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Topical Asafoetida for Infantile Colic: A Six-Month Observational Study in Western India

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A B S T R A C T

Infantile colic remains a distressing condition for both infants and caregivers, often leading to excessive crying and parental anxiety.1 This six-month observational study investigates the effectiveness of topical asafoetida (hing) application, a traditional Indian remedy in managing colic symptoms in infants aged 1 to 4 months. Conducted at morbi with a sample size of 150 infants, the study found significant reduction in evening crying episodes among infants treated with asafoetida paste applied around the navel. The findings suggest that asafoetida may offer a safe, culturally familiar, and effective non-pharmacological alternative for colic management in pediatric practice.

Keywords: Infantile colic, Asafoetida, Traditional medicine, Pediatric care, Non-pharmacological intervention, Crying episodes, Excessive crying

1. Introduction

Infantile colic, characterized by prolonged and inconsolable crying in otherwise healthy infants, affects up to 20% of newborns globally[1]. Despite its benign nature, it causes significant parental anxiety[2] and frequent medical consultations.In India, asafoetida (hing), a traditional spice with antispasmodic properties, is commonly used as a a home remedy for digestive discomfort[3].This study aims to evaluate the clinical effectiveness of topical asafoetida application in reducing colic symptoms, bridging traditional practice with modern pediatric observation.

2.Objective

To assess the impact of topical asafoetida application on reducing evening crying episodes in infants aged 1month to 4 months.

3. Methodology

3.1 Study Design and Setting

- Prospective observational study conducted over six months at OM Hospital, Morbi,Gujarat

3.2 Sample Size

- Total infants enrolled: 150 infants aged 1 to 4 months
- Inclusion criteria: Healthy infants with excessive crying during evening/night hours >3 days/week
- Exclusion criteria: Infants with underlying medical conditions or symptom such as fever, nasal blockage, cough, cold, constipation or on pharmacological treatment

3.3 Intervention:

Caregivers(Parents) were instructed to:

- Burp infants after each feed properly.
- then prepare Asafoetida paste by mixing 1 gram of hing with warm water.
- Apply topically around the umbilical region thrice daily for 7 consecutive days.Repeat every 15 to 20 minutes as needed, up to two additional times in evening if needed.
- Fill the Infant Colic Scale (ICS) sheet and ICS Daily Tracking Grid sheet daily.

3.4 Data Collection

- Parental reports of crying duration and frequency
- Clinical observation and follow-up at Day 7 and next hospital visit
- Infant Colic Scale (ICS) [Table 1] and ICS Daily Tracking Grid [Table 2] were used to monitor symptoms.

Table1: Infantile Colic Scale (ICS) – Daily Tracking Form

Patient ID: _____ Age (in days): _____ Date: _____

Caregiver Name: _____ Contact: _____

No.	Symptoms	Never(0)	Rarely(1)	Sometimes(2)	Often(3)	Always(4)
1	Crying for more than 3 hours/day	0	1	2	3	4
2	Crying after feeding	0	1	2	3	4
3	Fussiness without clear reason	0	1	2	3	4
4	Difficulty sleeping due to discomfort	0	1	2	3	4
5	Pulling legs toward abdomen	0	1	2	3	4
6	Passing excessive gas	0	1	2	3	4
7	Abdominal bloating or distension	0	1	2	3	4
8	Difficulty calming the baby	0	1	2	3	4
9	Interrupted sleep cycles	0	1	2	3	4
10	Caregiver stress due to crying	0	1	2	3	4
		Min. 0				Max.40
	Total Score: _____ (Max = 40)					

Interpretation Guide	
Severity	**Total Score**
Minimal symptoms	0–10
Mild colic	11–20
Moderate colic	21–30
Severe colic	31–40

Instructions: Rate each item based on baby's behavior in the past 24 hours. Write Total calculated score in Daily Tracking Grid for 7 days.

3.5 Age Distribution

Age Group (Age in Days)	Number of Infants
31–45	73
46–60	52
61–90	15
91–120	10
Total	**150**

3.6 Feeding Routine of Infants

- Exclusive breast feeding: 117 infants
- Full formula feeding: 8 infants
- Partial formula feeding: 16 infants
- Partial cow milk: 8 infants
- Partial goat milk: 1 infants

3.7 First time examination at hospital visit before enrolling for study

- 17 infants were not burping post-feeding.
- 18 infants had visibly distended abdomens.

4.Results

4.1 ICS Scores

ICS Scores	Day 1	Day 3	Day 7	Interpretation
0-1	44	88	126	Minimal symptoms
2-5	54	32	13	Mild colic
5-10	28	16	7	Mild colic
11-15	12	7	3	Moderate colic
16-20	2	2	1	Moderate colic
21-25	1	0	0	Moderate colic
26-30	4	3	0	Severe colic
31-35	2	1	0	Severe colic
36-40	3	1	0	Severe colic

4.2 Key Findings:

- By Day 7, 84% of infants scored in the 0–1 range, indicating near-complete symptom resolution.
- Scores in the severe colic range (26–40) dropped from 9 cases on Day 1 to zero by Day 7.
- The most dramatic improvement occurred between Day 1 and Day 3, suggesting rapid onset of action.
- Parental satisfaction is high with the intervention due to familiarity of traditional remedies.

- Greater effectiveness observed in infants aged 1–4 months
- No skin reactions or adverse effects reported

4.3 Cultural Acceptance & Compliance

The intervention's cultural familiarity played a pivotal role in caregiver compliance. Unlike pharmacological treatments, asafoetida is:

- Readily available in Indian households

- Trusted across generations

- Emotionally reassuring for caregivers

This emotional comfort likely contributed to consistent application and accurate reporting.

5. Discussion

This study highlights the potential of asafoetida as a culturally accepted and effective intervention for infantile colic. Its antispasmodic[5], carminative and anti-inflammatory properties. Applied topically, it may help alleviate gastrointestinal discomfort, a suspected cause of colic[6]. Asafoetida Stimulate local circulation around the umbilicus, Reduce gastrointestinal spasms, Promote gas expulsion and relieve abdominal distension[4].These mechanisms align with the most common colic symptoms reported: fussiness, gas, pulling legs toward the abdomen, and interrupted sleep.

The rapid reduction in ICS scores especially the shift from moderate/severe colic to minimal symptoms—suggests that asafoetida may be a clinically meaningful intervention. While not a substitute for medical evaluation, it offers potential to reduce unnecessary pharmacological use. Positive caregiver feedback suggest its utility in clinical practice. While pharmacological treatments were used by some, the majority found relief with asafoetida alone. The cultural familiarity of the remedy also enhances parental compliance and emotional comfort. The intervention is a non-invasive, low-cost, and safe option. Its simplicity and alignment with traditional practices provides a strong foundation for integrating traditional remedies into pediatric care. Further randomized controlled trials are needed.

6. Conclusion

Topical asafoetida application, combined with proper feeding techniques, may significantly reduce colic symptoms in infants. Its effectiveness, safety profile, and cultural acceptance make it a valuable addition to pediatric practice, especially in community settings.

7. Limitations

- Non-randomized design limits causal inference.
- No control group prevents comparison with placebo or standard care.
- Caregiver-reported outcomes may be subject to bias or variability.
- Despite these, the consistency of improvement across 150 infants strengthens the observational validity.

8. Authors Declarations

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Conflict of Interest: The authors declare no conflict of interest.

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