

## Differential Diagnosis & Complications and Management of Marasmus (Severe Malnutrition 3)

## Differential Diagnosis

### Kwashiorkor

The main differential for marasmus is kwashiorkor. The name for kwashiorkor is derived from the Ga language from Ghana and is used to describe the sickness that occurs in a child

following weaning. It results in children suffering from a diet with a sufficient calorie intake but insufficient protein intake. It is associated with diets with large amounts of maize, rice, or cassava.

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.

#### 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 distention may occur secondary to edema and an enlarged fatty liver.

#### *BioTalk on Differential Diagnosis & Complications and Management of Marasmus* 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.

It is thought that HIV wasting syndrome occurs as a result of malabsorption, hypermetabolism, endocrine dysfunction, and decreased appetite leading to a reduction in oral intake.

#### 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.

This may lead to the development of chronic pancreatitis, which may mimic protein-energy malnutrition. Malabsorption due to the insufficiency of pancreatic enzymes may lead to a reduction in calorie supply despite sufficient oral intake.

## 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

### 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

### Long Term Sequelae

Childhood malnutrition has a strong association with decreased economic opportunity; it can be used to predict poor functional outcomes as an adult, such as fewer years of schooling and a lower economic income. Childhood malnutrition is also strongly associated with shorter height as an adult and lower birth weight offspring.

## 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. Furthermore, new mothers should be assessed with regards to their knowledge of nutrition on admission to the hospital for



pregnancy checks or following the delivery of their child.

## 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. The recognition that marasmus is not just a state of calorie deficiency but rather a dysregulation

and loss of function of many bodily systems as a result of calorie deficiency allows the recognition of potential complications from early on. Furthermore, it is important to understand the mechanism by which refeeding syndrome occurs and how to properly treat marasmus in order to prevent this from occurring. The application of standardized protocols such as the WHO-HILA protocol has been shown to reduce mortality and morbidity in children suffering from marasmus.

#### Source

*Titi-Lartey OA, Gupta V. Marasmus. [Updated 2022 Jul 25]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK559224/>*

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