boiling]	50ml in case 1 and 3 derived from 12.5 gms of each drug and in case 2, Ghana derived from 12.5gms of drug	3	Empty stomach in morning and 1 and 1/2 hours before lunch and dinner at noon and evening.
<i>Dhanyaka Churna</i>	Fine powder of <i>Coriandrum sativum</i> Linn. seeds	6gms in case 1 and 3	3	Empty stomach in morning and 1 and 1/2 hours before lunch and dinner at noon and evening.
<i>Shunthi churna</i>	Fine powder of <i>Zinziber officinalis</i> Rosch.	6 gms in case and 3	3	Empty stomach in morning and 1 and 1/2 hours before lunch and dinner at noon and evening.
<i>Ardraka kalka</i>	Bolus(grounded) of fresh ginger	24 gms	3	Empty stomach in morning and 1 and 1/2 hours before lunch and dinner at noon and evening.
<i>Aushadhi siddha paniya</i>	Course Powder of Coriander seeds and Dried Ginger [1 part of drug (mixture of both drugs in equal quantity) added with 64 parts of water and reduced to 1/2 by boiling]	800ml, in case1 and 3 derived from 12.5 gms of each drug in case 1 and 3	4	3-4 hourly
<i>Aushadhi siddha manda</i>	Scum of rice Cooked with <i>Aushadhi siddha paniya</i>	As per digestive capacity	2-3 times a day	
<i>Aushadhisiddha Mudga Yusha</i>	Supernant of cooked Green Gram with <i>Aushadhi siddha paniya</i> , fried with little Ghee, added with pinch of rock salt and tamarind pulp for taste.	As per digestive capacity	2-3 times a day	

Table- 02: Pharmacological aspects of Drugs (related to present cases) as per Ayurveda.^[42]

Drug	Pharmacological action or property	Indications
<i>Shunthi</i> ^{[43],[44]}	<i>Ruchya, Deepana, Pachana, Grahi, Shulahara, Krumighna, Truptighna, Trushnanigraha, Shulaprashamana</i>	<i>Atisara, Vamana, Udara shula, Vibandha, Anaha</i>
<i>Ardraka</i> ^[45]	<i>Jivha kantha vishodhana, Ruchya, Deepana, Pachana, Grahi,</i>	<i>Jwara, Atisara, Vamana, Udara shula, Vibandha, Anaha</i>
<i>Dhanyaka</i> ^[46]	<i>Rochana, Deepana, Pachana, Grahi, Mutrala, Raktastambhaka, Vranaropaka, Jwaraghna, Krumighna</i>	<i>Trushna, daha, vamana, Krumi, Atisara, Jwara,.</i>

Conflict of interest-None declared.

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