

COMPARATIVE CLINICAL EVALUATION OF DHANYAKA SITA YOGA WITH AND WITHOUT TANDULODAKA ANUPANA IN THE MANAGEMENT OF KASA (ACUTE BRONCHITIS) IN CHILDREN: A RANDOMIZED CLINICAL TRIAL**Dr. Neetu Rathour*¹, Dr. Ramesh Kumar Gautam²**¹MD Scholar, PG Department of Kaumarabhritya, State Ayurvedic College and Hospital, Lucknow, Uttar Pradesh, India.²Reader, P.G Department Kaumarabhritya, State Ayurvedic College and Hospital, Lucknow, Uttar Pradesh, India.***Corresponding Author: Dr. Neetu Rathour**

MD Scholar, PG Department of Kaumarabhritya, State Ayurvedic College and Hospital, Lucknow, Uttar Pradesh, India.

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ABSTRACT

Background: Acute bronchitis is one of the most common respiratory disorders in children and is characterized by cough, expectoration, throat irritation, chest discomfort, and mild breathing difficulty. In Ayurveda, the clinical presentation closely resembles Kasa, a disease involving vitiation of Vata and Kapha Dosha affecting Pranavaha Srotas. Dhanyaka Sita Yoga has been traditionally indicated in Kasa, while Tandulodaka is considered a beneficial Anupana that may enhance therapeutic efficacy. Despite the high prevalence of acute bronchitis in children, safe and effective Ayurvedic therapeutic options require further clinical evaluation. **Aim:** To evaluate and compare the efficacy of Dhanyaka Sita Yoga administered with and without Tandulodaka Anupana in the management of Kasa (Acute Bronchitis) in children. **Materials and Methods:** Ethical Clearance and Trial Registration. The study was approved by the Institutional Ethics Committee (IEC), State Ayurvedic college and Hospital, Lucknow (Letter No. SAC/IEC/2024/231 dated 18.07.2024) and prospectively registered with CTRI (CTRI/2024/05/067708). Written informed consent was obtained from parents/guardians before enrollment. A randomized comparative clinical trial was conducted on 65 pediatric patients diagnosed with Kasa (Acute Bronchitis). After 5 dropouts, 60 patients completed the study and were randomly allocated into two groups of 30 each. Group A received Dhanyaka Sita Yoga, while Group B received Dhanyaka Sita Yoga with Tandulodaka Anupana for 7 days. Clinical assessments were carried out at baseline, Day 3, Day 7, and during follow-up. Subjective symptoms were assessed using predefined grading criteria, and objective parameters included Hemoglobin (Hb), Total Leukocyte Count (TLC), Differential Leukocyte Count, and Absolute Eosinophil Count (AEC). Statistical analysis was performed using Wilcoxon Signed-Rank Test, Mann-Whitney U Test, and paired t-test wherever applicable. **Results:** Both groups demonstrated statistically significant improvement in major symptoms of Kasa. Group B showed comparatively higher percentage relief in most parameters including Shushka Kasa (55.17%), Ghan Kapha (58.97%), Swarabheda (55.56%), Hritparshva Shoola (55.56%), Shirashoola (57.14%), Tiktasya (58.62%), Peenasa (59.38%), Aruchi (59.26%), Utklesha (60.00%), and Gaurava (60.00%). However, intergroup comparison revealed no statistically significant difference between the two groups ($p > 0.05$). Significant improvement was also observed in objective parameters including Hb, TLC, lymphocyte count, and AEC in both groups. Complete remission was observed in 3.3% patients in each group, while marked improvement was higher in Group B (36.7%) compared to Group A (20.0%).

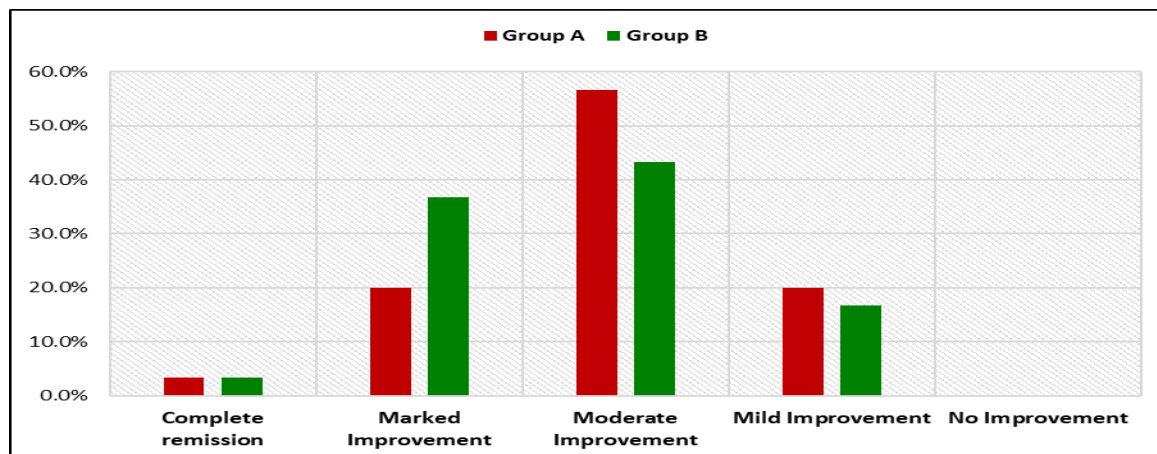
KEYWORDS: Kasa, Acute Bronchitis, Dhanyaka Sita Yoga, Tandulodaka Anupana, Kaumarabhritya, Ayurveda, Pediatric Respiratory Disorders.

Intergroup Comparison of Overall Improvement Status

Overall improvement status	Group A		Group B		Significance	
	No.	%	No.	%	chi sq	p-value
Complete remission	1	3.3%	1	3.3%	2.10	0.553
Marked Improvement	6	20.0%	11	36.7%		
Moderate Improvement	17	56.7%	13	43.3%		
Mild Improvement	6	20.0%	5	16.7%		
No Improvement	0	0.0%	0	0.0%		

Overall, while Group B showed a relatively higher proportion of marked improvement, and Group A had more cases of moderate improvement, the overall

therapeutic response was statistically similar between the two groups.

**Effect on Hematological Parameters**

Parameter		Group A		Group B		unpaired t test	
		Mean	SD	Mean	SD	t-value	p-value
Hb	Before trial	11.74	0.94	11.71	0.87	0.14	0.887
	After trial	12.11	0.86	12.08	0.81	0.16	0.878
TLC	Before trial	11.67	1.61	11.64	1.57	0.08	0.935
	After trial	10.67	1.29	10.70	1.33	0.10	0.922
POLYMORPHS (%)	Before trial	52.43	13.80	50.73	13.67	0.48	0.633
	After trial	51.57	7.79	50.63	7.55	0.47	0.639
LYMPHOCYTES	Before trial	38.50	14.44	40.40	14.68	-0.51	0.615
	After trial	33.53	14.46	35.47	14.71	-0.51	0.610
AEC	Before trial	0.42	0.29	0.32	0.29	1.30	0.197
	After trial	0.23	0.06	0.21	0.07	0.73	0.470

Analysis of hematological parameters revealed that both groups had comparable baseline values. Following treatment, improvements were observed in selected hematological parameters in both groups. However, intergroup comparison showed no statistically significant difference ($p > 0.05$). Overall, both groups demonstrated comparable hematological profiles before and after treatment, suggesting that Dhanyaka–Sita Yoga administered with or without Tandulodaka Anupana did not produce any significant differential effect on routine hematological parameters.

Clinical Significance of the Study

The present study highlights the potential role of Dhanyaka–Sita Yoga as a safe, economical and easily administrable Ayurvedic intervention for pediatric Kasa. The formulation demonstrated significant symptomatic

improvement without any adverse effects, indicating its usefulness in routine clinical practice. The addition of Tandulodaka as Anupana showed comparatively better clinical outcomes and may improve treatment acceptability in children.

Strengths of the Study

- Randomized clinical trial
- CTRI registered study
- IEC approved protocol
- Pediatric population
- Objective and subjective assessment criteria
- Good patient compliance

Future Scope

- Larger multicentric studies

- Extended follow-up period
- Evaluation in recurrent respiratory infections
- Comparison with standard treatment protocols
- Discussion

Probable Mode of Action of Dhanyaka Sita Yoga

Dhanyaka (*Coriandrum sativum* Linn.) is a well-recognized medicinal plant described in Ayurvedic classics for the management of various disorders, including Kasa and Shwasa. According to Ayurvedic pharmacodynamics, Dhanyaka possesses Katu, Tikta, Kashaya, and Madhura Rasa; Laghu and Snigdha Guna; Ushna Virya; and Madhura Vipaka. It is endowed with Deepana, Pachana, Grahi, and Tridosha Shamaka properties and is specifically indicated in Kasa, Shwasa, Trishna, and Jwara. Its Ushna Virya and Kapha-Vata Shamaka properties help alleviate the vitiated Kapha and Vata Dosha involved in the pathogenesis of Kasa. By reducing Kapha accumulation in the Pranavaha Srotas, Dhanyaka facilitates the clearance of airway secretions and supports improved respiratory function. The Deepana and Pachana actions of Dhanyaka enhance Agni and aid in the digestion of Ama, which is considered an important contributory factor in many respiratory disorders. Reduction of Ama and normalization of Agni may help decrease the severity of cough, expectoration, and associated symptoms such as Aruchi, Gaurava, and Utklesha. The Grahi property further supports the proper functioning of bodily channels and contributes to recovery. From a modern pharmacological perspective, *Coriandrum sativum* contains several bioactive constituents, including linalool, flavonoids, phenolic compounds, terpenoids, and essential oils. These phytoconstituents exhibit antioxidant, anti-inflammatory, and antimicrobial activities. The anti-inflammatory action may reduce inflammation of the bronchial mucosa, thereby decreasing cough and throat irritation. Antioxidant activity protects respiratory tissues from oxidative stress and promotes healing of inflamed airways. Furthermore, the antimicrobial properties of coriander may help control secondary microbial infections associated with acute bronchitis. The significant improvement observed in symptoms such as Shushka Kasa, Ghan Kapha, Swarabheda, Peenasa, and Hritparshva Shoola in the present study may therefore be attributed to the combined Ayurvedic and pharmacological actions of Dhanyaka. Thus, Dhanyaka Sita Yoga appears to be an effective and safe formulation for the management of Kasa (Acute Bronchitis) in children.

Role of Sita in Dhanyaka–Sita Yoga

Sita (Misri), a purified crystalline form of sugar obtained from *Saccharum officinarum* Linn., is widely used in Ayurvedic formulations as a sweetening agent, demulcent, and supportive Anupāna. Ayurvedic texts describe Sita as possessing Madhura Rasa, Sita Virya, Pitta-Samaka and Tarpaka properties. Owing to its soothing and nourishing nature, it is beneficial in conditions associated with irritation of the upper

respiratory tract and excessive coughing. In the present study, Sita was incorporated in Dhanyaka–Sita Yoga not only to improve palatability but also to enhance therapeutic efficacy. The demulcent action of Sita forms a soothing layer over the irritated pharyngeal and respiratory mucosa, thereby reducing throat irritation and cough reflex. Modern studies have demonstrated that sucrose-based preparations can decrease cough frequency and severity through stimulation of sweet taste receptors and modulation of vagal cough pathways. This antitussive effect may contribute to the reduction in symptoms such as Shushka Kasa, Swarabheda and Kantha irritation. Furthermore, Sita improves the acceptability of oral formulations, particularly in pediatric patients, resulting in better compliance and adherence to treatment. Being a readily available source of energy, it also supports recovery during acute illnesses. Therefore, along with Dhanyaka, Sita may play a supportive role in alleviating symptoms of Kasa (Acute Bronchitis) and improving overall therapeutic outcomes in children.

Role of Tandulodaka as Anupana

Tandulodaka (rice water), prepared from *Oryza sativa* Linn., is a traditional Ayurvedic preparation commonly used as an Anupana. According to Ayurvedic principles, it possesses Madhura Rasa, Laghu and Snigdha Guna, Sheeta Virya and Madhura Vipaka. It is considered Trishnanashaka, Dahaprashamana, Brimhana and Laghu-Pachya in nature. Owing to these properties, Tandulodaka provides hydration, nourishment and soothing effects to the body while remaining easily digestible. In the present study, Tandulodaka was used as an Anupana with Dhanyaka Sita Yoga. Its liquid form may facilitate the administration and assimilation of the formulation, while its demulcent and soothing properties may help reduce irritation of the respiratory mucosa. The Madhura Rasa and Snigdha Guna provide a protective effect on inflamed mucosal surfaces, thereby contributing to relief in cough and throat discomfort. Furthermore, its nourishing and hydrating nature may support recovery during acute respiratory illness. The comparatively higher percentage improvement observed in Group B may be attributed to the supportive role of Tandulodaka in enhancing patient acceptability, maintaining hydration and promoting better utilization of the administered formulation. Although the intergroup difference was statistically insignificant, the clinical trend suggests that Tandulodaka may serve as a beneficial Anupana in the management of Kasa (Acute Bronchitis) in children.

Ayurvedic Samprapti–Vighatana of Dhanyaka–Sita Yoga in Kasa

According to Ayurveda, Kasa is predominantly a Kapha-Vataja disorder involving the Pranavaha Srotas. Improper dietary habits, exposure to cold substances, dust, smoke and recurrent respiratory infections lead to Agnimandya and Ama formation. The accumulated Ama causes vitiation of Kapha Dosha, resulting in obstruction of the

respiratory channels. This obstruction disturbs the normal movement of Prana Vayu, leading to the manifestation of symptoms such as cough, expectoration, throat irritation, hoarseness of voice and chest discomfort. Dhanyaka, owing to its Deepana and Pachana properties, helps in correcting Agnimandya and digesting Ama. Its Ushna Virya and Kapha-Vata Shamaka actions assist in reducing Kapha accumulation and restoring the normal functioning of Prana Vayu. The Laghu Guna facilitates the clearance of obstructed channels and supports normal respiratory activity. Sitā contributes through its soothing and demulcent effects, reducing irritation of the throat and respiratory mucosa. Tandulodaka, used as Anupana, provides hydration, nourishment and easy assimilation of the formulation. Its Madhura Rasa, Sheeta Virya and Laghu nature help in maintaining mucosal comfort and supporting recovery. Thus, the combined action of Dhanyaka, Sitā and Tandulodaka interrupts the pathogenesis of Kasa at multiple levels by correcting Agni, reducing Ama, pacifying Kapha-Vata Dosha and restoring the normal function of Pranavaha Srotas. This Samprapti-Vighatana may explain the significant clinical improvement observed in the present study.

CONCLUSION

Dhanyaka Sita Yoga is an effective and safe Ayurvedic intervention for the management of Kasa (Acute Bronchitis) in children. Administration with Tandulodaka Anupana demonstrated relatively better clinical improvement, although statistical superiority over Dhanyaka Sita Yoga alone could not be established. Both treatment modalities significantly reduced symptoms and improved hematological parameters, indicating their therapeutic usefulness in pediatric Kasa.

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