

# Management Of Kumarashosha (Undernutrition) In A Child With Ayurvedic Treatment Protocol- Case Report

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## Abstract

**Background:** Adequate nutrition plays a major role in proper growth and development of the children under 5 years of age. Nutrition deficiency in children constitutes a major public health concern in India. As per National Family Health Survey (NFHS) 5 of 2020, among children of under 5 years of age, 32.1% are underweight. Kumarashosha is an undernourished condition along with respiratory and gastrointestinal disturbance. The initial phase of Kumarashosha typically manifest with Arochaka (loss of appetite), Pratishyaya (coryza), Jwara (fever) and Kasa (cough) which gradually culminates to a stage of nutritional inadequacy. This shows the importance of stepwise treatment as per the ayurvedic reference as there is a paucity of previously published data.

**Clinical findings:** Single case report of 4 years 7 months old female child came to outpatient department with the symptoms of Kumarashosha (undernutrition). Child presented with recurrent cough, cold and occasional abdominal disturbance associated with chronic undernutrition since the age of 3 years.

**Intervention:** After evaluation, oral administration of Deepana Pachana with Panchakoladi Churna (enhancement of digestive power) for 5 days, Srotoshodhana (clearing the channels of obstruction) with Simhyadi Ghrita for 25 days followed by administration of Shamana (palliative therapy) with Yashtyawahdi Ghrita for 30 days.

**Outcome:** Assessed based on the anthropometrical parameters. 24.20 % of weight gain was observed with reduction of occurrence of recurrent cough and cold. Concurrently a marked improvement was observed in appetite and sleeping pattern.

**Conclusion:** 15.06% of weight gain was observed on Deepana, Srotoshodhana and 7.93 % after administration of Shamana medicine. As per WHO standards, child shifted from below -2 SD of weight to normal range after treatment. This effectively showed the weight gain in the child along with subjective improvement.

**Keywords:** Case Report, Child, Ghrita, Kumarashosha, Undernutrition in children, Karshya in children

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## 1. INTRODUCTION

Kumarashosha is a disease specifically mentioned in children by Acharya Vagbhata in Ashtanga Hridaya [1] and Ashtanga Samgraha [2] and it has uniqueness in its etiology, symptoms and treatment. In Karshya Roga (emaciation) which arises due to Vata vitiating factors, depletes the Rasadhathu (first fluid tissue), and Brimhana (nourishment) is the focus of treatment. [3] Apart from this pathophysiology, Kumarashosha also called as Balashosha is a condition in which Kapha vitiating etiological factors such as sleeping too much during day, cold water exposure and Kapha vitiating breastmilk obstructs the channels of Rasa. Initially child develops Aruchi (loss of taste), Pratishyaya (Running nose), Jwara (fever) and Kasa (cough). In second phase, over time the child gradually exhibits the symptoms of emaciation. Here inappropriate digestion rather than inadequate intake leads to nutritional inadequacy. Recurrent respiratory infections and gastrointestinal disturbance make the child more prone to chronic undernutrition. The treatment protocol thus focuses a stepwise approach that breakdown the pathophysiological mechanism of the disease. Previous researches showed individualized therapeutic approaches for malnutrition using classical formulations. [4,5] These findings support efficacy of

Brimhana drugs in managing undernutrition. [6,7] Simhyadi Ghrita [8] and Yashtyadi Ghrita [9], [10] is effective in the management of undernourishment in children. This case report addresses effectiveness of whole protocol of Kumarashosha which includes Deepana Pachana with Panchakoladi Churna, Srotoshodhana with Simhyadi Ghrita followed by Shamana with Yashtyawahdi Ghrita.

## 2. CASE REPORT

Four year seven months old female child was brought to the OPD of Kaumarabhritya complaints of inappropriate weight gain for the past nine months. Parents informed that child was having occasional abdominal pain, cough, cold since childhood with recurrence of 1-2 episodes per month lasting for a week. General weakness, calf muscle pain, mouth ulcer once in 1-2 months since 1 year. Sleep pattern was also disturbed. Child have good response to ayurvedic medications during the acute episodes of cough and cold from the age of 3 years. The upper respiratory symptoms aggravate whenever the child takes cold items like ice-cream, junk foods and during seasonal variations. Child had chronic history of constipation that was managed with ayurvedic treatment before 1 year. Now the child is with stable weight that is not gaining according to the age. Child was not on any

concurrent mediations. Child belongs to lower middle-class family with household food security and good environmental and hygiene factors with cultural restriction of nonvegetarian diet and onion varieties. No specific hereditary or chronic illness in the family. The child was born to non-consanguineous parents through full term normal vaginal delivery with birth weight of 2.5 kg (Normal birth weight). Antenatal, natal and postnatal periods were uneventful. Child exhibited age-appropriate social interaction, IQ and DQ consistent with chronological age.

**Clinical findings:** Child have selective eating patterns with frequent snacking, dietary frequency was 3-4 times with moderate portion size, fairly- adequate energy, protein, fat consumption based on dietary recall [11], with moderate dietary frequency index (DFI) [12] and with adequate dietary diversity (DDS). [13] Child appeared thin and associated with mild pallor. Weight for

age was below -3 SD which indicates the severe underweight. Anthropometric finding includes weight of 10.95 kg (weight for age below -3 SD) [14], Height of 97.7 (above -2 SD), Mid upper arm circumference of 14.5 cm and Triceps skinfold thickness of 12 mm. Appetite was moderate. Dry skin, sparse dull brittle hair was associated. Vitals were within normal limits. Dashavidha Pariksha includes Prakruti: Kapha-Vata, Vikriti Hetu- Kapha Kopa Ahara, Dosh- Kapha Vata, Dushya- Rasa, Desha- Jangala, Samhanana- Madhyama, Satwa- Madhyama, Satmya- Madhura Praya, Bala-Avara, Aharasakti- Abhyavaharana- Madhyama, Jarana-Avara, Vaya- Balya. The recurrence of cough, cold, abdominal pain that aggravate with Kapha vitiating etiological factor along with difficulty in gaining weight according to age directs towards the diagnosis of Kumarashosha.

**Table:1 Differentiating features of Kumarashosha with stagewise treatment unlike Karshya**

<b>Etiology</b>	Kapha vitiating diets and regimens	Nidana Parivarjana	<b>Stagewise treatment</b> Avoid the diet which aggravates the Kapha
<b>Pathophysiology</b>	Impairment of Digestive power	Agnideepana & Pachana (measures to improve digestive power)	Ashokarohiniyukta P an chakola Churna orBadaridhatakyadi Churna
	Obstruction of channels	Srotosodhana(Remove the channel obstruction)	Sthiradi Ghrita orSimhyadi Ghrita
<b>Diseasemanifestation (First stage)</b>	Respiratory or Gastrointestinal symptoms	Palliative management as per the symptoms	Saindhavadi Churna if loss of appetite
<b>Second stage</b>	Emaciation in child	Shoshahara (Curative therapy)	Yashyahwadi Ghrita
		Brimhana (Nourishment)	Shringyadi Ghrita

Based on the clinical findings child is diagnosed as initial phase of Kumarashosha in Ayurveda and grade II malnutrition according to IAP and severe uncomplicated malnutrition as per WHO growth standards. Laboratory investigations conducted to rule out the associated

severity. Complete blood count with haemoglobin was assessed to rule out the association of anaemia which is a commonly associated in of undernourished children. Serum cholesterol assessed as there was a long duration of administration of ghee.

**Table 2. Laboratory investigations**

Parameters		Before treatment	After treatment
Haematology	Hb	12.4 Gm%	12.1 Gm%
	R.B.C	4.97 mill/c.mm	4.77 mill/c.mm
	PLATELET COUNT	351000/ cu mm	326000/ cu mm
	TLC	7410 /cu mm	7060/ cu mm
	PCV %	35.6	34.9
	MCV/ fl	71.6	73.2
	MCH/ pg	24.9	25.4
	MCHC %	34.8	34.7
	RDW %	12.2	12,8
Biochemical	Serum protein	7.00 gm/dL	6.63 gm/dL

	S. Urea	15 mg/dL	20 mg/dL
	A/G Ratio	1.55 gm/dL	1.71 gm/dL
	S. Creatinine	0.58 mg/dL	0.69 mg/dL
	T. Cholesterol	121 mg/dL	120 mg/dL

**Therapeutic intervention**

Ashokarohiniyukta Panchakola Churna was administered for the first 5 days with the intention to improve the digestive power. Simhyadi Ghrita was

administered next 25 days followed by Yashtyahwadi Ghrita for a month. No changes to existing dietary pattern were advised. The timeline and treatment protocol given in table 3.

**Table 3: Timeline**

Sl. No.	Duration	Medicine	Dosage	Anupana/ Sahapana	Time of administration
1.	1-5 <sup>th</sup> day (5 days) 06/07/25 to 10/07/25	Ashokarohiniyukta Panchakola Churna	2 gram/dose Twice a day	Mixed with Go Ghrita	Before meal
2.	6 <sup>th</sup> -30 <sup>th</sup> day (25 days) 11/07/25 to 04/08/25	Simhyadi Ghrita	10 ml/day Once a day	Frequent sips of Lukewarm water	Morning in empty stomach
3.	31 <sup>st</sup> - 60 <sup>th</sup> day (30 days) 05/08/25 to 04/09/25	Yashtyahwadi Ghrita	10 ml/day Once a day.	Frequent sips of Lukewarm water	Morning in empty stomach
Total Duration of treatment: 60 days					

**Method of preparation of medicine**

Medicines were prepared in pharmacy of ITRA Jamnagar.

a. Ashokarohiniyukta Panchakola Churna: Ingredients: Pippali (Piper longum), Pippalimula (Piper longum), Chavya (Piper retrofactum), Chitraka (Plumbago zeylanica), Nagara (Zingiber officinale) and Katurohini (Picrorhiza kurroa). All the ingredients with equal proportions are powdered separately and passed through sieve no 85 to make fine powder. After that powdered drugs were mixed.

b. Simhyadi Ghrita: Ghrita is prepared by using standard procedure of Sneha Kalpana Vidhi as per Sharangadhara Samhitha [15]. Ingredients: Kantakari

(Solanum xanthocarpum), Aswagandha (Withania somnifera), Tulsi (Ocimum sanctum), Pippali (Piper longum) and Ghrita. Equal proportions of each ingredient as Kalka, 4 parts of ghee and 16 parts of water was added.

c. Yashtyahwadi Ghrita: Ingredients: Yashtimadhu (Glycyrrhiza glabra), Pippali (Piper longum), Lodhra (Symplocos racemosa), Padmaka (Prunus cerasoides), Utpala (Nymphaea stellata), Chandana (Santalum album), Talisa (Abies webbiana), Sariva (Hemidesmus indicus) and Ghrita. Equal proportions of each ingredient are made into paste; 4 parts of ghee and 16 parts of water was added.

**Outcome measures**

**Primary outcome as shown in Table 4.**

Anthropometry	Before treatment	After treatment
Weight	10.9 kg	13.6 kg
Height	97.7 cm	98.9 cm
Mid upper arm circumference	14.5 cm	14.7 cm
Skin fold thickness (Triceps left)	12 mm	12.1 mm

**Primary outcome:** Weight of child which was 10.9 kg before the treatment was improved to 12.6 kg in 1 month and 13.6 kg after 60 days. Height of child improved to 98.9 cm from the baseline of 97.7 cm after 60 days. Mid upper arm circumference and triceps skinfold thickness after treatment was 14.7 cm and 12.1 mm respectively. Chest circumference and head circumference within normal limits after and before treatment. Episodes of upper respiratory symptoms was reduced from 1-2 episode per month to 1 episode in 2 months) and absence of abdominal discomforts.

**Secondary outcome:** Appetite showed improvement in 2 weeks. Post intervention, dietary intake was improved with reduced food selectivity. Though there was mild reduction in haemoglobin levels, all haematological parameters, cholesterol levels were within paediatric range. Mild increase of serum urea, creatine and albumin globulin ratio was observed after treatment. Adherence and tolerability were satisfactory and no adverse events were reported. Follow up was carried out over two months. Post-follow up revealed normal

anthropometrical assessment with reduction in frequency of recurrence of cough and cold.

## DISCUSSION

Kapha is considered as the Prakrita Bala (innate immunity). In children, in the case of Kumarashosha the Kapha aggravating factors obstructs the channels of circulation and leads to emaciation in the child. Recurrent upper respiratory infections and fever occur in the first stage followed by gradual emaciation. Here the child had frequent episodes of infections like cough and cold on exposure to triggers like cold intake and seasonal variations. The concept of Leena Dosha (hidden Dosha) in Ayurveda refers to a condition in which the vitiated Dosha which is not expelled from the body but instead become latent. During temporary suppression it does not exhibit the symptoms. On re-exposure to etiological factors, seasonal variations, or reduced immunity, if the internal environment is favourable, the symptoms reappear. This indicates the need for stagewise treatment specifically in disease with recurrence. Child gets the recurrent infections and severe underweight goes parallel with the vicious cycle of infections and undernutrition. As the aggravated Kapha obstructs the channels of circulation nourishment of succeeding tissues is hampered. Tissues are unable to get the nourishment despite with food intake. Treatment protocol was given with Deepanapachana, Srotoshodhana and Shoshahara Karma with Ashokarohiniyukta Panchakoladi Churna, Simhyadi Ghrita and Yashtyahwadi Ghrita respectively. Child showed improvement in the appetite in 2 weeks. The Panchakoladi Churna enhance the digestive power, subside the Kapha-Vata and clear the channels by Lekhana (scraping) property. Panchakola Churna has special action on pain relief [16] which might acted on the abdominal discomfort in the child. In Kumarashosha Acharya recommended addition of Katuki to Panchakola Churna. The addition might be to mitigate the hot potency of other drugs considering the pediatric use of formulation. Simhyadi Ghrita which is specifically recommended for clearing the channels might acted on the upper respiratory infection and in weight gain as it contains Kantakari, Tulsi, Pippali and Ashwagandha respectively. Tulsi act as digestive support, has anti-inflammatory action.[17] Tulsi and Aswagandha are immunomodulators. [18] Pippali has role in Kapha disorders and effect on obstructive pathologies.[19]. Simhyadi Ghrita thus possess the quality of nourishment as well as clearing the obstruction of Kapha. 15.06 % of weight gain and absence of infections in the first month might be ascribed to the action of this medicine. The further results may be attributed to the pharmacological potency of Yashtyahwadi Ghrita. Shamana denotes the pacification of aggravated Vata and Pitta. The drugs of this formulation possess predominantly cold potency thereby facilitating effective Pittashamana which could help nourishment of the Dhatus. 24.20 % improvement in the weight in kg was observed in 2 months. 15.06 % of weight gain in first month and 7.93 % in the second

month i.e. after Srotoshodhana and nourishment therapy respectively. Weight for age below -2 SD is considered as underweight and -3 SD is severe underweight as per WHO standards. Before treatment the weight was below -3 SD and after treatment it reached above -2 SD which can be considered as normal. As the child was with static weight for the past months the observed result gives the hope to future. There is an increase of 1.2 cm in the height from the baseline in 2 months. The appetite was improved from moderate to good and the episodes of upper respiratory symptoms were infrequent i.e. 1 episode in 2 months shows the resistance to recurrent infections. Though there is a long duration of oral intake of ghee, the cholesterol levels were in normal before and after the treatment (S. Cholesterol before treatment was 121 mg/dL and after treatment was 120 mg/dL). All the blood parameters were within paediatric normal limits before and after the treatment. Though haemoglobin reduced from 12.4 mg/dL to 12.1 mg/dL, there was an improvement in the MCH and MCV within normal limits. All the biochemical parameters remained within limits indicating metabolic safety of intervention. A reduction in total protein accompanied by increase in albumin globulin ratio suggesting improved protein quality, hepatic synthesis rather than protein depletion. Mild rise in serum urea and creatinine reflects improved protein intake and physiological protein turnover which might be a part of anabolic process.

## CONCLUSION

The combined treatment protocol for a duration of 2 months which includes Deepana Pachana (correction of digestive power) with Ashokarohiniyukta Panchakola Churna, Srotosodhana (clearing the channel obstruction) with Simhyadi Ghrita and Soshahara (curative therapy for emaciation) with Yashtyahwadi Ghrita is found to be effective for weight gain and in Kumarashosha (undernutrition) in a 4 years 7 months old child. The reduction in recurrence of infections suggests the improvement in the immunity of the child as well.

**Patient's perspective:** My child was suffering with frequent episodes of cough, cold and not gaining weight according to age. This condition often interfered with sleep and daily activities. We were concerned about the child's growth and frequent absences in school even could affect even in academic performances. We are satisfied by the treatment and after which the child is taking food without forceful feeding and weight gain observed in first month itself. After which the recurrent cough, cold were decreased. Now child able to sleep well and perform daily activities smoothly.

**Declaration of Patient consent:** Authors confirms that they acquired the parental consent for using details of their child for publication. The parent granted permission for the publication of clinical history, examination findings, laboratory results and photographs in the journal. Patient acknowledge that personal identifying information will not be disclosed and eyes and other identifying feature will be masked in photographs.

**Conflict of interest:** Nil

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