

A CASE STUDY: THE AYURVEDIC MANAGEMENT OF SEVERE ACUTE MALNUTRITION (KHUPOSHANAJANYA VYADHIS).Deepali S. Bodu¹, Dattatraya G. Parde², T. Y. Swami³, Pooja Khose⁴

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**ABSTRACT**

Childhood undernutrition is a fundamental cause of an estimated 45% of all deaths among under- 5 children. Such children frequently experience various complications of malnutrition like diarrhea, acute respiratory infections, malaria, and skin infections if not managed well. In this case study, a 4-year-old child presented with severe to acute malnutrition (S.A.M.). The S.A.M. management protocol consists of early management of acute consequences, and the later part includes dietary management with a starter diet (F-75) & catch-up diet (F-100). But generally, fewer efforts must be taken to improve hunger for appropriate digestion of heavy carbohydrates and protein-containing feeds. In *Ayurveda*, *Samhitas*, *Karshya*, *Phakka*, *Balashosha*, and *Parigarbhika* are diseases explained in detail which are resembling Malnutrition. The main causative factor in all these diseases is *Agni*. *Agni*, or digestive fire, is the main transforming unit of the body. Therefore, an imbalance of *Agni* leads to malnutrition. The treatment

protocols for these diseases mainly include *Deepana Pachana*, *Srotoshodhana*, *Bhrimhana*. The case was managed with help of *Ayurveda* regimen which helps in *Agni vardhan & brimhana karya*.

Keywords: Malnutrition, *Ayurveda*, *Phakka*, *Balshosha*, *Parigarbhika*, undernutrition.

INTRODUCTION

As we say that, “A healthy and brilliant child is National wealth”. Tomorrow’s nation is built on today’s healthy child! Childhood undernutrition is a fundamental cause in an estimated 45% of all deaths among under-5 children. According to the National Family Health and Survey (NFHS) 4, carried out in 2015-2016, 36% India’s children under the age of five are underweight, 38% are stunted and 21% are wasted.^[1] Malnutrition refers to deficiencies, excesses or imbalance in person’s intake of energy and/or nutrients.^[2] Thus, malnutrition connects both undernutrition as well as over nutrition. Previous classification of under nutrition was as marasmus, kwashiorkor and marasmic kwashiorkor. But currently, considering the clinical and management aspects of under nutrition, it is classified as Moderate Acute Malnutrition (M.A.M.) & Severe Acute Malnutrition (S.A.M.).

Severe Acute Malnutrition is defined as very low weight for height (Z-score below -3SD of the median WHO child growth standards) or a mid-upper arm circumference < 11.5 cm or by the presence of nutritional edema.^[3] Body physiology becomes abnormal in S.A.M. due to the phenomenon of reductive adaptation. The systems slow down and do less in order to allow survival on limited calories. This slowing down is known as reductive adaptation. Children with Severe Acute Malnutrition are at risk of death from hypothermia, hypoglycemia, fluid overload, electrolyte imbalance, dehydration & infections. Due to lack of sufficient food intake leads to Malnutrition (*Khiposhanajanya Vyadhis*).

According to *Ayurveda* diseases included in Malnutrition (*Khiposhanajanya Vyadhis*) are *Karshya*^[4], *Phakka*^[5] *Balshosha*^[6] and *Parigarbhika*^[7]. The treatment protocols of *Balshosha* (Malnutrition) are mainly based on *Deepana Pachana*, *Srotoshodhana*, *Bhrimhana* and symptomatic management. *Agni* or digestive fire is the main transforming unit of body.

Therefore, imbalance of *Agni* leads to malnutrition. According to Modern pediatrics the management of S.A.M. is classified into two parts as below.

1. Facility based management.
 2. Community /Home based management.
- Although the appetite evaluation is done thoroughly by above mentioned protocol, but the major lacuna involved is, that there is no appetite enhancer existing in conventional medical system with its recognized safety and efficacy in the treatment of malnourished children. Whereas, *Ayurveda* contributes a solution, towards it. *Ayurveda* offers various types of *Agni vardhana* preparations and *Brihana kalpas*.

CASE REPORT:

A 4^{yr} old male child was brought by his parents to O.P.D. of Kaumarbhritya/Balroga, at Government Ayurvedic College and Hospital, Osmanabad, Maharashtra- 413501. The child was presented with following complaints.

- Not gaining weightFor 5 months
- Not gaining heightFor 5 months
- Loss of appetite...For 1 month
- Irritability... For 15 days
- Generalized weakness... .. For 15 days

H/O present illness:

This 4^{yr} old male child brought by his parents with complaints of not gaining weight and height, loss of appetite, irritability, generalized weakness. He received treatment but didn’t get a satisfactory result. Hence, he was brought to O.P.D. of Kaumarbhritya/Balroga for further management.

H/O past illness:

No H/O any major illness.

No significant H/O previous hospitalization or similar illness in family.

H/O Immunization: All vaccines received upto age as per schedule. B.C.G. Mark present

Birth History:

- Prenatal: No h/o Oligo/Poly/P.I.H./Diabetes
- Perinatal: FTND BCIAB having B. Wt -2.3kg.
- Postnatal - Not significant.

Dietary history:

Exclusive Breast feeding for 6 months, at 6 months of age complementary feeding was initiated but was insufficient in quality & quantity.

Current calorie intake = 867 cal energy against 1200 cal need /R.D.A. (150cal/kg/day) Current Protein intake = 7.1 gm against 10.6 gm need /R.D.A. (1.3/kg/day).

EXAMINATION:

Anthropometry:

- Height: 76 cm
- Weight: 7.9kg
- H.C.: 44cm
- CC: 43cm
- M.A.C.: 11cm

General examination:

- G.C.- Mod.
- T-97.6 °F
- BP-110/80 mm of Hg.

DIAGNOSIS:

Present weight = 7.9kg

Present height = 76cm

Weight for height = < -1SD

M.A.C. = 11cm

therefore, Severe Acute Malnutrition

Investigations-

- CBC= Hb-8.5 gm%.
- WBC-9900/cumm
- RBC-3.78x10¹²/mL
- MCHC-31.60 g/dl.
- Sr. Total protein-6.1 gm/dl
- SGOT-50.0U/L.
- SGPT-30 IU/L.
- Sr. Creatinine-0.6 gm%
- Blood urea- 30mg/dl.
- BSL (Random)-102.0 mg%.
- Urine (Routine):
 - Albumin - nil
 - Sugar – Nil
 - (Microscopic)-Pus Cells- Nil.

MATERIALS AND METHODOLOGY:

This case was managed with *Ayurveda* regimen which helps in *Agnivardhana*, *Amapachana* and *Brihana kama*, along with dietary management.

The treatment principle was-

- Agnideepana* and *Aama pachana*, *Brimhana*
- Dietary management as suggested in Maharashtra Government Nutrition Protocol Total duration of case study was of 28 days.

THE REGIMEN OF THIS MANAGEMENT PROTOCOL IS GIVEN AS BELOW:

Sr.no.	Principle	Drugs	No. of days
1.	<i>Deepana & Pachana</i>	<i>Lashunadi vati</i>	07
2.	<i>Balya & Brimhana</i>	<i>Kumarkalyana rasa + Guduchyadi churna</i>	21
3.	<i>Ahara</i>	RUTF + other diet	28

1. *Lashunadi vati* 1 tab (125mg) B.D. for 7 days with plain water as *Anupana*.
2. Ayurvedic regimen- *Kumarkalyana rasa*^[8] 5gm + *guduchi satva* 7gm + *musta churna* 5gm + *Yash-timadhu Churna* 5gm+*Shatavari churna* 5gm +*Ashwagandha churna* 5gm+ *Kraunchbij churna*

7gm Divided in 28 equal parts 500mg B.D. with *Madhu* as *Anupana*.

3. Ready to use therapeutic feed (RUTF)^[9]

ASSESSMENT CRITERIA:

1. Anthropometry.
2. SNAQ.
3. Total Calorie intake.

OBSERVATIONS:

Simplified Nutritional Appetite Questionnaire (SNAQ)^[10]

SNAQ score <14 or = 14 indicates significant risk of at least 5% weight loss within six months.

Sr. no.	Title					
		a	B	c	d	e
1	My appetite is	Very poor	Poor	Average	Good	Very good
2	Food tastes	Very poor	Poor	Average	Good	Very good
3	When I eat	I feel full after eating only a few mouthfuls	I feel full after eating about a third of a meal	I feel full after eating over half a meal	I feel full after eating most of the meal.	I hardly ever feel full.
4	Normally I eat	. Less than one meal a day	. One meal a day	Two meal a day	Three meal a day	More than three meal a day

Assessment Criteria

Sr. no.	CRITERIA	1 st Day	14 th Day	28 th Day
1	Height	76cm	76.5cm	77.2cm
2	Weight	7.9kg	8.2kg	8.7kg
3	Head Circumference	44cm	44.2cm	44.4cm
4	Chest Circumference	43cm	43.4cm	43.8cm
5	Mid Arm Circumference	11cm	11.1cm	11.3cm
6	SNAQ Score	10	11	14

DISCUSSION

This case was presented with symptoms of Severe acute malnutrition. Patient has already received the treatment for above symptoms but didn't get satisfactory relief. Hence facility-based management was considered for this case. Along with management, special attention was given to dietary plan. Dietary plan was made according to patients' daily requirements of calories, proteins & also keeping in mind the *Agni* factor of patient.

Due to faulty dietary & bowel habits *Aama* (undigested material which is toxic in nature) is produced. Due to this *Aama*, metabolism is disturbed. *Aama Pachana* enhances the *Agni* (Digestive fire) which properly assimilates diet & converts it into well-formed *Dhatus*.

Thus, *Aama Pachana* was initiated on Admission with *Lashunadi Vati* & continued for 7 days. *Lashunadi vati* is *Agnideepak* & *Aampachak*. Then Ayurvedic regimen which mainly consists of *Kumarkalyana rasa* which mainly useful in *Agnivikruti* (hampered

digestive fire), *Karshya* (Emaciation) along with other herbal drugs like *Guduchi*, *Musta*, *Yashtimadhu*, *shatavari*, *Ashwaganda* & *Kraunchbij churna* which are having *Deepana*, *Pachana*, *Balya* & *Brihaniya* action. This regimen helps to build proper *Agni* (digestive Fire), helps to increase weight & proper growth & development & sustain it for longer period. So, in this case, there was a gradual increase in daily calorie intake & weight. Though *Ahara* (Dietary Management) in severe acute malnutrition is an important factor to consider, appetite remains the decisive factor for digestion. This appetite is completely dependent upon digestive fire or *Agni* which converts the food consumed into various structural, functional constituents of energy. One of the important parts of management is nutritional rehabilitation with high energy food. Ready to use therapeutic food (RUTF) is energy dense, mineral & vitamin enriched food that has greatly improved management of S.A.M. The composition is as follows.

Sr.no.	Composition	
1	Peanut paste	30%
2	Sugar	29%
3	Milk Solids	20%
4	Vegetable oil	18%
5	With added mineral mix	
6	Total Calories per 100g	543Kcal
7	Total protein per 100g	15gm

This was given according to the need of the patient. For palatability purposes & for maintaining interest regarding food the normal diet rich in calories & protein was also continued.

CONCLUSION

Child with severe acute malnutrition shows the reductive adaption of the body physiology which slows down the process of working of body systems. He needs gradual correction in calories, proteins & other essential nutrients. Digestion of food is completely dependent upon Appetite & digestive capacity of body. In *Ayurveda*, it is termed as *Agni*. *Agni* or digestive power play's important role to maintain nutritional status of the individual. *Agni* or digestive converts the food consumed in various structural, functional constituents of energy. This case of severe acute malnutrition focuses & concludes that though diet is administered in systemic way, rich in protein & calorie, still *Agni Chikitsa* remains the mainstay of treatment even in pediatric population. As *Agni* or digestive power improves the metabolism, prepare gut to assimilate the protein rich diet & medicines. This *Ayurveda* regimen helps to increase in *Agni* or digestive fire.

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