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"Navigating Marasmus WithHomoeopathy: A Detailed Review of Current Practices"

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ABSTRACT

Nutritional deficiency in children is a raging problem in a country like ours India, where every third child suffers from nutritional deficiency of different types. Nutritional deficiency leads to many problems in childhood which if not addressed properly have leads to impact upon the health of the children and the nation. Medicines have a definite role to play in diseases arising out of nutritional deficiency. This deficiency can be or being solved by nutrition supplementation in the form of medicines. But it has many side effects. But Homoeopathic literatures and philosophy speak highly of the cure of such problems with homoeopathic medication. Besides that Homoeopathic repertory has voluminous information, utilizing which we can come up to a proper medicine and helps to manage such problems.

Keywords: Marasmus, Nutritional deficiency, Homoeopathic medicines.

Introduction:

The health of an individual depends upon many factors and among all his lifestyle and diet is most important. Nowadays human beings are more vulnerable to various disorders due to their faulty life style and dietary habits. Marasmus is a form of severe malnutrition characterized by energy deficiency. It can occur in anyone with severe malnutrition but usually occurs in children. Body weight is reduced to less than 62% of the normal (expected) body weight for the age. Marasmus is typically observed in infants who are breastfeeding when the amount of milk is markedly reduced or, more frequently, in those who are artificially fed. Failure to thrive is the earliest manifestation, associated with irritability or apathy.

Definition of malnutrition is dived into three parts:

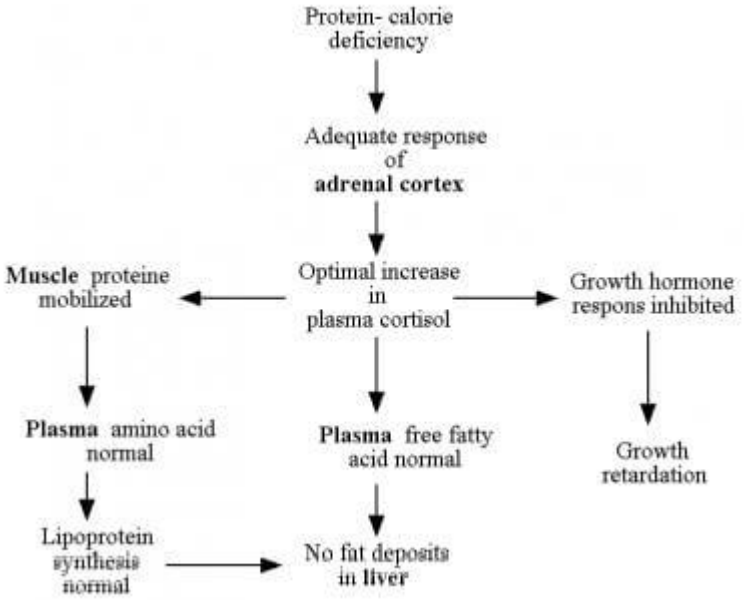
A. Undernutrition can occur either due to protein-energy wasting or as a result of micronutrient deficiencies. It adversely affects physical and mental functioning, and causes changes in body composition and body cell mass.
B. Micronutrient malnutrition results from inadequate intake of vitamins and minerals. Worldwide, deficiencies in iodine, Vitamin A, and iron are the most common.
C. Protein-energy malnutrition- 'Undernutrition' sometimes refers specifically to protein–energy malnutrition (PEM).This condition involves both micronutrient deficiencies and an imbalance of protein intake and energy expenditure.

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."
Marasmus is the most prevalent severe form of malnutrition and the most important nutritional disease in developing countries. Deficiency of energy-giving foods predominates over protein deficiency. Its origin may be primary, due to insufficient food intake, often associated with infectious or parasitic diseases, or secondary, due to other conditions that interfere with the absorption or assimilation of nutrients. It contributes significantly to high rates of morbidity and

mortality in childhood. It is now recognized as a public health problem, and action to reduce its extent is the responsibility of government nutrition policies and health personnel.

Epidemiological factor:
Worldwide, an estimated 852 million people were undernourished in 2000–2002, with most (815 million) living in developing countries.Malnutrition is consequently the most important risk factor for the burden of disease in developing countries. It is the direct cause of about 3,00,000 deaths per year and is indirectly responsible for about half of all deaths in young children. The risk of death is directly correlated with the degree of malnutrition. Poverty is the main underlying cause of malnutrition and its determinants. The degree and distribution of protein–energy malnutrition and micronutrient deficiencies in a given population depends on many factors: the political and economic situation, the level of education and sanitation, the season and climate conditions, food production, cultural and religious food customs, breast-feeding habits, prevalence of infectious diseases, the existence and effectiveness of nutrition programs and the availability and quality of health services.

Patho-physiology:
Marasmus results when subcutaneous fat and muscle are lost because of endogenous mobilization of all available energy and nutrients. The overall metabolic adaptations that occur during marasmus are similar to those in starvation. Initially, gluconeogenesis is triggered and aims at maintaining the energy requirements of the body leading to a perceived increase in metabolic rate.



PATHO-PHYSIOLOGY OF MARASMUS
Causes of Marasmus
Marasmus is mainly caused by nutrient deficiency due to malnourishment. Here are some risk factors of marasmus:
1. Poor diet.
2. Food shortages.
3. Insufficient breastfeeding.
4. Food shortages.
5. Insufficient breastfeeding.
6. Infections and diseases.
7. Anorexia.

Table 1: Commom signs and symptoms of Marasmus.

Site	Sign
Face	Moon face (in kwashiorkor); shrunken, monkey-like face (in marasmus)
Eye	Dry eyes; pale conjunctiva; periorbital edema; Bitot's spots (in vitamin A deficiency)
Mouth	Angular stomatitis; cheilitis; glossitis; parotid enlargement; spongy, bleeding gums (in vitamin C and B_{12} deficiencies)
Teeth	Enamel mottling; delayed eruption

Hair	Dull, sparse, brittle hair, with thinning of the hair follicles; hypopigmentation; flag sign (alternating bands of light and normal color); broomstick eyelashes; alopecia
Skin	Dry skin; follicular hyperkeratosis; patchy hyper- and hypopigmentation; erosions; poor wound healing; loose and wrinkled skin (in marasmus); shiny and edematous skin (in kwashiorkor)
Nail	Koilonychia; thin and soft nail plates; fissures or ridges
Musculature	Muscle wasting, particularly in the buttocks and thighs
Skeletal	Deformities, usually resulting from deficiencies in calcium, vitamin D, or vitamin C
Abdomen	Distended; hepatomegaly with fatty liver; possible ascites
Cardiovascular	Bradycardia; hypotension; reduced cardiac output; small vessel vasculopathy
Neurologic	Global developmental delay; loss of knee and ankle reflexes; poor memory, often resulting from deficiencies in vitamin B_{12} and other B vitamins
Hematological	Pallor; petechiae; bleeding diathesis
Behavior	Lethargic; apathetic; anxious

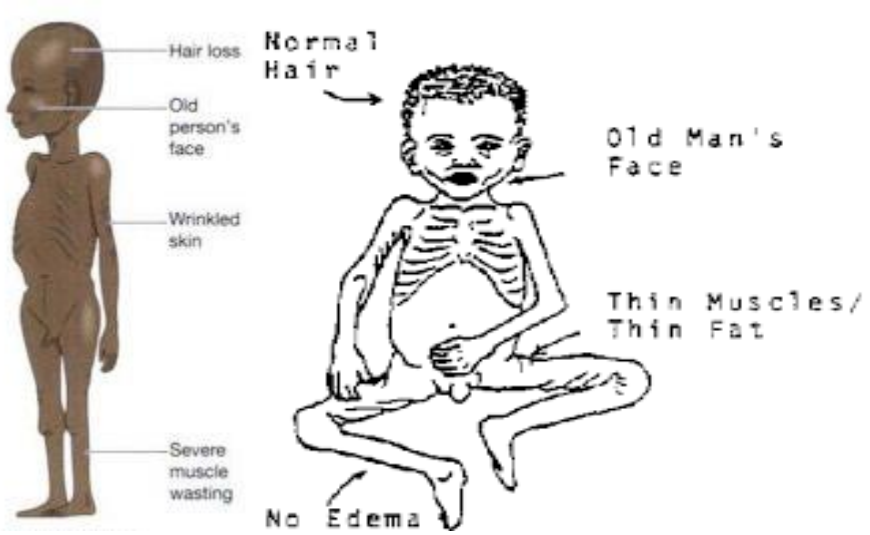


Fig. 1: Showing different symptoms of Marasmus.

Diagnosis:

a. Anthropometry is essential in the diagnosis of marasmus
b. Laboratory investigations can be used in the diagnosis of protein-energy malnutrition along with the investigation of associated mineral deficiencies. Laboratory investigations recommended by the WHO include:

- Haemoglobin and blood smear for hemoglobin or abnormalities in the red cell indices,
- Blood glucose,
- Serum albumin, electrolytes,
- Stool microscopy, and culture, including investigation of parasites,
- Human immunodeficiency virus testing, and
- Urine microscopy and culture.
- Other investigations frequently used as part of a nutrition profile include specific tests for plasma proteins such as transferrin, albumin, and thyroxine-binding prealbumin.

Treatment / Management

General management

1. Proper nutrition
2. Proper hygiene
3. Good environment
4. Proper care and attention
5. Proper prenatal and postnatal care
6. Proper treatment of infections and diseases

The management of marasmus is divided into three main phases:

A. Resuscitation and stabilization
B. Nutritional rehabilitation
C. Follow up and prevention of recurrence

Differential Diagnosis

A. Kwashiorkor

A child suffering from kwashiorkor will have a normal weight for height associated with generalized edema and dermatoses. Skin changes occur over areas of high friction or pressure, such as the perineum, limbs, ears, and armpits, which become hyperpigmented and then desquamate. Edema leads to a characteristic round-faced appearance and abdominal distension.
Kwashiorkor can be differentiated from marasmus by the presence of *overt edema*.

B. Marasmic Kwashiorkor

Marasmic kwashiorkor presents with the features of both marasmus and kwashiorkor. The child will have growth stunting associated with wasting and edema. The hair and skin changes associated with marasmic kwashiorkor are typically less severe than kwashiorkor. Abdominal distension may occur secondary to edema and an enlarged fatty liver.

C. HIV Wasting Syndrome

HIV wasting syndrome refers to the involuntary weight loss of more than 10% of the baseline associated with chronic diarrhea or weakness in a person suffering from HIV with no other explainable cause of weight loss.

D. Chronic Pancreatitis

Potential causes of pancreatitis in children include viruses such as Coxsackie B and mumps, traumatic injury, cystic fibrosis, and obstruction of the pancreatic ducts secondary to roundworms.

Prognosis

If the child returns to an environment that helps to maintain recovery then, in most cases, normal height and health will be achieved.

Complications

a. Short Term Sequelae

Potential short-term complications of marasmus include:

- Electrolyte abnormalities and risk of developing refeeding syndrome
- Cardiac failure and arrhythmia
- Urinary tract infection
- Sepsis and overwhelming infection
- Gastrointestinal malabsorption
- Hypothermia
- Endocrinological dysfunction

b. Long Term Sequelae

Childhood malnutrition has a strong association with decreased economic opportunity. It is strongly associated with shorter height as an adult and lower birth weight offspring.

c. Deterrence and Patient Education

As the majority of marasmus occurs in underdeveloped countries and tends to be associated with a lack of parental education, the distribution of nutritional information in the form of flyers or educational courses may be beneficial.

d. Enhancing Healthcare Team Outcomes

Marasmus requires the interplay and coordination between an interprofessional team of providers, nurses, pharmacists, nutritionists, and other associated healthcare professionals in order to enhance patient-centered care and improve outcomes following treatment.

Hahnemann and Constitution

Dr. Hahnemann gives a fair idea on the importance of the constitution in § 5 of Organon of Medicine, wherein he sates "*Useful to the physician in assisting him to cure are the particulars of the most probable exciting cause of the acute disease, as also the most significant points in the whole history of the chronic disease, to enable him to discover its fundamental cause, which is generally due to a chronic miasm. In these investigations, the ascertainable physical constitution of the patient (and intellectual character, his occupation, mode of living and habits, his social and domestic relations, his age, sexual function, ..etc., are to be taken into consideration".*
Hahnemann used the word *Beschaffenheit* in German, which usually translated as constitution in relationship to the Latin root "constiture" in homoeopathic works. Chambers Dictionary defines constitution as the natural condition of the

body or mind; disposition. He mainly refers constitution to the inherent in the natural frame, or inherent nature of the individual.

"Health is that balanced condition of living organism in which the integral, harmonius performance of the vital function tends to the preservation of the organism and the normal development of individual".

So, in a state of health, it is the vital force which is responsible for the normal functioning of the vital organs and all the physiological activities are coordinated by vital force.

But, when a person fall ill, it is the only this vital force, which is primarily deranged due to some morbific agents, which are inimical to life. This dynamic derangement of vital force is known as disease. These inimical forces affect the vital force because they are stronger in character. Because of this affection, normal functioning of vital force is altered. There is lack of harmony both at mental as well as physical plane, which shows itself through the material body as abnormal sign and symptoms. All these perceptible signs and symptoms constitute the diseases.

Modern system of medicine tries to study human being from materialistic point of view, they tries to explain vital phenomena in terms of some physio-chemical processes or in term of matter or energy. They recognize nothing but man's body. Their idea is that the liver is affected, so that person has the liver diseases. They have material concept of disease.

But homoeopathy believes in or accepts the concept of wholism. We study person as a whole. According to homoeopathy the man is sick, so there is disease or sickness. ***Dr. Hahnemann*** says "*there is no disease, but sick people*".

The treatment of the Individual basis of marasmus

- No amount of additional energy as lipids or carbohydrates would enhance convalescence of PEM unless the deficient specific nutrients are supplied in the balanced form.
- Homoeopathy advocates that when there is an imbalance in nutritional requirement and its supply, the deficient nutrients should be supplied in adequate quantity through natural food, provided the body can assimilate and absorb the same. In cases where there is deficiency of supply or the body is so weakened to absorb the natural nutrients, then it is needed to be supplied artificially.
- ***Hahnemann*** in § 94 of Organon of Medicine says that "While inquiring into the state of chronic diseases, the particular circumstances of the patient with regard to his ordinary occupations his usual mode of living and diet, his domestic situation, and so forth, must be well considered and scrutinized, to ascertain what there is in them that may tend to produce or to maintain disease, in order that by their removal the recovery may by prompted."
- In § 261: "The most appropriate regimen during the employment of medicine in chronic diseases consists in the removal of such obstacles to recovery, and in supplying where necessary the reverse: innocent moral and intellectual recreation, active exercise in the open air in almost all kinds of weather (daily walks, slight manual labour), suitable, nutritious, unmedicinal food and drink, etc."
- Thus, we need to provide the deficient nutrients in the body through proper diet, food and regimen to the patient along with the medicine. The different manifesting symptoms of PEM are taken into account to frame the Totality of the Symptoms to select the most appropriate similimum for the treatment of PEM following homoeopathic principles.
- In cases where the malnutrition is not due to the deficiency of nutrients alone, but the body's inability to use the available nutrients, then it is identified as a constitutional error in the system and advised its correction through constitutional homoeopathic medication.

Dr. H.A. Roberts explained that the Importance of nutrition and relation to susceptibility proves that the power of assimilation and nutrition is one of the phases of susceptibility.

Furthermore, ***Dr. Dhawle M.L.*** mentioned in his Principles and Practice of Homoeopathy under chapter Susceptibility that "normal susceptibility leads to a state of good health characterized by good nutrition and a healthy outlook on life. On the other hand, abnormal susceptibility affects them in the first instance and interferes with adaption, thereby leading to the disease's development. Poor nutrition leads to infectious diseases, immunological dysfunction and metabolic disorders. The experimental studies proved the relationship between diet and different types of infections scientifically.

Miasmatic Concept of Marasmus

Miasms are the fundamental cause of chronic disease. We can say that miasms are the dynamic disease producing power which stains and pollute the human organism. In § 72 of Organon of Medicine Dr.Hahnemann has mentioned that chronic diseases are due to dynamic infection with chronic miasmwhich help in individualization of patient.

The child must be treated with constitutional medicines and anti-miasmatic medicines. Miasm is one of the obstacles to cure , it predisposes the infant to certain type of diseases. Psora being the deficiency miasm , all the functions will be in hypo state, so anti-psorics can be thought of in case of hypo assimilation and hypo immunity. Sycotic child is always confused mentally and physically. syphilis being the destructive miasm, it can be thought of in case of congenital anomalies. Tubercular miasm can be thought of if the parents have history of Ill treated tuberculosis. Since tubercular

miasm has features of both psora (hypo immunity) & syphilis(destructive), it can be thought of in case of allergic manifestations.

Dr. Kent emphasized about deficiency disorders, aroused due to lack of certain elements in our system, or the inability to assimilate nutrients from foods, it the standard measure of almost all so-called Psoric conditions, and above a lack of balance in the equilibrium of health that manifests through a hypersensitivity of impressions-functional disturbances and that contrasts from consciousness to neuroses.

Homoeopathic Constitutional Medicines for Marasmus

1. ***ABROTANUM:*** Marasmus, especially of the lower extremities, despite a good appetite emaciation progresses, occurring in weak children who are emaciated, wrinkled, pale, blue rings around dull looking eyes, gnawing hunger and whining and bloated abdomen. Cross, irritable, anxious depressed.Pain in shoulders, arms, ***wrists***, and ***ankles***. Pricking and coldness in fingers and feet. ***Legs*** greatly emaciated. Joints stiff and lame. Painful contraction of limbs
2. ***ACETIC ACIDUM:***This drug produces a condition of profound anæmia, with some dropsical symptoms, great debility. Especially indicated in pale, lean persons, with lax, flabby muscles. ***Wasting and debility***. Acetic acid has the power to ***liquefy albuminous and fibrinous deposits***. Pale, lean people, with lax, flabby muscles. Wasting and debility. Irritable. face is pale, waxen, emaciated. Eyes sunken surrounded dark rings. Extremities emaciated oedema of feet and legs. Intense burning thirst
3. ***AETHUSA CYNAPIUM:***The characteristic symptoms relate mainly to the brain and nervous system, connected with gastro-intestinal disturbance. Restless anxious crying. Inability to think to fix the attention. Idiocy may alternate with furor and irritability. Photophobia, rolling of eyes on falling asleep. Dry mouth pustules in throat, intolerance of milk. undigested thin, greenish stool preceded by colic with tenesmus followed by exhaustion and drowsiness. Cholera infantum: child cold, clammy, stupid, with staring eyes and dilated pupils. Weakness of lower extremities, fingers and thumb clenched.
4. ***ALFA-ALFA:***From its action on the sympathetic, Alfalfa favorably influences nutrition, evidenced in "toning up" the appetite and digestion resulting in greatly improved mental and physical vigor, with gain in weight. It induces mental exhilaration of buoyancy,***i.e***, a general feeling of well being; clear and bright, so that all blues are dissipated. Dull, drowsy, stupid (***Gels***); gloomy and irritable, worse during evening.
5. ***BARYTA CARB:*** It is a very valuable medicine when there is stunted growth (low height), thinning of the body. In cases needing it the face of the child appears bloated and along with swelling of abdomen. He is mentally as well as physically weak. Mental dullness and slow intellectual development is also present. Low immunity with a tendency to catch cold frequently is also there.
6. ***CHINA:***Apathetic, indifferent, disobedient, taciturn, despondent. Ideas crowd in mind; prevent sleep. Disposition to hurt other people's feelings. Sudden crying and tossing about.The indication for using it is excessive thinning of legs and arms. Children needing it have pale faces that look sickly with bluish rings around the eyes. Lips appear dry, blackish. Anaemia may be present in them. Another main complaint that they may have is diarrhoea along with marked weakness.
7. ***CALCAREA CARBONICA:***This great Hahnemannian anti-psoric is a constitutional remedy *par excellence*. Children crave eggs, eat dirt and other indigestible things and are prone to diarrhoea. Forgetful, confused low spirited. Sensitive to light, lachrymation in open air ad early in the morning, eyes fatigue easily, spots and ulcers on the cornea. Distension of abdomen with hardness
8. ***CALCAREA PHOSPHORICA:***The anæmia after acute diseases and chronic wasting diseases. *Anæmic children who are peevish, flabby, have cold extremities and feeble digestion*. It has a special affinity for scrofulosis, chlorosis and phthisis.
9. ***IODIUM:***Rapid metabolism: *Loss of flesh* great appetite. Hungry with much thirst. Better after eating. *Great debility, the slightest effort induces perspiration*. *Iod.* individual is exceedingly thin, dark complexioned, with enlarged lymphatic glands, has voracious appetite but gets thin. Tubercular type.Rapid metabolism, loss of flesh great appetite. hungry with much thirst. Great weakness the slightest effort induces perspiration, loss flesh, yet hungry and eating well. liver and spleen sore and enlarged. Pain in the eyes, violent lachrymation.
10. ***TUBERCULINUM:*** Especially adapted to the light-complexioned, narrow-chested subjects. Lax fiber, low recuperative powers, and very susceptible to changes in the weather. Patient always tired; motion causes intense fatigue; aversion to work; wants constant changes. When *symptoms are constantly changing and well-selected remedies fail to improve, and cold is taken from the slightest exposure*. Rapid emaciation. Of great value in epilepsy, neurasthenia and in nervous children. Diarrhœa in children running for weeks, extreme wasting, bluish pallor, exhaustion. Mentally deficient children. Enlarged tonsils. This medicine suits children in which there is emaciation in spite of good appetite. They have weakness, exhaustion and feel tired all the time. They have low immunity with a tendency to catch cold easily. They may have prominent diarrhoea with excessive wasting (weight loss).

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