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### Review Article

#### MANAGEMENT OF PEM THROUGH AYURVEDA PERSPECTIVE

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#### ABSTRACT

The World Health Organization (WHO) defines malnutrition as "the cellular imbalance between the supply of nutrients and energy and the body's demand for them to ensure growth, maintenance, and specific functions." The term protein-energy malnutrition (PEM) applies to a group of related disorders that include marasmus and kwashiorkor. It is a major public health problem in India. The prevalence of Protein energy malnutrition is 67.7% in India. The prevalence of PEM is high among rural children (71.1%) compared to urban children (64.4%) and this difference is found to be statistically significant. Ayurveda explained diseases related to nutritional deficiency such as *Phakka*, *Parigarbhika*, *Balashosha* etc in different Samhitas. Management principles in Ayurveda can be classified in two categories i.e. *Santarpana* and *Aptarpana*. PEM is a deficiency disease and it could be managed by *Santarpana*. Principle of *Santarpana Chikitsa* is based on two factors, correction of *Agni* (digestive power) and nourishment of *Dhatu*. Thus *Agni Chikitsa* and *Brimhana Chikitsa* can be helpful in management of malnourishment.

**Keywords:** PEM, *Balashosha*, *Karshya*, *Parigarbhika*, *Phakka*, Nutritional deficiency

### 1.1. Introduction:

The World Health Organization (WHO) defines malnutrition as "the cellular imbalance between the supply of nutrients and energy and the body's demand for them to ensure growth, maintenance, and specific functions." The term protein-energy malnutrition (PEM) applies to a group of related disorders that include marasmus and kwashiorkor. It is a major public health problem in India. It affects particularly the preschool children (<6 years) with its dire consequences ranging from physical to cognitive growth and susceptibility to infection. This affects the child at the most crucial period of time of development which can lead to permanent impairment in later life. PEM is measured in terms of underweight (low weight for age), stunting (low height for age) and wasting (low weight for height).

The prevalence of Protein energy malnutrition is 67.7% in India. The prevalence of PEM is high among rural children (71.1%) compared to urban children (64.4%) and this difference is found to be statistically significant. The prevalence of stunting among under five is 48% (moderate and severe) and wasting is 20% (moderate and severe) and with an underweight prevalence of 43% (moderate and severe), it is the highest in the world. Under nutrition makes the child susceptible to infection and complements its effect in contributing to child mortality. This accounts for 22% of the burden of disease in India and adversely affects the economic growth of the country with an estimated adult productivity loss of 1.4% of gross domestic product (GDP). Although protein-energy malnutrition affects virtually every organ system, this article primarily focuses on its cutaneous manifestations. Patients with protein-energy malnutrition may also have deficiencies of vitamins, essential fatty acids, and trace elements.

Ayurveda emphasizes good nutrition at every stage of life starting from the conception i.e. *Garbhadhana*. Ante natal care (*Masanumasiak Garbhini Paricharya*) regime explained in Ayurveda is for overall growth and development of the foetus in order to preserve health of mother and offspring. Nutritional aspects of Ayurveda are care of pregnant lady, infant nutrition, breast feeding, complementary foods and proper weaning with due applied aspects. Malnutrition is viewed under *Apatarpanajanya Vyadhis* in Ayurveda. Based on severity and etiology they may be considered as *Karshya*, *Phakka*, *Parigarbhika* and *Balashosha*. Ayurvedic nutritional principles suitable to the current era are essential for management of malnutrition in children.

The aim of the study is to understand protein energy malnutrition under Ayurvedic aspect. To study the Classical similarity of protein energy malnutrition with literature and management of protein energy malnutrition in Ayurveda.

### 1.2. AYURVEDIC VIEW-

Lower socio-economic condition, higher birth order, lower birth interval and faulty feeding habits are root cause of malnutrition in children. Infant and child nutrition especially in the first few years of life is crucial.

India evidences major concern regarding childhood malnutrition despite enormous efforts. It causes more than half of the nearly 11 million deaths each year among children under age five. Ayurveda emphasizes good nutrition at every stage of life season, as well as daily routine, in order to preserve health of mother and offspring. Nutritional aspects of Ayurveda are care of pregnant lady, infant nutrition, breast feeding, complementary foods and proper weaning with due applied aspects. Ancient Acharyas explained diseases related to nutritional deficiency such as *Phakka*, *Parigarbhika*, *Balashosha* etc in different Samhitas. Malnutrition is such a condition where children fail to maintain natural body capacities such as growth, resisting power to infections as well as recovering from disease, learning and physical activities. Malnutrition is viewed under *Apatarpanajanya Vyadhis* in Ayurveda. Based on severity and aetiology they may be considered as *Karshya*, *Phakka*, *Parigarbhika* and *Balashosha*. Ayurvedic nutritional principles suitable to the current era are essential for management of malnutrition in children.

### 1.3. ETIOLOGY OF MALNUTRITION IN AYURVEDA-1

In Ayurveda it is mentioned that *Ruksha Annapana* (food which causes dryness), excessive intake of *Kashaya* (Astringent), *Katu* (spicy) and *Tikta* (Bitter) *Rasa*, *Alpabhojana* (inadequate food), *Pramitashana* (intake of nutritionally deficient food), *Anashana* (absolute no food intake), *Langhana* (Fasting), *Ativyayam* (excessive exercise), *Malamutradinigraha* (Suppression of natural urges), *Vatasevana* (excessive exposure to wind), *Atapasevana* (Excessive exposure to sunlight), *Atibhargamana*, *Atichinta* (worry), *Atikrodha* (anger), and *Atibhaya* (fear) can be causative factor for malnutrition.<sup>1 2 3</sup>

### 1.4. MALNUTRITION DESCRIPTION IN AYURVEDA

Signs And Symptoms of malnourished or *Karshaya* is as follows: The lean person has *Shushka-Sphic*, *Udar*, *Greeva* (Dried up buttocks, abdomen, neck), *Dhamanijalasantataha* (Prominent vascular network) *Twagasthishesho*, *Atikrusha* (Remnant of skin and bone), *Sthoolaparva*(Thick joints), *Vyayamatisauhityam* (The over lean does not tolerate physical exercise, over saturation), *Kshutpipasamay-Aushadham* (dose not tolerate high in toxicity of hunger, thirst, disease, drugs).

In different samhitas of Ayurveda these 4 diseases are described that are near to malnutrition as mentioned in modern medicine.<sup>4</sup>

1. *Balshosha*: The causes of *Balshosha* are *Shlaishmika Annasevana* (Excessive energy dense food), *Shitambu* (cold liquid items) and *Diva Swapna* (excessive day sleep). These factors can create impairment of *Agni*. Clinical features of *Balshosha* are *Arochaka* (reduced digestive capacity), *Pratishyaya* (Running nose), *Jwara* (fever) and *Kasa* (Cough); and at last baby may lead to *Shosha* (Emaciation)<sup>5 6</sup>

2. *Phakkaroga*: In *Phakkaroga*, *Ksheerajphakka*, *Garbhajphakka* and *Vyadhiphakka* are described. *Ksheerajphakka* is due to intake of *Shlaishmika Dughdha*. *Vyadhijaphakka* is malnutrition condition

resultant of any diseases as *Graharoga* etc. *Garbhajphakka* is due to feeding of baby by pregnant lady.<sup>7</sup> Clinical features of *Phakkaroga* are wasting of buttocks, upper limbs and thighs, Pot belly abdomen, head appears big due to relatively wasting in body parts and baby is unable to walk.

3. *Karshya*: *Karshya* is under nutrition condition due to reduced food intake of baby resulting from less intake, if mother use *Vatavardhakahara-Vihara* and baby take *Vatadushitstanya*. Ultimately, baby become malnourished.

4. *Parigarbhika*: If any baby is on breast milk of pregnant women, then *Parigarbhika Roga* can occur and that milk have poor nutrients. Clinical features of *Parigarbhika Roga* are cough, impaired digestive capacity, vomiting, fever and anorexia. *Agni Sada*, *Aruchi*, *Karshya*, *Kasa-Vamana*, *Bhrama-Tandra*, *Kosthavridhi* are the characteristic feature which are seen in affected children due to this disease.

### 1.5. AYURVEDIC MANAGEMENT-

Ayurveda has a holistic approach in view of each disease. Management principles in Ayurveda can be classified in two categories i.e. *Santarpana* and *Aptarpana*. PEM is a deficiency disease and it could be managed by *Santarpana*. Principle of *Santarpana Chikitsa* is based on two factors, correction of *Agni* (digestive power) and nourishment of *Dhatu*.

Management principles of *Balashosha* includes nutritional intervention to mother, *Abhyanga* with *Brimhana* oil. Drug intervention in *Balashosha* improves digestion and appetite. *Snehapana* helps to improve weight and strength, wholesome diet helps to maintain *Dhatu Samya*.

Treatment of *Balashosha* includes those herbs, which not only remove blockage of channel but also increase digestive fire too. In this direction, ancient sage described numerous single and combination of herbs and herbo-mineral compound. Out these, some mentioned here as powder of *Trikatu*, *Manjistha*, *Patha*, *Girikadamba*, *Saindhava Lavana* should be mixed with *Madhu* and *Ghrita* are given to relieve *Shosha*. Other compounds are *Atipushtikara Yoga*, *Vidarikandadi Churna*, *Palash Amalki Rasayana*, *Ashwagandha Ghrita*, *Utsadana* and *Abhishek*. But before administration of such compound, we should remove blockage of channels by advising various *Ghrita* such as *Madhuyasthisadhita Ghrita*, *Shatpala Ghrita* and *kumara Kalyana Ghrita*.<sup>8</sup>

*Phakkaroga* (osteomalacia)<sup>9</sup> – Management includes *Shodhana* of mother, *Snehana* for a week followed by *Virechana*, oil massage (*abhyanga*). The child suffering from *Phakka* (marasmus) should drink *Kalyanaka*, *Satpala* or *Amrita Ghrita* till seven nights, afterwards cleansing (milk treated with *Trivrit*) should be done. After purification of *Kostha* (digestive system, the child suffering from *Phakka* (marasmus) *Brahmi Ghrita* should be advised, however, this *Brahmi Ghrita* should not be given to untouchables as its use destroys them. The milk medicated with (appetizing auspicious drugs), (along with) either *Rasna*, *Madhuka* or

*Punarnava, Ekaparni, Eranda, and Satapuspa* or *Draksha, Pilu* and *Trivart* should be used. Pieces of meat soup or medicated milk should be taken with *Sali* cereal, and also drink same daily. By use of this one attains life, becomes free from diseases. The oil cooked (medicated) with these is beneficial in all types of *Phakka* (marasmus). Uses of *Ghrita*, oil, milk, soup (vegetable) or juice (meat-soup) twice medicated with *Rasna*, becomes free from all the diseases. In case of predominance of *Kapha*, the urine mixed with milk should be given for drinking

*Parigarbhika*:<sup>10</sup> *Parigarbhika* explains how a child gets humiliated by nutritional deficiencies and gradually develops Kwashiorkor like situation. It indicates the development of malnutrition during infancy period. *Agnideepana* is the main stay of treatment. Charka says “*Aharmatra Puna Agnibalapekshni*”. Thus, Agni of the child is modified as per the food

*Karshya*:<sup>11</sup> *Aahar Dosh*a such as *Alpashana* (reduced intake) and *Vishamashana* (false habit of intake) are predisposing factor for this disorder. *Nidaan Parivarjan, Deepan, Pachana, Samshmana Chikitsa, Rasayan* therapy, *Panchkarma* procedure such as *Basti* therapy should be given.

## 1.6. DISCUSSION:

According to Ayurveda, three chief cause of the disease are “*Asatmendriyarth Samyoga, Pragyaparadha* and *Parinam*’. in other words, main cause of diseases are *Aahar* (Ingestion), *Vihar* (Behavior) and *Kala* (Environment or Time). The *Aahar* (Proper Improper diet) is may be a cause of growth and development of body or disease. So the growth / development and health of a child is totally depends on the diet. Ayurveda is one of the traditional systems of medicine that practices holistic principles primarily focussed on personalized health. Where in the primary principle of *Chikitsa* (treatment) focuses on *Dhatusamyakriya*, which brings the *Dhatus* in *Samyaavastha* to support the body. *Vatadi Doshas, Rasadi Dooshya, Swedadi Mala* are called as *Dhatu*. The *Prakruta-Avastha* is that where in all these *Dhatus* are properly formed and functioning. The pathological derangements of these leads to *Vikruthi*. The vary object of this science aims at maintaining the equilibrium of *Dhatus*. Though many *Upakramas* for *Karshya* has been explained in classics like *Brimhana, Snehana* and *Basti*. Prime importance is given to *Brimhana Upakarama* by all *Acharyas*.

*Karshya* is the condition where in and *Agni* leads to formation of *Alpa-Poshaka Dhatus* & resulting in depletion of *Uttorotara-Dhatus*. Where in the *Samavastha* of *Dhatus* is disturbed and the proper functioning of body is hampered. This condition can be rightly correlated to under nutrition where in physical dimension of body is deranged due to improper nutrition leading to small for age condition.

*Agni Chikitsa* is plays significant role in malnutrition. *Mandagni* leads to *Udavarta*, which develops *Chardi* and *Kshudhamandya*. This condition further ends with emaciation of all the seven *Dhatu*, which further lead to disease called as *Shosha*.

After *Agni Chikitsa*, *Brimhana Chikitsa* must be started. The *Dravyas* which possess *Guru*, *Sheeta*, *Mrudu*, *Snigdha*, *Bahala*, *Sthoola*, *Picchhila*, *Manda*, *Sthira*, and *Slakshana Gunas* are said to be *Brimhana* in action. Acharya Charaka further explains *Dravyas* with these qualities like – *Navaanna*, *Shali*, *Masha*, *Godhuma*, *Ekshuvikara*, *Gramyaanupaaudaka Mamsa*, *Dadhi*, *Dugdha*, *Ghruta* and *Rasayana Dravyas*.

## 1.7. CONCLUSION:

Proper nutrition is the main effective cause of growth and development of a child. The childhood stage is more prompt to growth and development than the other stage of age. The deficiency of proper nutrition leads to various diseases. Malnutrition is described in modern medical sciences but is similar to nutritional disorder in Ayurveda like *Karshya*, *Phakka*, *Parigarbhika* and *Balshosha*. *Karshya* or disease caused due to malnourishment can be successfully managed by Ayurveda intervention. *Agni Chikitsa* plays an important role in management of disease. *Brimhana* is the line of management for such disorders. *Brimhana Chikitsa* includes *Abhyanga*, *Snana*, *Basti*, *Ahar- Vihara*, sleep and peaceful mind.

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