Impact of reduced dose of ready-to-use therapeutic foods in children with uncomplicated severe acute malnutrition in Burkina Faso

Research snapshot[1]

A randomised non-inferiority trial was undertaken to investigate the efficacy of a reduced ready-to-use therapeutic food (RUTF) dose in community-based treatment of uncomplicated severe acute malnutrition (SAM) in Burkina Faso. Between October 2016 and July 2018, 801 children aged 6–59 months with uncomplicated SAM were enrolled from 10 community health centres and randomly assigned into one of two study arms: (a) a standard RUTF dose for two weeks, followed by a reduced dose thereafter (reduced); or (b) a standard RUTF dose throughout the treatment (standard). The mean weight gain velocity from admission to discharge was 3.4 g/kg/day and did not differ between study arms (Δ 0.0 g/kg/day; 95% CI −0.4 to 0.4; p = 0.92), confirming non-inferiority (p = 0.013). No differences were found in length of stay or recovery rate between arms, nor in mid-upper arm circumference (MUAC) gain velocity. However, after two weeks, the weight gain velocity was significantly lower in the reduced dose, with a mean of 2.3 g/kg/day compared with 2.7 g/kg/day in the standard dose (Δ −0.4 g/kg/day; 95% CI −0.8 to −0.02; p = 0.041). The reduced RUTF dose also led to a small but significant negative effect, 0.2 mm/week (95% CI 0.04 to 0.4; p = 0.015), on height gain velocity, with a mean height gain of 2.6 mm/week with reduced and 2.8 mm/week with standard RUTF dose. The impact was more pronounced in children under 12 months of age (interaction, p = 0.019). The authors recommend that a reduced-dose approach is tested in a routine programmatic setting and in different food-security contexts before scale-up.

[1] Kangas ST, Salpe´teur C, Nikièma V, Talley L, Ritz C, Friis H, et al. (2019) Impact of reduced dose of ready-to-use therapeutic foods in children with uncomplicated severe acute malnutrition: A randomised non-inferiority trial in Burkina Faso. PLoS Med 16(8): e1002887. https://doi.org/10.1371/journal.pmed.1002887

Individualised breastfeeding support for acutely ill, malnourished infants under six months of age

Research snapshot[1]

Re-establishing exclusive breastfeeding (EBF) is the cornerstone of the 2013 World Health Organization (WHO) treatment guidelines for the management of acute malnutrition in infants under six months old. However, the guidelines are inconsistently applied, with limited evidence of outcomes in infants both in inpatient and outpatient settings and on discharge. A recent study assessed the feasibility of using breastfeeding peer supporters (BFPS) to facilitate implementation of 2013 WHO guidelines among hospitalised malnourished infants under six months old and evaluated the outcomes (EBF, infant growth, morbidity and mortality up to six weeks post-discharge) in Kilifi County Hospital, Kenya.

Between September 2016 and January 2018, three BFPS provided individual breastfeeding support to mothers of infants aged four weeks to four months admitted with an illness and acute malnutrition (mid upper-arm circumference < 11.0 cm OR weight-for-age z score (WAZ) < −2 OR weight-for-length z score (WLZ) < -2). Infants (n=51) were followed daily while in hospital, then every two weeks for six weeks after discharge.

Most enrolled mothers had multiple breastfeeding challenges, mainly relating to technique; poor positioning and attachment were observed in 78% and 76% of the mothers, respectively. Six per cent had no option to breastfeed. Delayed start to breastfeeding and perceived milk insufficiency were reported in 34% of the mothers. Almost half (43%) of the ill, malnourished infants had a history of small size at birth (low birth weight, premature or small for gestational age) and one third (35%) had a congenital malformation affecting feeding. The rate of exclusive breastfeeding was 55% on admission and 81% at discharge. At discharge, 67% of infants had attained the WHO recommended weight velocity of >5 g/kg/day for three consecutive days on breastmilk alone. Re-establishing EBF required time beyond medical recovery; extending inpatient admission to achieve feeding targets risked cross-infection. Gains in WLZ and WAZ were generally not sustained beyond two weeks after discharge.

The authors conclude that BFPS operated effectively in an inpatient setting and increased rates of exclusive breastfeeding at discharge. However, lack of sustained anthropometric gain post-discharge suggests the need for continued active intervention. Future studies need to explore integration of such support under 'real-life' health-service conditions and strategies for structured breastfeeding support on discharge to improve growth and ensure survival among recovering infants.

[1] Mwangome M, Murunga S, Kahindi J, et al. Individualized breastfeeding support for acutely ill, malnourished infants under 6 months old. *Matern Child Nutr.* 2019; e12868. https://doi.org/10.1111/mcn.12868

Conflict of interest in nutrition research

Research snapshot[1]

All scientists have an academic conflict of interest (COI) in that the impact of their research, their ability to attract research funding, and perhaps keep their jobs, depend on their having research success. Most discussion about COI focuses on funding received from industry. The food industry has steadily increased its investment in externally targeted research; academics are drawn to such funds as they are less arduous to apply for, often offer a greater chance of being funded, and can lead to long-term funding collaborations. All industries work toward their own profit and the food industry is no exception. As a group of editors, the authors reflect on how to progress the outcomes of industry-funded research that may lead to healthy debate within the nutrition community. In their view, a paper with a COI should be published if it has been internally and externally peer reviewed and meets the journal's standards. When a paper is received with a clearly declared COI that has an interesting hypothesis and that addresses an area of current debate or hopes to confirm the clinical benefits of a nutritional product (and that passes ethics and writing quality standards), the authors will categorise it as one of the following: (1) financed by industry with a clear declaration that the industry was not involved in the study hypothesis/ design, execution, analysis or interpretation; (2) sponsored by industry with a clear declaration that industry was involved in the above, with industry involvement clearly outlined; (3) funded and conducted by industry with no external partners. Papers in categories (1) and (2) will need to demonstrate the transparence of industry funding, academic independence and public access to raw data. Once published, category (1) papers will appear as standard and categories (2) and (3) will appear under the subject category 'Industry Research'. This new subject category will signal papers with a strong but declared COI. The reader can then make a judgement on the veracity of the findings and the overall message of that paper.

[1] Soares, M.J., Müller, M.J., Boeing, H., Maffeis, C., Misrsa, A., Muscogiuri, G., Muthayya, S., Newsholmes, P., Wolever, T., and Zhu, S. (2019). Conflict of interest in nutrition research: an editorial perspective. *European Journal of Clinical Nutrition* (2019) 73:1213–1215 https://doi.org/10.1038/s41430-019-0488-8