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# The Efficacy of a Cinnamon, Cumin, Ginger and Honey Paste in the Treatment of Acute Diarrhoea

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## Abstract

Ingestion of a cinnamon, cumin, ginger and honey paste was evaluated for its efficacy in the treatment of acute diarrhoea. A total of 30 patients, between the ages of 2 and 70 years old, were included in the study which took place over a period of 6 months. The efficacy of the paste was assessed via a subjective parameter evaluation sheet. All patients reported an improvement in symptoms by the third day and the paste was found to be a safe, affordable and effective remedy for acute diarrhoea, particularly in the setting of gastroenteritis.

**Keywords:** Acute Diarrhoea, Gastroenteritis, Paste

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## **Introduction:**

### Diarrhoea:

Normal stool amount is 100 to 200 g/day in healthy adults and 10 g/kg/day in infants. Diarrhoea is thus defined as a stool weight of greater than 200 g/day in adults and 10g/kg/day in children, or as a general increase in the frequency and fluidity of stools. Diarrhoea is then further categorized as acute if it persists for less than two weeks, and chronic if it persists for longer than two weeks.

There are many different causes of diarrhoea. Acute diarrhoea is normally of an infectious aetiology, but may also be caused by food poisoning and certain drugs. Chronic diarrhoea usually has functional causes, or can be related to diet, malabsorption syndromes, surgery, tumours, endocrine disorders and certain drugs.

The pathophysiology of diarrhoea follows three major patterns:

1. Osmotic diarrhoea: This occurs when unabsorbable, water-soluble solutes remain in the bowel and retain water. Osmotic diarrhoea is usually of a noninfectious aetiology.
2. Secretory diarrhoea: This occurs when the bowels secrete more electrolytes and water than they absorb. Secretory diarrhoea is usually of an infectious aetiology.
3. Reduced contact time/surface area: Rapid intestinal transit and diminished surface area impair fluid absorption and cause diarrhoea.

The complications resulting from diarrhoea includes dehydration, electrolyte loss, malnutrition, weight loss, vascular collapse and even death. Worldwide, diarrhoea accounts for 3-5 million deaths yearly for all age groups.

### Gastroenteritis:

One of the most common causes of diarrhoea is gastroenteritis. Gastroenteritis is defined as inflammation of the stomach and intestines. According to the philosophy of Tibb, it is qualitatively Hot and Dry. It is most commonly caused by viruses (norovirus, rotavirus, parvovirus, adenovirus, astrovirus) and bacteria (*Staphylococcus aureus*, *Escherichia coli*, *Salmonella*, *Shigella*, *Campylobacter*, *Clostridium difficile*) but can also be caused by chemical toxins, food allergies, heavy metals, antibiotics, and other medications. More uncommon causes include parasites and protozoans.

The common symptoms of gastroenteritis is a low grade fever of up to 37.7°C, nausea with or without vomiting, mild-to-moderate diarrhoea and abdominal pain or crampy bloating. More serious symptoms include a higher grade fever of higher than 40°C, haematemesis, bloody/melena stools, vomiting for more than 48 hours and dehydration presenting as weakness, light headedness, decreased urination, dry skin, dry mouth and lack of sweat and tears.

Gastroenteritis is self-limiting and therefore only requires supportive care. In allopathic medicine, oral or IV rehydration therapy is administered if necessary, the BRAT (bananas, rice, apples and toast) diet is followed, antiemetics, antidiarrhoeal and antibiotics are given. In the clinical setting, the Tibb approach is similar, in that the patient is educated regarding the oral rehydration solution, a Cold and Moist diet is followed, an antiemetic (Vomiteb), antidiarrhoeal (Gastrostop) and a natural antibiotic (Septogard) is given.

#### Cinnamon, Cumin, Ginger and Honey Paste:

This year, Gastrostop has been discontinued, bringing about an urgent need for an alternative antidiarrhoeal agent. This spiced honey paste has been used traditionally as an antidiarrhoeal:

#### Ingredients:

1 part cinnamon

1 part cumin

1 part ginger

3 parts honey

#### Dosage:

Adults: 5ml tds

Children: 2.5ml tds

#### Cinnamon:

Scientific name: *Cinnamomum zeylanicum*

Quality: H + D

Uses and properties: Anorexia, antibacterial, antifungal, appetite stimulant, bloating, blood sugar control, fever, nausea, back pain, bile stimulant, candida infections, colic, dyspepsia, fatigue, flatulence, indigestion, larvicidal, stimulant.

Active constituents: Cinnamaldehyde, eugenol, trans-cinnamic acid, phenolic compounds; condensed tannins, catechins, oligomeric proanthocyanidins, monoterpenes, sesquiterpenes and oxalates.

### Cumin:

Scientific Name: *Cuminum cyminum*

Quality: M + H

Uses and Properties: Antibacterial, inhibits blood clotting, diuretic, dyspeptic, carminative, astringent, emmenagogic, anti-inflammatory, antioxidant.

Active constituents: Volatile oil, cuminum, curcumin and cumaldehyde,

### Ginger:

Scientific name: *Zingiber officinale*

Quality: H + D

Uses and Properties: Anorexia, anti-inflammatory, antioxidant, antihelminthic, antiviral, bile stimulant, bone and joint conditions, bronchitis, cleansing, colic, detoxification, dizziness, dyspepsia, flatulence, indigestion, morning sickness, nausea, sea-sickness, ulcers.

Active constituents: Gingerol and  $\alpha$ - and  $\beta$ -zingiberene

### Honey:

Scientific name: *Apis mellifera* (honey bee)

Quality: H + M

Uses and Properties: Hygroscopic, antimicrobial, antioxidant. Active constituents: Two invert sugars, aromatic volatile oils, mineral elements, protein, enzymes and vitamins.

**Aims and Objectives:**

1. To determine the efficacy of the paste in managing acute diarrhoea.
2. To develop a cost-effective, standard protocol for the management of acute diarrhoea.

**Methodology:**Inclusion criteria:

1. Male and female patients between 2 and 70 years old.
2. Patients presenting with acute diarrhoea as one of the symptoms.

Exclusion criteria:

1. Patients under 2 and over 70 years old.
2. Immunocompromised patients (e.g. RVD, DM).
3. Pregnant or breastfeeding women.
4. Patients with a history of, or current peptic ulcers.
5. Patients presenting with haematemesis, melena stools or hematochezia.

Sample size:

The study comprised a total of thirty patients- 11 paediatric cases and 19 adult cases- and data was collected over the 6 month period between March and September 2011.

Day 1- First consultation

1. Thorough history-taking and use of the parameter evaluation sheet (Appendix B).
2. Temperamental evaluation, vitals, JACCOLDPP and physical exam.
3. Diagnosis of an acute condition with the symptom of diarrhoea.

4. Education regarding:

- Food and personal hygiene
- Oral rehydration solution (Appendix B)
- Governing factors

5. Dispensing of the paste in a 30mg container with a plastic spoon (5ml tds).

Day 3- Follow up phone consultation

1. Revisit parameter evaluation sheet.
2. Manage further as necessary.

**Results:**

Table 1: The Number of Bowel Movements on Day 1 vs. Day 3 in Adult Cases

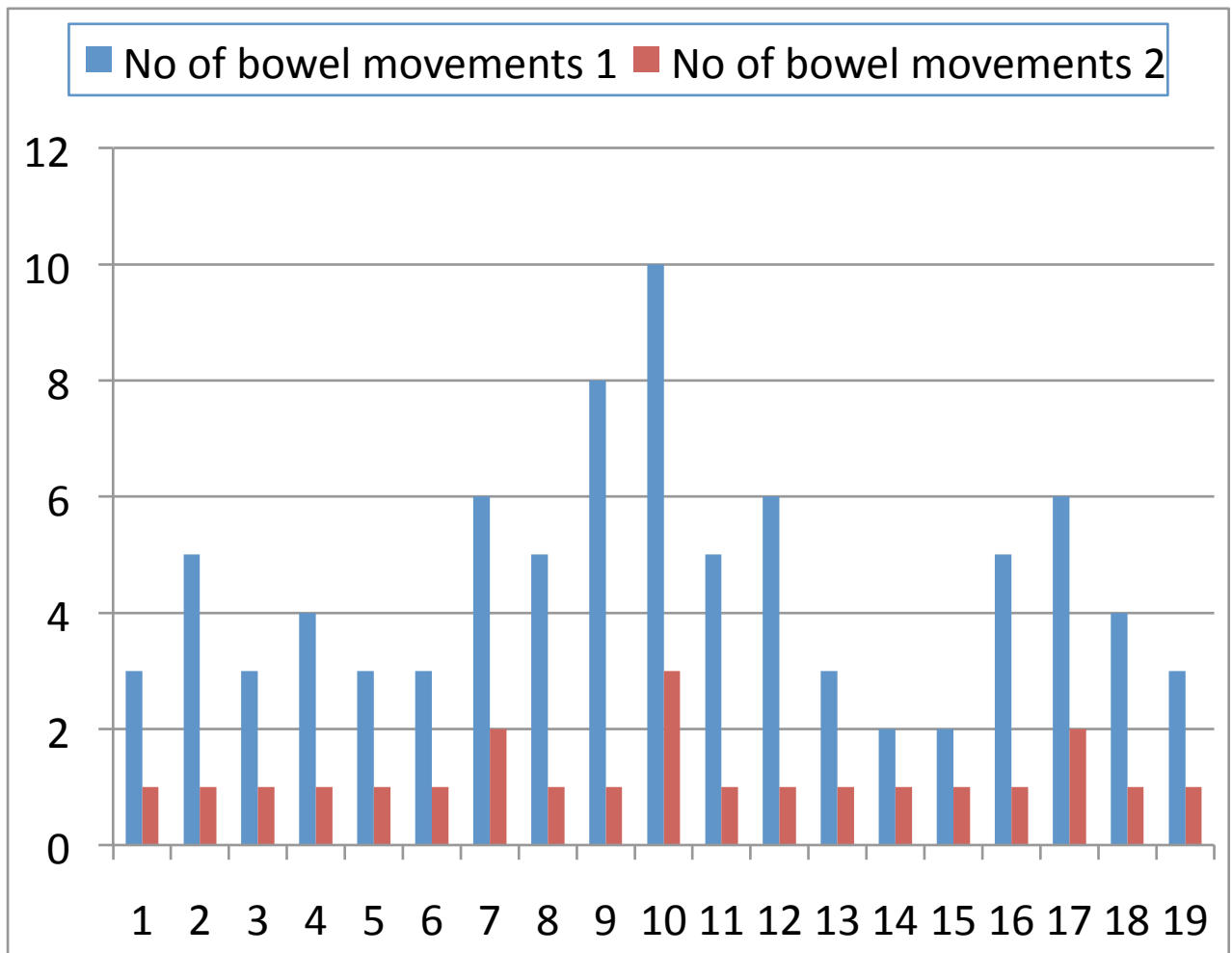


Table 2: The Number of Bowel Movements on Day 1 vs. Day 3 in Paediatric Cases

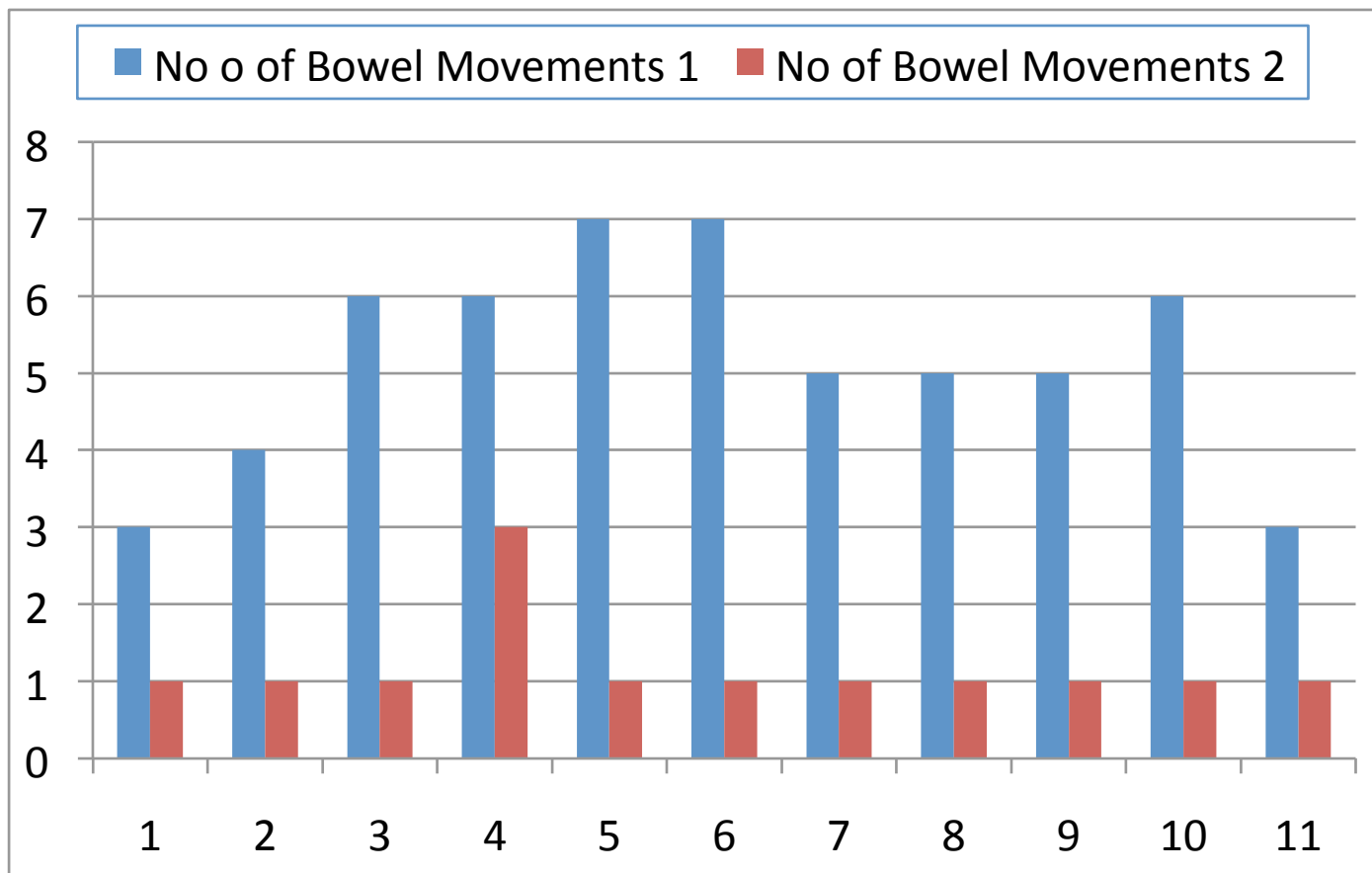




Table 3: Quality of Life Evaluation in Adult Cases

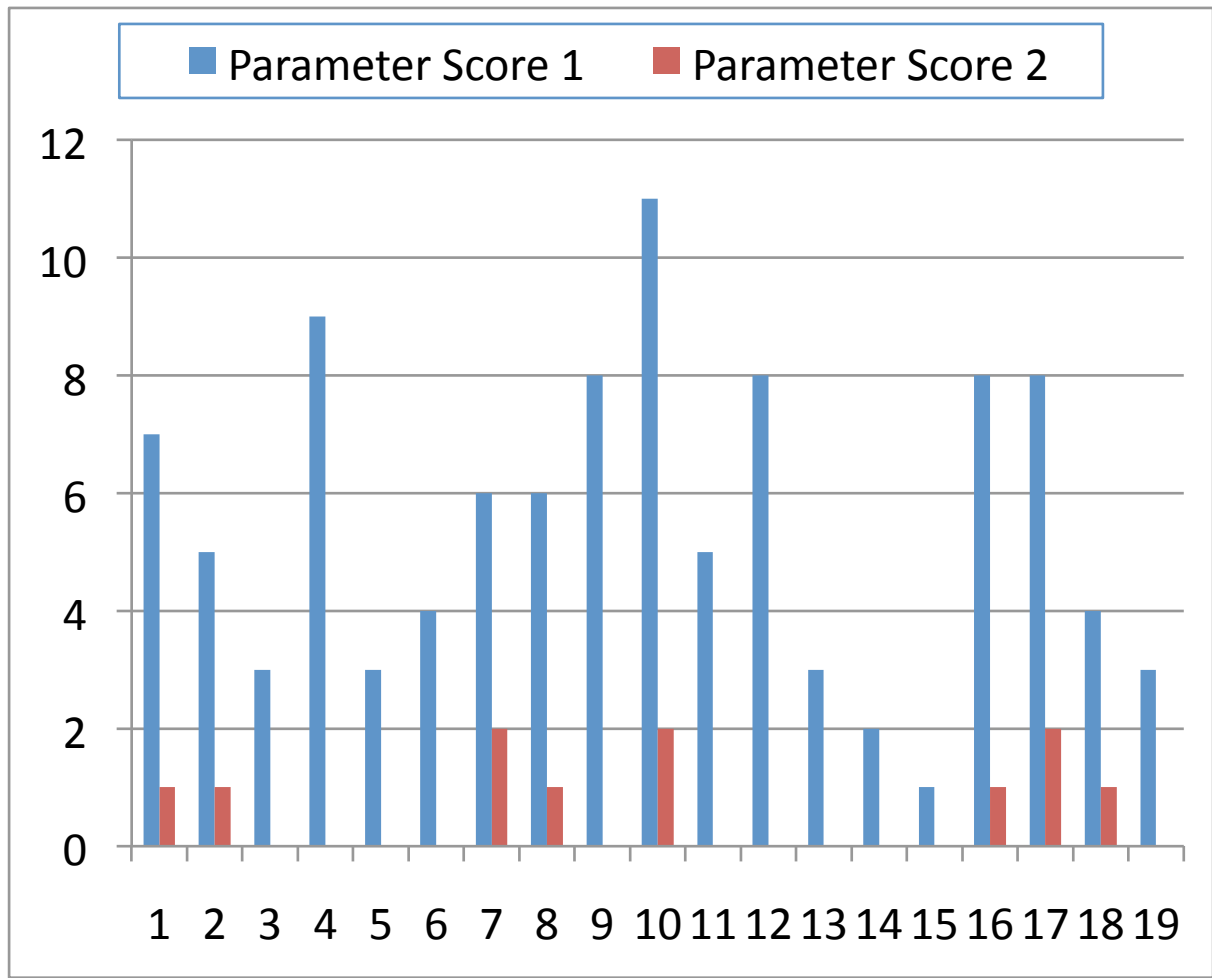
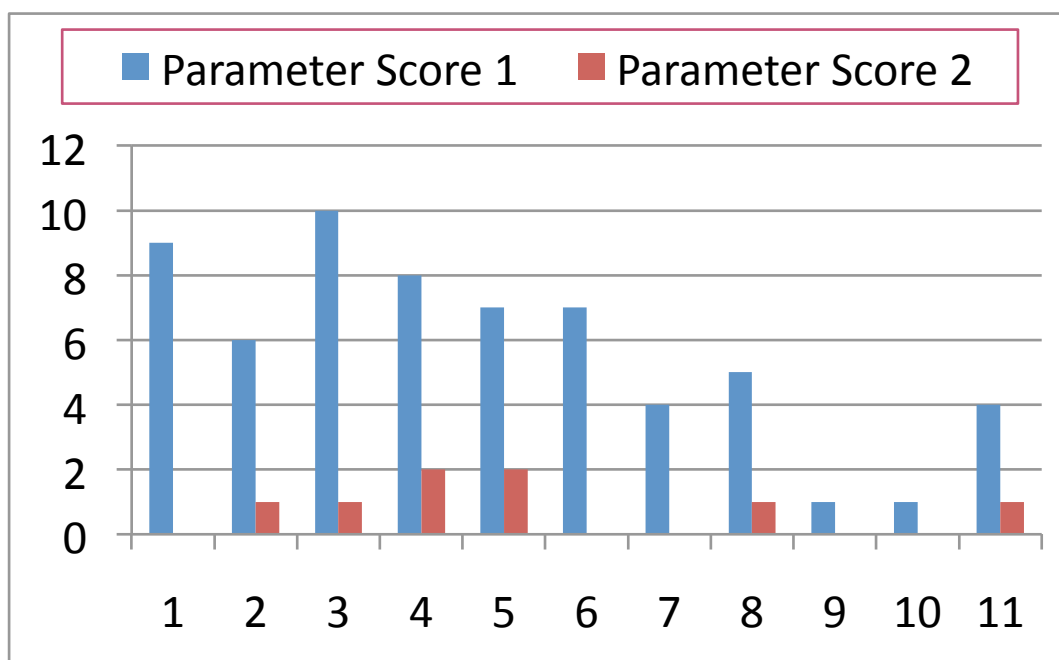


Table 4: Quality of Life Evaluation in Paediatric Cases



### Summary of Results:

All patients reported improvement in symptoms. By the third day, diarrhoea had completely resolved in 26 patients and was markedly improved in the remaining 4 patients. 16 of the 19 adult cases and 10 of the 11 paediatric cases had no diarrhoea by the third day. Nausea, vomiting and cramps had completely resolved in 16 patients and had markedly improved in the remaining 14 patients. 11 of the 19 adult cases and 5 of the 11 paediatric cases no longer experienced nausea, vomiting and cramps by the third day.

### **Discussion:**

The study was not without its difficulties.

1. Subjectivity: The parameter evaluation sheet is based purely on the patient's interpretation of the intensity of symptoms and relies completely on patient recall.
2. Compliance and truthfulness: Follow up consultations was held telephonically, with patients giving feedback on compliance to the treatment program and a report of results. Truthfulness is questioned as results were based purely on subjective parameters.
3. Self-limiting disease: Gastroenteritis resolves without treatment. The question arises whether the paste speeds recovery and provides improved quality of life as measured by the parameters of nausea, vomiting and abdominal cramps.
4. Humoural qualities of the paste and that of gastroenteritis: The paste has an overall quality of heat. It thus does not fall into the treatment frames of gastroenteritis, which is Hot and Dry. It is deduced that the properties rather than the qualities of the ingredients of the paste are responsible for its efficacy in the treatment of gastroenteritis.
5. Temperamental differences: This study did not divide subjects into temperamental groups. Further studies are necessary to determine differences in results for patients of different temperaments.

**Conclusion:**

The results of this study are promising. The paste was found to be a safe, affordable and effective remedy for acute diarrhoea, particularly in the setting of gastroenteritis, when used in conjunction with proper hygiene practices and adequate rehydration therapy.

## Appendix A

### Parameter Evaluation Sheet:

Patient Name: \_\_\_\_\_

Date: \_\_\_\_\_

\*0: non-existent

\*1: very mild

\*2: mild

\*3: moderate

\*4: intense

\*5: unbearable

Parameter	0	1	2	3	4	5
Nausea						
Vomiting						
Cramps						

Number of bowel movements per day: \_\_\_\_\_

Stool consistency and colour: \_\_\_\_\_

## Appendix B

### Oral Rehydration Solution for Children:

- Half a teaspoon of salt
- Eight teaspoons of sugar
- One litre of boiled water which has been cooled

### Oral Rehydration Solution for Adults:

- One teaspoon of salt
- Eight teaspoons of sugar
- One litre of boiled water which has been cooled

1. The solution should be kept in a cool place. Make a new solution each day.
2. Give the solution after every loose stool/vomiting:
  - For a child under 2 years old, give between a quarter and half a cup.
  - For older children, give between half and a full cup.
  - For severe dehydration, give sips every 5 minutes until urination becomes normal. It is normal to have clear urine and to urinate four or five times per day.
3. Give the solution slowly and preferably with a teaspoon or cup, not a bottle.
4. If the child vomits after being given the solution, wait ten minutes and repeat.
5. The solution should be given for three to five days.

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