ABSTRACT
Nutrition has always been a basic necessity of mankind and diseases resulting from its inadequacy or overuse have existed even before the dawn of modern science. Ayurveda which is the ancient system of medicine of India has described these diseases with their etiology and treatment. This article reviews the ancient wisdom about nutritional disorders in children and also critically analyses it in light of contemporary science and evidences. The materials were collected from the classical Ayurvedic literatures, pediatric textbooks, magazines and research journals. It is found that the etiology and features described under Karshya, Bal Shosha, Phakka, and Parigarbhika (nutritional disorders described in ayurveda) find close resemblance to protein energy malnutrition. The treatment described in classics is relevant with a scope of clinical and laboratory research on them.

KEYWORDS: Nutritional disorders in ayurveda, Karshya, Bal Shosha, Phakka, Parigarbhika.

INTRODUCTION
India is one of the highest ranking countries of the world for the number of children suffering from malnutrition. In 2015, Global Hunger Index report ranked India 20th in world and third amongst South Asian nations. Nutritional disorders comprise of both undernutrition and overnutrition. Undernutrition or malnutrition can be caused by an insufficient intake of food...
or of particular nutrients or by an inability of body to absorb or assimilate these nutrients. On the other hand overnutrition is caused by overconsumption of food. The former is referred as ‘Aptarpanjanya Vyadhi’ and the latter as ‘Santarpanjanya Vyadhi’ in ayurveda. Nutritional disorders can be particularly serious in children, since they interfere with growth and development and may predispose to many health problems such as infection and chronic diseases.

APTARPANJANYA VYADHI (MALNUTRITION IN CHILDREN)

The following diseases can be categorized as malnutrition disorders in children.

KARSHYA

It is the condition of excessive emaciation.

Etiology: Excessive emaciation is caused by the intake of diet devoid of any fat, excess fasting, intake of food in inadequate quantity, over administration of sanshodhan treatment or Panchkarma procedures, grief, suppression of natural urges including urge for sleep, repeated baths, hereditary factors, old age, chronic illness and stress.\(^1\)

Clinical features: Buttocks, abdomen and neck of a karshya patient are emaciated; a vascular network is visible on skin with prominent joints. Person appears to have skin and bones only. An excessively emaciated person cannot tolerate physical exercise, intake of food in large quantity, hunger, thirst, diseases and drugs. They also cannot stand excessive cold and heat. Such emaciated persons often suffer from splenic diseases, cough, wasting, dyspnea, gulma (abdominal tumor), piles, abdominal diseases and malabsorption diseases.\(^2\)

Principle of treatment: Light and nourishing diet is prescribed for the nourishment of the Karshya patients.\(^3\) In case of an emaciated person, light and nourishing diet (like old shali rice) should be given so as to bring about proper nourishment in them. Such diets being light, serve as stimulants of digestive power and bring about nourishment due to their nutritive property. Sleep, joy, comfortable bed, contentment, tranquility of mind, abstinence from anxiety and physical exercise, pleasant sights, intake of freshly harvested rice, fresh wine, meat soup of domestic, marshy and aquatic animals, well prepared meat, curd, ghee, milk sugarcane, shali rice, Phaseolus radiates, wheat, sweet preparations, enema consisting of unctuous and sweet herbs, regular oil massage, use of scents and garlands, use of white
apparel, elimination of doshas in time and administration of rejuvenating and Brinhana (nutritive) drugs remove emaciation and bring out nourishment in the body.\cite{4}

**BALSHOSHA**

This disease of children is described by Acharya Vagbhatta.\cite{5}

Indulgence in excessive sleep, intake of cold water and breast milk vitiated by kapha cause an imbalance in doshas and increase in Kapha in baby. This Kapha causes obstruction in Rasavaha srotas of child, which are the channels for nutrition, thus causing undernutrition. The undernourished child suffers from lack of appetite, recurrent respiratory infections, cough, fever, emaciation of muscles and paleness of face and eyes. To combat Balshosha, snehapan, use of anabolic herbs and preparations along with appetizers is recommended. Concurrently efforts are made to clear the obstructed channels and to purify the vitiated milk in the mother.

**PHAKKA**

The word ‘Phak’ indicates the slow movements or creeping like a snail or failure of the skill of locomotion even after attaining age of one year. So when the child becomes crippled with wasting of body, apathy and slow movements, he is said to be suffering from Phakka roga. Acharya Kashyap\cite{6} has described three types of phakka namely, Ksheeraj, Garbhaj and Vyadhij Phakka. Ksheeraj Phakka is similar to Bal Shosha and is caused by milk vitiated by Kapha dosha. Garbhaj phakka is caused when a mother whose baby is still exclusive breastfeeding conceives again which results in decreased quantity and quality of mother’s milk. Vyadhi Phakka is caused by chronic illnesses and unhygienic conditions. It manifests as severe form of malnutrition with clinical features such as wasting of buttocks, thighs and upper limbs, pot belly, big head appearance, inability to walk etc. The treatment depends on the cause. In case of milk impurity, the mother should be treated. In case of chronic diseases, attention should be given to treatment of such diseases. The treatment of Phakka includes snehana with Kalyanaka ghrita followed by shodhana. Administration of drugs having property of activating the neuromuscular response like raasna, punarnava etc. along with Samvardhana ghrita is done. Nutritious diet must be prescribed like ghee, soups and mamsa rasa. Abhyanga with Raj Taila is advised to improve muscle tone. Rehabilitative measures like Tripad chakra ratha (Tricycle) are also advised to help child regain his locomotive ability.
PARIGARBHIKA$^{[7]}$

It is described by Astanga Sangraha which states that when a baby feeds on milk of a pregnant mother or there is an abrupt stoppage of breast milk to baby due to pregnancy of mother, the baby suffers from Parigarbhika. It manifests as respiratory illnesses, loss of appetite, vomiting, lethargy, abdominal distension. The treatment of Parigarbhika should be aimed at bringing the Agni to normalcy (correction of digestion and appetite). This is achieved by small doses of ghrita made of carminatives and digestive agents. Various Lehya preparations, Jeevaniya herbs and milk are also prescribed.

SUSHKA REVATI

Bal Graha are a group of diseases of children which are caused by unidentified factors and carry a high mortality and morbidity rate. Sushka Revati is one of them and manifests as progressive emaciation of all body parts, diarrhea, anorexia, skin changes, abdominal nodular swellings and geographic tongue.$^{[8]}$ General line of management includes personal hygiene measures anointment, bath and fumigation, isolation and disinfection of surroundings. Various drugs like swarna basantmalti, shilajatvadi lauha, shringa bhasma, vardhaman pippali and medicated ghrita are advocated.

DISCUSSION

The various diseases described above represent a wide spectrum of protein energy malnutrition. Bal Shosha correlates well with caloric malnutrition and gives the child a marasmic appearance with white puffy and slimy face. On the other hand, Parigarbhika represents protein malnutrition (Kwashiorcar). It refers to the disregarded child consequent to the pregnancy. Karshya is a state of wasting (low weight for height) and stunting (low height for age) due to chronic malnutrition. Among three types of Phakka, Ksheeraj Phakka and Garbhaj Phakka have etiology and manifestations similar to Bal Shosha and Parigarbhika respectively. Vyadhija Phakka may be understood as protein energy malnutrition due to low intake of nutrients, chronic illness and malabsorption. This adversely affects the child development resulting in delayed milestones.

CONCLUSION

Deficiency in nutrition inflicts long term damage to both individual and society. Malnourished children are more prone to infectious diseases such as pneumonia and tuberculosis, which leads to higher mortality rate. Ayurveda has precisely described the etiology, clinical features and treatment of malnutrition. A thorough study of the same equips
us with a better understanding and enables us for an early diagnosis, apt management as well as prevention of nutritional deficiencies.

REFERENCES