



Review Article

A THEORETICAL APPROACH ON THE ACTION OF *VILWADI AGADA* IN RELIEVING THE SYMPTOMS OF ACUTE GASTROENTERITIS

Niranjana.L.Murali

Chief Physician, AWM Healthcare and Hospitality Pvt Ltd., Kerala, India.

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ABSTRACT

Ayurveda a unique science of life, which emphasized on the principle of protecting the health of a healthy individual and eradicating the disease in diseased persons. Now a days, people living in the midst of diseases that disturb them to achieve a good health. The people are trying to overcome this situation by developing an art of medicine and science of healing. *Agadatantra* is one of the branches in Ayurveda. Literally 'Agada' means a disease-free condition. It deals with different type of poisoning from animate and inanimate objects with its management. The poisoning from the bite of snakes, spiders, insects, rodents and from the combination of different poisons with their management are included in this branch. *Vilwadi agada* is a polyherbal combination can be used in various toxicological conditions, GIT problems, concocted poisoning, systemic symptoms like fever, infectious conditions. Today *Vilwady agada* is marketing as *Vilwady gutika* by different pharmaceutical companies. Classical reference of *Vilwadi agada* mentioned in *Ashtangahridaya*, *Ashtangasamgraha*, *Sahasrayogam*, *Visha Jyotsnika* and *Kriyakoumudhi*. Acute gastroenteritis (stomach flu) is an infection characterised by diarrhoea, cramps, nausea, vomiting and fever with inflammation of gastric mucosa. Viruses are the important causative factors for 70% of the episodes of acute gastroenteritis in children especially the rota virus. In contemporary science the first choice is oral rehydration therapy and then gives anti diarrhoeal drugs, antiemetics, antispasmodic drugs according to the condition of the patient. The drugs in *Vilwadi agada* having antimicrobial, antiviral, analgesic, anti-inflammatory, antioxidant, carminative properties. These attributes of this combination is very effective in relieving the cardinal symptoms such as abdominal cramps, nausea, vomiting diarrhoea and fever in acute gastroenteritis.

INTRODUCTION

Vilwadi agada is mentioned in *Ashtanga hridaya Uttarasthana* in *Sarpavisha Pratishedha* is a major reference. It contains 13 ingredients include *Vilwa*, *Surasa*, *Karanja*, *Natham*, *Devadaru*, *Amalaki*, *Vibhithaki*, *Harithaki*, *Sunti*, *Maricham*, *Pippali*, *Haridra* and *Daruharidra*. *Basthamoothra* is used as *Bhavana dravya* (trituration) for *Vilwady agada*.

It is indicated for the poisoning of *Bhujanga* (snake), *Lootha* (spider), *Unduru* (rat), and *Vrischika* (scorpion), in the management of *Vishuchika* (cholera), *Ajeerna* (indigestion), *Gara* (concocted poison), *Jwara* (fever). It possesses *Bhutaghna* property also (antimicrobial/antiviral)^[1]. Acute gastroenteritis is an infectious disease clinically diagnosed by the clinical symptoms of vomiting, diarrhoea, abdominal pain and fever. The most common etiology is viral and less commonly by bacteria like *E. coli*, *Salmonella*, *Shigella*, *Clostridium difficile* and *Campylobacter*.^[2]

While going through the pathogenesis of acute gastroenteritis, mainly the *Annavaha*, *Purishavaha* and *Rasavahasrotas* are affected. Most of the drugs in *Vilwadi agada* having *Katu* (pungent), *Tikta rasa*, *Ushna veerya* and are *Vatakaphagna*. The *Rasapanchaka* give properties like *Deepana*, *Pachana*,

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Grahi, Amanashaka, and Vatanulomana which arrest the pathogenesis of acute gastroenteritis and relieving its symptoms. These kinds of properties of *Vilwady agada* reveals that it plays an important role in maintaining the proper action of gastrointestinal

system in gastroenteritis. Also, its antimicrobial/antiviral action helps to inactivate the activity of pathological organisms and cure the symptoms hastily.

Table 1: Ingredients of Vilwady agada with Rasa Panchaka

S.no	Drug	Botanical Name	Rasa	Guna	Veerya	Vipaka	Karma
1.	<i>Vilwa (Moola)</i> ³	<i>Aegle marmelos</i>	<i>Madhura</i>	<i>Laghu, Rooksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridoshahara</i>
2.	<i>Surasa (Pushpa)</i> ⁴	<i>Ocimum sanctum</i>	<i>Katu, Tikta</i>	<i>Laghu, Rooksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatahara</i>
3.	<i>Karanja (Phala)</i> ⁵	<i>Pongamia pinnata</i>	<i>Tikta, Kashaya</i>	<i>Katu, Laghu, Teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatahara</i>
4.	<i>Natham (Moola)</i> ⁶	<i>Valeriana wallichii</i>	<i>Tikta, Kashaya</i>	<i>Katu, Laghu, Snigdha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatahara</i>
5.	<i>Devadaru (Kandasara)</i> ⁷	<i>Cedrus deodara</i>	<i>Tikta, Kashaya</i>	<i>Katu, Laghu, Rooksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatahara</i>
6.	<i>Amalaki (Phala)</i> ⁸	<i>Emblica officinalis</i>	<i>Amla pradhana Pancharasa (except Lavana)</i>	<i>Saram, Rooksha</i>	<i>Seeta</i>	<i>Madhura</i>	<i>Tridoshahara</i>
7.	<i>Vibheetaki (Phala)</i> ⁹	<i>Terminalia bellerica</i>	<i>Kashaya</i>	<i>Laghu, Rooksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kaphapittahara</i>
8.	<i>Hareethaki (Phala)</i> ¹⁰	<i>Terminalia chebula</i>	<i>Kashaya pradhana Pancharasa (except Lavana)</i>	<i>Laghu, Rooksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Tridoshahara</i>
9.	<i>Sunti (Kanda)</i> ¹¹	<i>Zingiber officinale</i>	<i>Katu</i>	<i>Guru, Rooksha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kaphavatahara</i>
10.	<i>Maricham (Phala)</i> ¹²	<i>Piper nigrum</i>	<i>Katu</i>	<i>Laghu, Teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatahara</i>
11.	<i>Pippali (Phala)</i> ¹³	<i>Piper longa</i>	<i>Katu</i>	<i>Laghu, Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Kaphavatahara</i>
12.	<i>Haridra (Kanda)</i> ¹⁴	<i>Curcuma longa</i>	<i>Tikta, Katu</i>	<i>Laghu, Rooksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavatahara</i>
13.	<i>Daruharidra (Kanda)</i> ¹⁵	<i>Berberis aristata</i>	<i>Tiktha</i>	<i>Rooksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphapittahara</i>

It is predominant with *Katu, Tikta* and *Kashaya* rasa; *Laghu-Rooksha* guna, *Ushna* veerya and *Vatakaphahara*. *Basthamootra* is used as *Bhavana dravya* for *Vilwadi gulika*. As per *Acharya Charaka*, *Aja mootra* is *Kashaya madhura* rasa, *Ushna, Teekshna* guna and having *Deepana, Vishaghna* and *Krimighna* karma^[16].

Table 2: Pharmacological action (Modern and Ayurveda) of Vilwady agada

Drug	Action (Ayurveda)	Action (Modern)
<i>Vilwa</i> ¹⁷	<i>Balya, Vishamajwaraghna, Rakthasthambhaka</i>	Antipyretic, anti-inflammatory, analgesic, antidiarrhoeal, antioxidant, antimicrobial
<i>Surasa</i> ¹⁸	<i>Vishaghna, Deepana-pachana, Krimighna, Janthughna, Vishamajwaraghna</i>	Antipyretic, antibacterial, antidiarrhoeal, analgesic, anti-inflammatory, antioxidant
<i>Karanja</i> ¹⁹	<i>Vishaghna, Vedanasthapana, Deepana-pachana,</i>	Antifungal and antibacterial

	<i>Janthughna</i>	
<i>Natha</i> ²⁰	<i>Vishaghna, Vedanasthapana, Jwaraghna, Bhutaghna</i>	Antipyretic, antioxidant, antimicrobial
<i>Devadaru</i> ²¹	<i>Jwaraghna, Deepana-pachana, Bhutaghna</i>	Antipyretic, anti-inflammatory, antibacterial
<i>Amalaki</i> ²²	<i>Jwaraghna, Raktapittaghna, Vedanasthapana</i>	Antipyretic, analgesic, haemostatic
<i>Vibheethaki</i> ²³	<i>Vedanasthapana, Deepana, Jwaraghna, Garanashana, Rakthasthambhana, Anulomana, Anulomana.</i>	Antitoxic, antipyretic, antimicrobial, antidiarrhoeal
<i>Hareethaki</i> ²⁴	<i>Vedanasthapana, Krimighna, Vishamajwaraghna, Anulomana</i>	Antibacterial, antiviral, antioxidant
<i>Sunti</i> ²⁵	<i>Soolaprasamana, Deepana, Jwaraghna, Grahi</i>	Anti-inflammatory, antimicrobial, antioxidant
<i>Maricham</i> ²⁶	<i>Deepana, Vishaghna, Bhutaghna, Vedanasthapana, Grahi</i>	Anti-inflammatory, digestive, antidiarrhoeal
<i>Pippali</i> ²⁷	<i>Deepana-pachana, Sulaprasamana, Janthughna, Grahi</i>	Antimicrobial, carminative, analgesic
<i>Haridra</i> ²⁸	<i>Vishaghna, Krimighna, Shothahara, Vedanasthapaka</i>	Anti-inflammatory, antioxidant
<i>Daruharidra</i> ²⁹	<i>Vishaghna, Shothahara, Vishamajwaraghna, Vedanasthapana</i>	Antipyretic, antioxidant, anti-inflammatory
<i>Basthamootra (goat's urine)</i> ³⁰	<i>Krimighna, Shothahara, Deepana, Vishaghna</i>	Antimicrobial, anti-inflammatory, antioxidant

Acute gastroenteritis- in a nutshell

Gastroenteritis also known as enteritis or gastroenterocolitis, is an inflammation of the gastric mucosa with manifestations of vomiting, diarrhoea, abdominal pain, fever, dull body aches, flatulence, indigestion, headache etc. Mainly it presents with cardinal symptoms of vomiting or diarrhoea or both with systemic symptoms of abdominal pain and fever.^[31] Acute gastroenteritis usually lasts fewer than 14 days. The Centre for Disease Control and Prevention estimate that more than 350 million cases of acute gastroenteritis in the United States annually, and 48 million of these cases are caused by food borne bacteria.^[32]

It can be caused by bacteria, viruses, parasites injury to the bowel mucosa, inorganic poisons like, organic poisons like mushrooms and drugs.^[33] Most commonly it is caused by an infectious agent like bacteria, viruses or parasites. It is also caused by dietary factors, medications and metabolic factors such as coffee, tea, antibiotics, diabetes mellitus etc. Usually, its mode of transmission through faeco-oral route from contaminated food or water.

Table 3: Infectious agents causing Acute gastroenteritis³⁴

Bacterial	Viral	Parasitic
Campylobacter jejunii	Rota virus	Entamoeba histolytica
E. coli	Adenovirus	Giardia lamblia
Shigella	Astrovirus	Cryptosporidium parvum
Yersinia enterocolitica	Calcivirus	Isospora belli
Vibrio cholerae		
Salmonella		
Clostridium difficile		

Acute gastro enteritis mainly associated with traveller's gastroenteritis, food borne gastroenteritis and antibiotic associated gastroenteritis. Commonly they transmitted from contaminated food or water. Generally developing the symptoms like anorexia, watery diarrhoea, malaise, vomiting, abdominal pain etc.

Table 4: Types of Acute gastroenteritis and Symptoms³⁵

Type	Common Pathogens	Transmission	Duration	Symptoms
Traveller's Diarrhoea	E coli followed by Salmonella, Campylobacter, Shigella	contaminated food or water	1-5 days	Malaise, anorexia, abdominal pain, cramping, watery diarrhoea, nausea, vomiting and fever.
Foodborne acute gastroenteritis	Clostridium difficile, Staphylococcus aureus, Clostridium perferingens, Bacillus cereus, Shigella, Salmonella etc	meat products, dairy products, eggs, salads, cereals etc.	S.aureus, B.cereus: 1-6hrs; C.perferingens: 6-48hrs; Salmonella, Shigella: 3-7 days	Severe watery diarrhoea, abdominal cramping, nausea, vomiting, fever
Antibiotic - associated diarrhoea	Increased use of antibiotics associated with risk of Clostridium difficile infection.	Faeco oral route; the continuous use of antibiotics disturbed the normal flora of the intestinal tract	symptoms seen 2-3 weeks after antibiotic usage and resolve after its stoppage	Abdominal pain fever, nausea, watery diarrhoea.

Diagnosis is made out by history and physical examination. The laboratory tests like stool culture for ova, parasites and toxins considered in patients who are extremely sick. In modern science, fluid and electrolyte balance are to be maintained in diarrhoea and vomiting patients as first line of management. Pharmacological therapy was given to patients according to their symptoms and duration. Antidiarrhoeal agents such as loperamide, antiemetic like domperidone, antispasmodic drugs given for abdominal cramps.

DISCUSSION

The cardinal symptoms of acute gastroenteritis are watery diarrhoea, vomiting, abdominal cramping and fever. *Vilwady agada* is a polyherbal compound with pungent and bitter taste and can be useful in diarrhoea, vomiting and other gastric irritability. By analysing the each ingredient in this yoga the possess *Deepana-Pachana*, *Grahi*, *Bhutaghna*, *Vishaghna*, *Jwaraghna*, *Krimighna*, *Shothahara*, *Anulomana*, and *Sulaghna* property. These *Gunas* made a beneficial effect on gastrointestinal diseases. *Surasa*, *Karanja*, *Natha*, *Devadaru*, *Vibheethaki*, *Trikatu*, *Basthamootra* are *Deepana-pachana* (carminative and digestive) in nature. They help in the *Dhatu parinama* (metabolism) by kindling the digestive fire and reducing the GIT symptoms like bloating, flatulence, nausea, vomiting and diarrhoea in acute gastroenteritis. *Surasa*, *Karanja*, *Natha*, *Haridra*, *Daruharidra*, *Maricha* and *Basthamootra* have *Vishaghna* (antitoxic) property and it helps to remove or inactivate the toxins produced by the pathogens. *Vilwa*, *Surasa*, *Natha*, *Devadaru*, *Triphala*, *Sunti* and *Daruharidra* are *Jwarahara* (antipyretic) thus cures fever and chills associated

with the disease. *Surasa*, *Karanja*, *Devadaru*, *Pippali*, *Maricha*, *Haridra*, *Basthamootra* with *Krimighna* (anti-helminthic) property. *Surasa*, *Karanja*, *Devadaru*, *Natha*, *Maricha*, *Pippali* are *Janthughna* or *Bhutaghna* (antibacterial/antiviral) in nature and helps to eradicate the colonisation of infectious agents. *Karanja*, *Natha*, *Triphala*, *Trikatu* are *Sulaghna* (antispasmodic) in trait, so it is essential in relieving the abdominal cramping occurs in this condition. *Haridra*, *Daruharidra*, *Basthamootra*, *Vilwa*, *Surasa*, *Sunti*, *Maricha* are *Shothahara* (anti-inflammatory), thus it cures the inflammation of gastric mucosa and restores the gut motility gut. The major characteristic *Grahi* seen in *Trikatu* helps to prevent watery diarrhoea to an extent and the *Anulomana* nature of *Triphala* prevent constipation, also helps in the smooth passage of stool and resist vomiting.

CONCLUSION

In modern science there are different treatments methods are available to cure acute gastroenteritis within a short time, but now days people are much aware about the adverse drug reaction caused by modern drugs. So, people prefer Ayurvedic treatment modalities because it provides relief from symptoms without any severe side effects. *Agnimandhya* (poor digestive fire) is the main reason for all kinds of diseases. That leads to improper *Dhatuparinama* (metabolism) and results in *Ama* (toxic condition) and lead to diarrhoea, nausea, vomiting, abdominal pain, fever etc. *Vilwadi agada* have *Katu*, *Tikta*, *Kashaya rasa*, *Ushna veerya* and *Laghu guna* helps in *Agnideepana* and *Amapachana* there by reducing the increased gut motility. Because of the different properties of *Vilwadi agada* such as *Deepana-*

Pachana, Grahi, Anulomana, checks the pathogenesis and pacify the symptoms of acute gastroenteritis. The pharmacological properties like antidiarrhoeal, antibacterial, antipyretic, antihelminthic, antioxidant anti-inflammatory, antispasmodic also helps in relieving the cardinal symptoms of acute gastroenteritis.

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***Address for correspondence**

Dr. Niranjana.L.Murali

Chief Physician,
AWM Healthcare and
Hospitality Pvt Ltd., Kerala,
India,

Email: nirz.lmurali@gmail.com

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