

A COMPARATIVE CLINICAL STUDY ON THE EFFICACY OF KANTKARI GHrita AND VASA AVALEHA IN THE MANAGEMENT OF KASA (COUGH) DUE TO VARIED ETIOLOGY: AN AYURVEDIC CLINICAL EVALUATION

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ABSTRACT

Background: *Kasa* (cough) is one of the most prevalent respiratory disorders encountered in pediatric practice and is primarily attributed to the vitiation of *Vata* and *Kapha Dosha* in *Ayurveda*. Although antibiotics and corticosteroids are widely prescribed for managing pediatric respiratory illnesses, their frequent and indiscriminate use may contribute to antimicrobial resistance, adverse drug reactions, and impaired immune function. These concerns underscore the need for safe, effective, and evidence-based *Ayurvedic* therapeutic interventions for the management of pediatric *Kasa*.

KEYWORDS: *Kasa*, Pediatric cough, *Kantkari Ghrita*, *Vasa Avaleha*, *Ayurveda*, Children.

INTRODUCTION

Respiratory tract disorders are among the leading causes of morbidity in the pediatric population worldwide. Cough is a protective physiological reflex that facilitates the clearance of airway secretions, irritants, and foreign particles from the respiratory tract. However, persistent or recurrent cough adversely affects the quality of life of children, contributes to school absenteeism, increases healthcare utilization, and places a considerable burden on families. According to the World Health Organization, respiratory infections continue to be a major cause of childhood morbidity,

particularly in developing countries.

In *Ayurveda*, cough is described as *Kasa*, a disorder of the *Pranavaha Srotas* resulting predominantly from the vitiation of *Vata* and *Kapha Dosha*. Classical *Ayurvedic* texts, including the *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridaya*, and *Madhava Nidana*, provide detailed descriptions of the etiology, pathogenesis, classification, clinical manifestations, and therapeutic management of *Kasa*. Five major types of *Kasa* have been described: *Vataja*, *Pittaja*, *Kaphaja*, *Kshataja*, and *Kshayaja Kasa*.

Childhood is considered the stage of life characterized by the predominance of *Kapha Dosha*, making children inherently more susceptible to respiratory disorders. Environmental pollution, recurrent viral infections, exposure to dust and allergens, impaired immunity, and changing lifestyle patterns further increase the incidence of respiratory illnesses in this age group. If inadequately treated, *Kasa* may progress to more severe conditions such as *Shwasa* and *Kshaya*, as described in *Ayurvedic* classics.

Although antibiotics and corticosteroids are commonly prescribed for pediatric respiratory illnesses, their irrational and excessive use has contributed to antimicrobial resistance, adverse drug reactions, and disruption of normal immune function. Consequently, there is an increasing demand for safe, effective, and economical therapeutic approaches that not only provide symptomatic relief but also enhance the body's natural defense mechanisms.

Kantkari Ghrita is a classical *Ayurvedic* formulation indicated for the management of *Kasa* and other respiratory disorders. It is traditionally described as possessing *Kasahara*, *Shwasahara*, *Kaphaghna*, *Vatahara*, *Deepana*, and *Rasayana* properties. Pharmacological studies have demonstrated that its constituent ingredients exhibit anti-inflammatory, bronchodilator, mucolytic, expectorant, antioxidant, and immunomodulatory activities, which may contribute to its therapeutic efficacy.

Vasa Avaleha is another widely prescribed classical *Ayurvedic* formulation indicated for *Kasa* and *Shwasa*. Owing to the presence of *Vasa* (*Adhatoda vasica*) and other herbal ingredients, it possesses expectorant, bronchodilator, mucolytic, and anti-inflammatory properties, thereby facilitating airway clearance and symptomatic relief in respiratory disorders.

Despite the widespread clinical use of both formulations, comparative evidence regarding their therapeutic efficacy in pediatric *Kasa* remains limited. Therefore, the present

randomized comparative clinical study was undertaken to evaluate and compare the clinical efficacy of *Kantkari Ghrita* and *Vasa Avaleha* in the management of pediatric *Kasa*.

OBJECTIVE

To evaluate and compare the clinical efficacy of *Kantkari Ghrita* and *Vasa Avaleha* in the management of pediatric *Kasa* (cough).

Statistical Analysis

The collected data were compiled and analyzed using appropriate statistical software. Continuous variables were expressed as mean $\pm$ standard deviation (SD), while categorical variables were presented as frequencies and percentages, wherever applicable. As the clinical assessment scores were non-parametric in nature, intragroup comparisons were performed using the Wilcoxon Signed-Rank Test, whereas intergroup comparisons were carried out using the Mann–Whitney U Test. A p-value < 0.05 was considered statistically significant, while $p < 0.001$ was considered highly significant.

MATERIALS AND METHODOLOGY

Study Design

A randomized, open-label, comparative clinical study was conducted to evaluate and compare the clinical efficacy of *Kantkari Ghrita* and *Vasa Avaleha* in the management of Pediatric *Kasa* (cough).

Study Setting

The study was carried out in the Department of *Kaumarbhritya (Balroga)*, Shri Dhanwantari Ayurvedic Medical College and Research Centre, Mathura, Uttar Pradesh, India.

Ethical Approval and Trial Registration

The study protocol was reviewed and approved by the Institutional Ethics Committee (IEC) of Shri Dhanwantari Ayurvedic Medical College and Research Centre, Mathura (Approval No.: IEC: SDAMCRC/IEC-2023/13/2026). The clinical trial was prospectively registered with the Clinical Trials Registry–India (CTRI No.: CTRI/2026/03/105622). Written informed consent was obtained from the parents or legal guardians of all participants before enrolment.

Study Population

A total of 50 children aged 5–12 years presenting with the classical signs and symptoms of *Kasa* were enrolled in the study. Eligible participants who fulfilled the inclusion criteria were

randomly allocated into two equal groups (n = 25 each) using the lottery method.

- * Group A (Trial Group): *Kantkari Ghrita* (n = 25)
- * Group B (Comparative Group): *Vasa Avaleha* (n = 25)

Inclusion Criteria

- * Children aged 5–12 years.
- * Patients presenting with the classical clinical features of Kasa.
- * Children of either sex.
- * Parents or legal guardians willing to provide written informed consent and comply with the study protocol.

Exclusion Criteria

- * Children with congenital respiratory anomalies.
- * Patients diagnosed with bronchial asthma, pulmonary tuberculosis, pneumonia, or other severe respiratory disorders requiring emergency management.
- * Children with chronic systemic illnesses such as congenital heart disease, hepatic disorders, or renal diseases.
- * Patients receiving corticosteroids, immunosuppressive therapy, or any medication likely to influence the study outcomes.
- * Children with known hypersensitivity to any ingredient of the study medications.

Intervention

Participants in Group A received *Kantkari Ghrita*, whereas those in Group B received *Vasa Avaleha*. Both formulations were administered orally twice daily before meals for four weeks. The dosage of each formulation was calculated according to Young's Rule, based on the age of the child.

Assessment Criteria

Subjective Parameters

- * Frequency of cough (Kasa)
- * Severity and character of cough
- * Shirahshoola (headache)
- * Aruchi (loss of appetite)
- * Jwara (fever)
- * Peenasa (nasal symptoms)

- * Other associated clinical features, wherever applicable

Objective Parameters

- * Total Leukocyte Count (TLC)
- * Erythrocyte Sedimentation Rate (ESR)
- * Absolute Eosinophil Count (AEC)

Table 1: Grading pattern of Kasa.

Parameter	Grade 0	Grade 1	Grade 2	Grade 3
Vatika Kasa				
<i>Shushka Kasa</i> (Dry Cough)	No cough at all	Associated with dryness of throat	Associated with irritation of throat	Associated with pain while coughing, affecting normal routine work
<i>Shirahshoola</i> (Headache)	No headache	Occasional headache at the time of Kasa	Frequent headache but not severe	Severe constant headache
<i>Ura Shoola / Parshva Shoola</i> (Pain in chest)	No Shoola	Only once at time of Kasa vega	Irrespective of kasa vega, not affecting normal routine work	Continuous affecting normal routine work
<i>Swarbheda</i> (Hoarseness of voice)	No hoarseness of voice	Hoarseness of voice only at the time of cough	Hoarseness of voice present but no difficulty in speech	Can't make sound due to hoarseness of voice
<i>Shushka Kantha</i> (Irritation in Throat)	No irritation in throat.	Irritation in throat with pain but no difficulty in food intake	Irritation in throat with pain and difficulty in food intake	Irritation in throat with pain which interfere the intake of food along with water

Table 2. Paitikka Kasa

<i>Pitta Nishthivana</i> (Yellow Sputum)	Nil	Sputum with yellow-greenish tinge	Thin Yellow green sputum	Thick, viscid, profuse yellow green sputum
<i>Swarbheda</i> (Hoarseness of voice)	No hoarseness of voice	Hoarseness of voice only at the time of cough	Hoarseness of voice present but no difficulty in speech	Can't make sound due to hoarseness of voice
<i>Aruchi</i> (Anorexia)	Normal appetite	Loss of appetite without alteration in eating habits	Oral intake altered due to nausea after meals	Oral intake markedly decreased with persistent nausea/bitterness in mouth
<i>Jwara</i> (Fever)	Absent	Occasional fever, 1-2 episodes/24 hrs	Intermittent fever; 2-3 episodes/24 hrs	Continuous fever

Table 3: Kaphaja Kasa.

Ghana Kapha (Thick Sputum)	Normal sputum	Relatively thin sputum	Moderately thick sputum	Thick viscid sputum
<i>Peenasa</i>	Smell & taste sensation intact	Smell & taste sensation slightly decreased	Smell & taste sensation significantly decreased	Smell & taste sensation absent

Clinical evaluation was performed before the initiation of treatment (baseline) and after completion of the four-week treatment period.

Outcome Measures

The primary outcome was improvement in the clinical manifestations of *Kasa*. Secondary outcomes included changes in hematological parameters (TLC, ESR, and AEC) and the overall clinical response following treatment

RESULTS

A total of 50 pediatric patients diagnosed with *Kasa* were enrolled in the study and randomly allocated into two groups comprising 25 participants each. All enrolled participants completed the 4-week treatment period, and no dropouts or adverse drug reactions were observed during the study.

Intragroup analysis using the Wilcoxon Signed-Rank Test demonstrated a statistically significant improvement ($p < 0.05$) in the clinical manifestations of *Kasa* in both Group A (*Kantkari Ghrita*) and Group B (*Vasa Avaleha*) following treatment.

Intergroup comparison using the Mann–Whitney U Test revealed that Group A showed significantly greater improvement than Group B in *Shirahshoola* (headache), *Aruchi* (loss of appetite), *Jwara* (fever), *Peenasa* (nasal symptoms), and the character of cough ($p < 0.05$). However, no statistically significant difference was observed between the two groups regarding the frequency of cough and *Ghana Kapha* (thick sputum) ($p > 0.05$), indicating comparable efficacy for these parameters.

Evaluation of hematological parameters demonstrated significant improvement in both treatment groups after completion of therapy. A greater reduction in Total Leukocyte Count (TLC), Erythrocyte Sedimentation Rate (ESR), and Absolute Eosinophil Count (AEC) was observed in Group A compared with Group B.

The overall therapeutic response favored *Kantkari Ghrita*. In Group A, 24 patients (96%) showed good improvement, while 1 patient (4%) demonstrated moderate improvement. In Group B, 16 patients (64%) achieved good improvement, whereas 9 patients (36%) exhibited moderate improvement. No patient in either group showed mild improvement or no improvement.

Overall, both *Kantkari Ghrita* and *Vasa Avaleha* were effective in the management of Pediatric *Kasa*. However, *Kantkari Ghrita* demonstrated comparatively greater improvement in both subjective clinical symptoms and objective hematological parameters than *Vasa Avaleha*.

Overall result of two groups

Sr. No.	Symptoms	Group A	Group B
1	<i>Shushka Kasa</i> (Dry Cough)	90.91	80.00
2	<i>Shirashoola</i> (Headache)	86.67	76.74
3	<i>Ura Shoola</i> / <i>Parshva Shoola</i> (Pain in chest)	82.14	75.56
4	<i>Swarbheda</i> (Hoarseness of voice)	82.14	80.36
5	<i>Shuska Kantha</i> (Irritation in Throat)	81.36	84.00
6	<i>Pitta Nishthivana</i> (Yellow Sputum)	86.67	66.67
7	<i>Aruchi</i> (Anorexia)	83.61	78.26
8	<i>Jwara</i> (Fever)	89.66	84.78
9	<i>Ghana Kapha</i> (Thick Sputum)	79.31	81.25
10	<i>Peenasa</i>	84.21	73.17
11	Character of bouts	91.67	80.00
12	Frequency of bouts	87.69	84.75
	OVERALL RESULT	85.69	79.76

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