



Vitamin B1 Deficiency in Children with Beriberi Illness and Their Calorie Intake

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DESCRIPTION

Vitamin B1 (Thiamine deficiency) is an essential cofactor in the production of energy and metabolism, both of which are required for the synthesis of the molecules used in the dense against oxidative stress and the manufacture of neurotransmitters. Thiamine deficiency is most prevalent in populations where the diet primarily consists of very poor thiamine sources, such as wheat flour, polished rice (which removes the rich thiamine envelop), and milled white cereals, and where other significant thiamine sources, such as meat, fish, and vegetables, are infrequently consumed. The naturally occurring enzyme thiaminase, which is abundantly present in various vegetables, roasted insects, and raw and fermented fish sauce, is also connected to diets high in thiamine.

An insufficient intake of thiamine can result in disease and even death within 2-3 months. For previously healthy breastfed infants with less than two days of sickness who met the above definitions of potential or likely thiamine deficit, death was identified as being caused by thiamine deficiency, and as probable if coupled with mother's symptoms of thiamine shortage. Children with indications of pneumonia (cough, fever, \pm dyspnea) were excluded if there were no signs of thiamine shortage in the mother due to the possibility of a false-positive diagnosis of acute pneumonia (albeit infection can precede thiamine deficiency). Thiamine injections were given intramuscularly or slowly intravenously to patients with acute symptoms of thiamine insufficiency. If there was a suspicion of an associated infection, the proper care was been provided to them.

When polished rice is the main food source, such as in underdeveloped nations, beriberi is a significant contributor to new born morbidity and mortality. We investigated if thiamine deficiency existed in babies exhibiting the hallmarks of beriberi and whether heavy metal toxicity, maternal nutrition, or other environmental factors may have played a role. Many infants who

have beriberi present with very high pulmonary pressures. When these patients are challenged with thiamine, their metabolic issues and pulmonary hypertension quickly resolve. We made an effort to determine what led to the thiamine deficiency in these infants and their mothers. Low socioeconomic status mothers of these infants were undernourished and calorie deficient.

Beriberi is traditionally split into two main types: a dry form, in which peripheral neuropathy-related characteristics predominate, and a wet form, which mostly manifests as cardiovascular symptoms, including right-sided heart failure and normal or high cardiac output. There is a lot of overlap among these forms. Their primary source of food was polished non-parboiled rice, which was used to create soup but was rarely ingested with meat, beans, or thiamine-rich vegetables. More than half of the probands experienced fever and cough, which are known to raise thiamine demand and hasten clinical presentation. As the asymptomatic despite which having low ETKA levels since it is known that thiamine deficiency's clinical manifestation depends on calorie intake, particularly in the form of carbs. As a result, we draw the conclusion that all the infants had thiamine deficiency and displayed cardiac beriberi symptoms, including high-output heart failure and pulmonary hypertension.

CONCLUSION

The thiamine deficiency is far from under control, which is further supported in the recent study that is found many infants and also characterized by Leigh's syndrome. Thiamine supplementation is therefore being considered as a potentially life-saving therapeutic option for infants from low socioeconomic backgrounds who come with unexplained refractory Congestive Cardiac Failure (CCF) or acute respiratory failure. It comprises thiamine deficiency development, symptomatology, and emergency treatment, which are taken into account with crucial bariatric surgeons but also for additional medical disciplines engaged in treatment.

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