Abstract

Dairy protein in the treatment of malnourished children

The addition of milk powder to therapeutics foods is known to improve their protein quality and mineral content without the introduction of the antinutrients found in some plant proteins; however, evidence supporting the role of protein quality in the treatment of children with moderate acute malnutrition (MAM) is limited. A prospective, randomized, double-blinded, controlled clinical effectiveness trial of two isonitrogenous peanut/dairy ready-to-use supplementary foods (RUSFs) for the treatment of MAM in children aims to gain a better understanding of the role of protein quality in recovery. The objectives of this study were to optimize a RUSF for protein quality using the digestible indispensable amino acid score (DIAAS) with a modified amino acid scoring pattern for MAM and to conduct a clinical effectiveness trial that compares this protein quality optimized (HiPro) RUSF with an isonitrogenous control RUSF for the treatment of 6-59-month-old children with MAM enrolled in a 12-week-home-based supplementary feeding program. Eligible children recruited at rural therapeutic feeding clinics in southern Malawi receive approximately 75 kcal/kg/d (314 kJ/kg/d) of one of the two RUSFs in two-week rations for outpatient therapy of MAM. The primary outcome measures are recovery from MAM (achieving MUAC ≥ 12.5 cm or WHZ > -2 by 12 weeks) or failure (death, development of severe acute malnutrition, transfer to hospital for inpatient care, failure to recover from MAM by 12 weeks, default/lost to follow-up). Secondary outcome measures include rates of weight, height, and mid-upper-arm circumference (MUAC) gain, time to graduation, and any adverse effects from the supplementary foods.