

individuals are advised(1). Can the use of bovine colostrum in those with suspected immunodeficiency cause such adverse effects?

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Reply

Bovine colostrum is being promoted for prevention of recurrent respiratory and gut infections. The nutrient profile of bovine colostrum includes higher amounts of immunoglobulins, growth factors, cytokines and nucleosides, than are found in milk(1). It is also rich in oligosaccharides, anti-microbials and immune regulating factors(1). The beneficial effects of supplementation of bovine colostrums in improving body composition, aspects of athletic performance, diarrhea in persons with immunodeficiency syndromes, and NSAID-induced gastrointestinal disturbances have been reviewed(1).

In a recent systematic review on the subject, no randomized controlled trials (RCT) were identified that had evaluated the role of bovine colostrum in respiratory illness in children(2). Only one study in which efficacy and tolerability of bovine colostrum was evaluated in preventing recurrent episodes of upper respiratory tract infections (URTI) and diarrhea in children was identified(3). The mean (SD) number of episodes of URITs occurring 6

months prior to bovine colostrum therapy was 5.94 (3.88) which reportedly decreased significantly to 1.60 (1.74), 0.99 (1.20) and 0.52 (0.91) at the end of 4 wks, 8 wks and 12 wks of bovine colostrum therapy respectively ($P<0.05$). On critical appraisal of this study(3), there appear to be significant limitations. It is an intervention study. There is lack of clarity on the number of episodes in different time periods of observation used for comparison. The baseline is number of episodes in over 6 months. This data should have been converted to monthly episodes and then compared to the number of episodes at 4 weeks, 8 weeks and 12 weeks. Otherwise the number of episodes over 6 months cannot be compared with those in 4 weeks. Also, it is not clear if only children with more than 6 episodes of URTI were included as the range of episodes reported in the paper range from 0- 20(3). There are a few studies where bovine colostrum has been used in treatment of diarrheal diseases, some of which are in children(4-6).

Reviewing the literature, the routine use of bovine colostrum in care of children with recurrent infections cannot be recommended at present. More so, there are no studies in children with proven IgA deficiency. There is evidence for absorption of colostrum immunoglobulins in newborn animals; this absorption significantly reduces after 24- 36 h of age(7). However, there are no studies in children to quantitate the absorption. The risk of hypersensitivity reactions with use of bovine colostrum in IgA deficient individuals is a theoretical possibility with no studies evaluating this aspect.

In the absence of convincing evidence of benefit for use of bovine colostrum and the lack of studies regarding the safety in IgA deficient individuals, caution is advised for use of bovine colostrum in these individuals.

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RUTF: Imported or Indigenous

I read with interest the research paper on comparison of RUTF with cereal legume based *Khichri* among malnourished children(1), and the accompanying editorial(2).

The energy intake in the age group 12 to 36 months ($n=23$) was 316 Kcal from RUTF as against 290 Kcal from '*Khichri*', the difference being only 26 Kcal. Appropriate behaviour change counselling and supplementation can easily make up this gap. In the age group 6 to 11 mo ($n=8$), the difference is 85 Kcal. Most probably, these infants had not been introduced to homemade/ complementary food yet and were on liquid supplementations mainly, which in fact had precipitated malnutrition as a result of energy gap and recurrent infections.

'Nutrimix' (Child In Need Institute) and other traditional home made energy dense food can fulfil most of the requisite criteria of 'RUTF' by adding 'mineral electrolyte solution' (WHO) and vitamins supplements. Also, indigenously prepared 'RUTF' should be preferred for home/community based management of severe acute malnutrition for the following reasons: (a) It is a traditional home made food, is energy dense and could be made more energy dense and palatable by adding more oil, sugar

and seasonal ripe fruits like banana, mango and others; (b) This can be fed to other children at home thereby preventing malnutrition occurring in them and at the same time bring in positive behavior change in feeding (exclusive breastfeeding and appropriate complementary feeding as per IYCF norms) and caring (practising hygiene, sanitation and immunization); (c) The process also encourages accountability, ownership, participation and sustainability by decreasing dependency in the external agency.

As rightly pointed out by Dr Umesh Kapil in the editorial(2), we need to evaluate the imported 'RUTF' by carefully planned multicentric efficacy, effectiveness and safety trials and must take precautions so that commercial exploitation of malnutrition is avoided.

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