Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Clinical Nutrition 39 (2020) 3528

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

Letter to the Editor

Response to reply - Comment on RUTF and correction of anaemia and iron deficiency in severe acute malnutrition

Dear Editor,

We appreciate the reply to our Comment on ready-to-use therapeutic food (RUTF) and correction of anaemia and iron deficiency (ID) in severe acute malnutrition (SAM) [1]. The debate raises important issues about effectiveness in correction of micronutrient deficiencies during treatment of SAM.

The authors acknowledge that cow's milk inhibits iron absorption in infants but speculate that the superior performance of the milk-free RUTF in treating ID and anemia was due to the increased levels of iron and vitamin C in that product and a longer length of stay (LOS). This assertion is not consistent with our results. In our three-armed trial, the milk-free and 9.3% milk RUTFs had similar levels of iron (35.1 mg/100 g Vs 31.6 mg/100 g), both very different from the 10.5 mg/100 g in the 25% milk RUTF [2]. However, the milk-free product raised haemoglobin in anemic children by 2.9 g/L compared to 2.3 g/L and 2.2 g/L in the 9.3% and 25% milk products respectively, and was significantly superior to the 9.3% product. The 9.3% product was not statistically different from the 25% product. The results on iron status for children with depleted body iron stores followed a similar pattern with greater differences in efficacy between the milk-free and 9.3% products than between the 9.3% and 25% products [2].

These results can neither be explained by the differences in iron and vitamin C contents nor by the 3.1 days (8%) additional LOS for the milk-free product. In the presence of phytic acid, the molar ratios of phytic acid-to-iron and ascorbic acid-to-iron are superior indicators of non-heme iron absorption than absolute iron content [3,4]. In our study, both these indicators were better in the 9.3% product compared to the 0% product. Although the TREATFOOD study found no effect on iron absorption from foods to treat MAM [5], many studies have clearly documented the inhibitory effect of cow's milk on iron absorption [6,7].

Presently, less than 1 in 5 children with SAM are receiving the care they need, with grim predictions due to Covid-19 necessitating urgent action [8]. RUTF is by far the largest cost driver in the treatment of SAM, representing about 50% of the cost of care. In Malawi in 2017 the ingredient cost of the milk-free RUTF was 29% lower than for the milk-based RUTF. Since then the price of skimmed milk powder has, increased by >60% and the plant-based ingredients would now be approximately 40% lower cost. Expanding the choice of RUTF to include milk-free products not only has the potential to improve the treatment of ID and anemia but also to radically improve the coverage of SAM treatment by reducing costs and bringing competition into a market that has been dominated by a single product for 25 years.

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DOI of original article: https://doi.org/10.1016/j.clnu.2020.07.012.

28 September 2020

https://doi.org/10.1016/j.clnu.2020.09.046