



Research Article

CLINICAL EFFICACY OF SAMVARDHANA GHRITA IN THE MANAGEMENT OF VYADHIJA PHAKKA ROGA IN CHILDREN: A CORRELATIVE STUDY WITH PROTEIN ENERGY MALNUTRITION

Sujit Kumar^{1*}, Arvind Chaurasia²

¹MD Scholar, ²Professor and Head of Department of Kaumarbhritya Government Ayurvedic College, Patna, Bihar.

Article info

Article History:

Received: 10-04-2026

Accepted: 03-05-2026

Published: 08-07-2026

KEYWORDS:

Vyadhija Phakka,
Dhatu Kshaya,
Lehnadhyaya,
Samvardhana Ghrita, Growth,
Developmental milestones.

ABSTRACT


The most important phase of human life is childhood, which is characterized by rapid physical growth, cognitive development, and immunological maturation. Protein energy malnutrition (PEM) one of the biggest public health issues. The prevalence of undernutrition in children remains high despite numerous national nutritional programs and public health initiatives. Major contributing causes include inadequate food intake, low socioeconomic situations, recurrent infections, and inappropriate feeding habits. Underweight status, stunted growth, muscle atrophy, anaemia, and weakened immunity are characteristics of PEM. Protein Energy Malnutrition and *Vyadhija Phakka*, as described in the *Kashyapa Samhita*, are very similar. Impaired growth, emaciation, weakness, low appetite, and recurring illness are the hallmarks of *Vyadhija Phakka*. According to the classical scriptures, *Mandagni* leading to *Dhatu Kshaya* is the main cause of its pathogenesis. *Kashyapa* has described *Samvardhana Ghrita* in *Kashyapa Samhita Sutrasthan* of *Lehnadhyaya* chapter it is one of the traditional formulations stated for infant growth. It has been used to improve growth, strength, and developmental milestones as well as to treat conditions including *Panguta* (lameness), *Muktatva* (dumbness), *Asruti* (hearing impairment), and *Jadatva* (intellectual disability). I conducted a 60-day *Vyadhija Phakka* clinical study on 45 participants. The outcomes are as follows: For B.D., these 30 patients were treated with *Samvardhana Ghrita*. 15 patients dropped out of the experiment. Out of the 30 patients who completed treatment, 10 (50.16%) were cured, 12 (20.30%) were moderately improved, and 8 (10.2 %) were mildly improved.

INTRODUCTION

One of the most important global public health issues is still childhood malnutrition, especially in low- and middle-income nations. Around 150 million children under the age of five are thought to be affected by protein energy malnutrition (PEM), which accounts for around 45% of mortality in this age range globally. Approximately one-third of children in India are underweight, one-third are stunted, and one-fifth are wasted, according to the National Family Health Survey-5 (NFHS-5), highlighting the severity of the issue [1].

Long-term effects of PEM include impaired neurocognitive development, lower educational achievement, decreased economic productivity, and the continuation of intergenerational cycles of poverty and ill health in addition to immediate sickness and mortality. High relapse rates are a result of conventional management techniques, which mostly involve calorie supplementation and nutritional rehabilitation, failing to address underlying deficiencies in digestion, metabolic absorption, and immunological function [2].

Under its specialised department for child health, *Kaumarbhritya*, the ancient Indian medical tradition known as Ayurveda has methodically described nutritional abnormalities in children. Among these, the *Phakka Chikitsa Adhyaya* of *Kashyapa Samhita's* description of *Vyadhija Phakka Roga* closely resembles the clinical manifestation of PEM. Features

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Quick Response Code	
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that are remarkably similar to those of contemporary PEM include *Mandagni* (impaired digestive fire), *Dhatu Kshaya* (progressive tissue depletion), *Mamsa Kshaya* (muscle wasting), *Bala Hani* (loss of strength), and *Vyadhikshamatva Hani* (diminished immunity) [3].

Impaired *Agni*, which results in faulty *Rasa Dhatu* formation, is thought to be the etiology of *Vyadhija Phakka*. Since all subsequent *Dhatus* are nourished by *Rasa Dhatu* in a sequential cascade, its impairment leads to the gradual depletion of *Rakta*, *Mamsa*, and other tissues, which eventually shows up as emaciation, developmental delay, and susceptibility to recurrent infections. This idea is like the current understanding of negative nitrogen balance and immune compromise in PEM [4].

The *Lehanadyaya* of *Kashyapa Samhita* describes a traditional formulation known as *Samvardhana Ghrita*. *Khadira* (*Acacia catechu*), *Prishniparni* (*Uraria picta*), *Syandana* (*Oroxylum indicum*), *Bala* (*Sida cordifolia*), *Atibala* (*Abutilon indicum*), *Kebuka* (*Costus speciosus*), *Saindhava Lavana* (rock salt), *Kshira* (cow's milk), *Go-Ghrita* (cow's ghee), and water are its ten main ingredients. It is traditionally prescribed for developmental delay, growth promotion, and pediatric debility. As a *Yogavahi* (bio-enhancer), the *Ghrita* base increases the bioavailability of lipid-soluble components and promotes deeper tissue penetration [5].

No systematic clinical study has assessed the effectiveness of *Samvardhana Ghrita* in children with *Vyadhija Phakka Roga* connected with PEM, despite classical references endorsing its use in *Dhatu Kshaya* situations. Therefore, the purpose of this study was to produce empirical data that would link modern evidence-based pediatric practice with traditional Ayurvedic knowledge [6].

MATERIALS AND METHODS

Study Design and Setting

In the Department of *Kaumarbhritya* at the Government Ayurvedic College and Hospital in Patna, Bihar, India, a single-arm, open-label, pre-post interventional clinical trial was carried out. The study was registered with the Clinical Trials Registry of India

(CTRI/2025/03/081787, registered 06/03/2025) and gained ethical clearance from the Institutional Ethics Committee (IEC Memo No. 07, dated 03/01/2025). The Declaration of Helsinki (WMA, 2013) and ICMR 2017 ethical criteria were followed in conducting the study.

Participants

Children between the ages of one and five who presented to the *Kaumarbhritya* Department's OPD/IPD with *Vyadhija Phakka Roga* clinical characteristics and Grade I–III PEM (according to the Indian Academy of Pediatrics classification) were screened. Thirty children who met the necessary requirements were enrolled:

Inclusion criteria

1. Children aged 1–5 years.
2. Clinical features of *Vyadhija Phakka Roga* such as growth retardation, flaccid limbs, underweight, poor appetite and recurrent infections.
3. Patient fulfilling the criteria of Grade I, Grade II and Grade III of malnutrition as per IAP.

Exclusion criteria

1. Patients are below 1 year and above 05 years.
2. Patients having malabsorption syndrome, worms, chronic illness, malignancies and hereditary disease.

Dropout criteria: Missing two or more consecutive follow-up appointments or persistently not taking medicine as prescribed are the dropout requirements.

Trial Drug: Preparation and Standardization

Samvardhana Ghrita was made in accordance with *Kashyapa Samhita's* description of the traditional *Sneha Kalpana Vidhi*. A certified pharmacognosist verified the botanical authenticity of raw medications. The Ministry of AYUSH's GMP criteria were adhered to during the preparation phase. Classical indicators (cease of frothy, golden-yellow color, pleasant odor, *Varti Bandha of Kalka*) and moisture and peroxide tests in accordance with API standards were used to validate the completion of *Sneha Paka*. An accredited facility provided a certificate of laboratory certification.

Trial Drug Preparation Photo



Ghrita Murchana Drug Photo**Dosage and Administration**

For sixty days in a row, *Samvardhana Ghrita* was taken orally twice a day after meals using honey (*Madhu*) as the carrier (*Anupana*). Young's Formula was used to determine the dosage, which was 2ml for children aged 1-3 and 3ml for children aged 3-5. During the study time, no further tonics, herbal medicines, or nutritional supplements were allowed. All carers received dietary guidance that focused on eating nutrient-dense, home-cooked foods and avoiding packaged or outside food.

Assessment Parameters

Assessments were performed at baseline (Day 0) and post-treatment (Day 60), with interim follow-up visits every 15 days for compliance monitoring.

Subjective parameters (Ayurvedic clinical assessment) graded on a 0–3 ordinal scale:

Table 1: Subjective Parameters

Parameter	Sanskrit Term	Basis of Assessment	Scoring Scale (0-3)
Appetite	<i>Ahara sakti</i>	Child's willingness to eat; parental report	0 = Good, 1 = Slightly reduced, 2 = Poor, 3 = Very poor
Digestion	<i>Agni bala</i>	Frequency of indigestion / flatulence	0 = Good, 1 = Slightly reduced, 2 = Poor, 3 = Very poor
Bowel habit	<i>Mala pravrtti</i>	Frequency & consistency of stool	0 = Normal 2 = Constipated/Irregular
Sleep	<i>Nidra</i>	Duration & quality of sleep	0 = Sound, 1 = Occasional disturbance, 2 = Frequent, 3 = Insomnia
Strength	<i>Bala</i>	Ability to play/perform daily activities	0= Normal, 1= Mild weakness, 2= Marked, 3= Unable to play
Immunity	<i>Vyadhi-kshamatva</i>	Frequency of cough / cold / fever	0= None 1= 1 episode / month 2= 2 episodes 3 ≥ 3 episodes
Behaviour & alertness	<i>Mano-bala</i>	Parental and clinician observation	0= Active, 1= Sluggish, 2= Dull, 3= Lethargic

Objective parameters**Table 2: Objective parameters**

Parameter	Method / Instrument	Unit / Index
Body weight	Standard beam balance (± 0.1 kg)	kg
Height / Length	Stadiometer (< 2 yrs infant meter)	cm

Mid-Upper-Arm Circumference (MUAC)	Non-stretchable measuring tape (Maternal and Child Health type)	cm
Body Mass Index (BMI)	wt. (kg)/ht ² (m ²)	kg/m ²
Haemoglobin (Hb)	Sahli's acid-haematin method / auto-analyser	g/dl
Serum total protein	Biuret method	g/dl
Serum albumin	Bromocresol-green method	g/dl

Frequency of Assessment

- Baseline (Day 0) – Before starting therapy
- Mid-treatment (Day 15) – Interim observation
- Post-treatment (Day 30) – After completion

Each parameter was recorded in the Case Record Form (CRF) designed for the trial.

Statistical Analysis

Microsoft Excel was used to analyze the data. The Paired Student's t-test was used to analyze continuous normally distributed variables (anthropometric and biochemical parameters). The Wilcoxon Signed Rank Test was used to analyze ordinal subjective characteristics. The mean \pm SD is used to express the results. The cutoff points for statistical significance were $p < 0.05$ (significant) and $p < 0.001$ (very significant).

Table 3: Grading of Overall Subjective Improvement

Parameter	% Improvement	Grading
<i>Ahara Shakti</i>	50%	Moderate to Marked
<i>Agnibala</i>	46.15%	Moderate
<i>Mala Pravriti</i>	50.85%	Marked
<i>Nidra</i>	46.38%	Moderate
<i>Bala</i>	49.18%	Moderate
<i>Vyadhikshamatva</i>	49.18%	Moderate
<i>Mano Bala</i>	50.85%	Marked

Interpretation

Most subjective parameters showed Moderate to Marked improvement. *Mala Pravriti* and *Mano Bala* demonstrated marked improvement (>50%).

Table 4: Overall Grading of Objective Parameters

Parameter	Clinical Improvement	Grading
Height	Significant Growth	Moderate
Weight	Marked Weight Gain	Marked
BMI	Significant Increase	Moderate
MUAC	Mild Increase	Mild to Moderate
Hemoglobin	Correction of Anemia	Marked
Total Protein	Moderate Increase	Moderate

RESULTS

Baseline Demographic Profile

A total of 30 children (17 male, 13 female) were enrolled. The mean age was 2.8 ± 1.2 years. The majority belonged to lower socioeconomic strata (per modified Kuppaswamy scale) and had a history of recurrent infections, poor dietary diversity, and absent or early cessation of breastfeeding. All participants showed clinical features of *Agnimandya*, emaciation, poor appetite, and reduced physical activity at baseline. No dropouts or adverse events were recorded during the study period.

Effect on Subjective Parameters

Table 1 presents the effect of *Samvardhana Ghrita* on Ayurvedic subjective parameters. All seven parameters demonstrated highly significant improvement ($p < 0.001$) following 60 days of therapy.

Table 5: Effect on Subjective Parameters

Parameter	Mean BT	Mean AT	Mean Difference	% Improvement	p-Value
<i>Ahara Shakti</i> (appetite)	2.07	1.03	1.04	50.00%	< 0.001
<i>Agnibala</i> (digestive strength)	2.17	1.17	1.00	46.15%	< 0.001
<i>Mala Pravriti</i> (bowel habits)	1.97	0.97	1.00	50.85%	< 0.001
<i>Nidra</i> (sleep)	2.30	1.23	1.07	46.38%	< 0.001
<i>Bala</i> (strength)	2.03	1.03	1.00	49.18%	< 0.001
<i>Vyadhikshamatva</i> (immunity)	2.03	1.03	1.00	49.18%	< 0.001
<i>Mano Bala</i> (alertness)	1.97	0.97	1.00	50.85%	< 0.001

[Table 5. Effect of *Samvardhana Ghrita* on Ayurvedic subjective parameters (Wilcoxon Signed Rank Test; BT= Before Treatment, AT= After Treatment). All 30 patients showed improvement with zero patients worsening]

All 30 participants showed improvement on every subjective parameter with no instances of worsening (zero positive ranks). Percentage improvement ranged from 46.15% (*Agnibala*) to 50.85% (*Mala Pravriti* and *Mano Bala*). *Mala Pravriti* and *Mano Bala* demonstrated Marked Improvement (>50%), while the remaining parameters demonstrated Moderate Improvement (46–50%).

Effect on Objective (Anthropometric and Biochemical) Parameters

Table 6 summarizes the effect on objective parameters. All six parameters showed highly statistically significant improvement ($p < 0.001$) following treatment.

Table 6: Effect on Subjective Parameters

Parameter	Mean BT	Mean AT	Mean Difference	t-value	p-Value
Height (cm)	91.78	93.06	1.28	13.99	< 0.001
Weight (kg)	12.05	13.51	1.46	23.26	< 0.001
BMI (kg/m ²)	14.31	15.65	1.34	15.18	< 0.001
MUAC (cm)	11.70	11.81	0.12	7.66	< 0.001
Hemoglobin (g/dL)	9.69	11.17	1.48	30.81	< 0.001
Total Protein (g/dL)	5.18	5.38	0.20	6.84	< 0.001

[Table No. 06 Effect of *Samvardhana Ghrita* on objective parameters (Paired Student's t-test; BT = Before Treatment, AT = After Treatment)]

The most striking improvements were observed in hemoglobin (increase of 1.48 g/dL; $t = 30.81$) and body weight (increase of 1.46kg; $t=23.26$), reflecting marked hematopoietic and anabolic effects. BMI improvement (14.31 to 15.65kg/m²) and height gain (1.28cm) indicated positive linear growth response. MUAC showed a statistically significant increase, reflecting improvement in muscle protein reserves.

Overall Effect of Therapy

Table 7: Final Overall Outcome

Category	Total Parameters	Marked	Moderate	Mild
Subjective	7	2	5	0
Objective	6	2	3	1
Total	13	4	8	1

Overall Clinical Interpretation

- All 30 children showed improvement.
- No deterioration observed.
- All parameters were statistically highly significant.
- Hematological and anthropometric improvement confirmed.

- *Samvardhan Ghrita* showed *Brihana, Balya, Medhya,* and *Rasayana* action.

DISCUSSION

Correlation Between *Vyadhija Phakka* and PEM

The present study provides evidence that *Vyadhija Phakka*, as described by *Acharya Kashyapa*,

and Protein Energy Malnutrition, as defined by contemporary pediatric medicine, represent the same pathological entity expressed through different conceptual frameworks. The Ayurvedic concept of *Mandagni* leading to progressive *Dhatu Kshaya*-specifically *Mamsa Dhatu*- mirrors the modern pathophysiology of PEM, wherein impaired digestion and absorption lead to negative nitrogen balance, muscle wasting, and compromised immune function. Observations in this study validated this correlation: enrolled children universally demonstrated poor appetite, emaciation, disturbed sleep, and reduced immunity at baseline, consistent with both classical descriptions of *Vyadhija Phakka* and modern PEM.

Mechanism of Action of *Samvardhana Ghrita*

The clinical outcomes observed in this trial can be explained by the multidimensional pharmacological properties of *Samvardhana Ghrita*:

***Agni Deepana and Pachana*:** *Khadira* (Acacia catechu) and *Saindhava Lavana* possess digestive stimulant properties, promoting *Jatharagni* correction and *Ama pachana*. This is reflected in the significant improvement in *Ahara Shakti* (50%) and normalization of *Mala Pravriti* (50.85%) [7].

***Brimhana (Anabolic/Nourishing) action*:** *Bala* (*Sida cordifolia*) and *Atibala* (*Abutilon indicum*) provide adaptogenic and anabolic support to *Mamsa Dhatu*. *Prishniparni* (*Uraria picta*) enhances protein metabolism and tissue anabolism. The significant weight gain (1.46kg) and height improvement (1.28 cm) directly reflect *Brimhana* action on depleted *Dhatu* [8].

***Rasayana (Immunomodulatory/Rejuvenative) action*:** The formulation exerts *Rasayana* effects, improving *Vyadhikshamatva* (immunity) and *Mano Bala* (cognitive alertness). Reduction in recurrent infections observed clinically during the trial corroborates this mechanism [9].

***Hematopoietic support*:** The marked hemoglobin improvement (1.48g/dL, $t=30.81$) suggests iron availability and enhanced erythropoiesis, consistent with the *Raktavardhana* properties of ingredients like *Prishniparni* and the nutrient-rich *Kshira-Ghrita* base [10].

***Lipid carrier (Yogavahi) effect*:** The *Ghrita* base enhances absorption of fat-soluble vitamins (A, D, E, K) and phytoconstituents, addressing micro nutritional deficits critical in PEM. Similar lipid-based Ayurvedic formulations such as *Ashwagandha Ghrita* have demonstrated nutritional benefits in underweight pediatric populations [11].

Safety

No adverse drug reactions were recorded throughout the 60-day treatment period. Palatability-

assessed by parents on a 4-point scale was rated as good to very good by most caregivers, supporting the child-friendliness of the formulation. The classical preparation using food-grade constituents (milk, ghee, rock salt, and time-tested medicinal herbs) at pediatric-appropriate doses aligns with established Ayurvedic safety principles.

CONCLUSION

The present clinical trial demonstrates that *Samvardhana Ghrita* is an effective, safe, and well-tolerated intervention for children suffering from *Vyadhija Phakka Roga*, clinically correlated with Protein Energy Malnutrition. Statistically highly significant improvements ($p<0.001$) were observed across all seven Ayurvedic subjective parameters and all six objective anthropometric and biochemical parameters following 60 days of administration. The formulation exerts its benefits through a multi-mechanism action- correcting *Mandagni*, exerting *Brimhana*, *Balya*, *Deepana*, *Pachana*, and *Rasayana* effects- thereby addressing both the root pathology and clinical sequelae of pediatric malnutrition.

These findings provide empirical scientific validation for the classical Ayurvedic principle of treating pediatric nutritional depletion with *Sneha*-based *Brimhana* and *Rasayana* therapy. The study bridges traditional knowledge with evidence-based medicine and opens a promising avenue for integrating *Samvardhana Ghrita* into pediatric nutritional programs. Multi-center, randomized controlled trials with longer follow-up are warranted to consolidate these findings.

REFERENCES

1. <https://www.who.int/news-room/fact-sheets/detail/malnutrition>
2. <https://velammalmedicalcollege.edu.in/college/wcontent/uploads/2023/03/Protein-Energy-Malnutrition>.
3. Acharya Kashyapa. Kashyapa Samhita, Phakka Chikitsa Adhyaya. Varanasi: Chaukhamba Sanskrit Sansthan; 2009.
4. Shrivastava SR, Shrivastava PS. Protein-energy malnutrition: A public health problem. J Prev Med Hyg. 2012; 53(4): 189-194
5. Acharya Kashyapa. Kashyapa Samhita, Phakka Chikitsa Adhyaya. Varanasi: Chaukhamba Sanskrit Sansthan; 2009
6. Chaurasia A. Kaumarbhritya: Ayurvedic Pediatrics. Patna: Govt. Ayurvedic College Publication; 2020.
7. Soni PL, Sharma S. Pharmacological evaluation of Acacia catechu: A review. Int J Pharm Sci Rev Res. 2015; 34(2): 128-134.

8. Koli SP, Bhatt SS. Sida cordifolia: Pharmacognosy, phytochemistry, and pharmacological activities. Asian J Pharm Clin Res. 2016; 9(2): 24–29.
9. Gogte VM. Ayurvedic Pharmacology and Therapeutic Uses of Medicinal Plants (Dravyagunavignyan). Mumbai: SPARC; 2009.
10. Warriar PK, Nambiar VPK, Ramankutty C. Indian Medicinal Plants: A Compendium of 500 Species. Hyderabad: Orient Longman; 1994.
11. Chopra A, Doiphode VV. Ayurvedic medicine: Core concept, therapeutic principles, and current relevance. Med Clin North Am. 2002; 86(1): 75–89.

Cite this article as:

Sujit Kumar, Arvind Chaurasia. Clinical Efficacy of Samvardhana Ghrita in the Management of Vyadhija Phakka Roga in Children: A Correlative Study with Protein Energy Malnutrition. AYUSHDHARA, 2026;13(3):37-43.

<https://doi.org/10.47070/ayushdhara.v13i3.2609>

Source of support: Nil, Conflict of interest: None Declared

***Address for correspondence**

Dr. Sujit Kumar

MD Scholar,

Department of Kaumrbhritya

Government Ayurvedic College,

Patna, Bihar

Email: sujitgachpatna123@gmail.com

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