Mineral status of infants requiring dietary management of cow’s milk allergy by using an amino acid-based formula

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Cow’s milk allergy (CMA) is the most common food allergy in infancy. Fundamental to the management of food allergy is complete elimination of the offending proteins. However, due to dietary elimination CMA patients are at risk for inadequate nutritional intake. Management approaches in infants and young children include the use of hypoallergenic formulas that need to be fully tolerated, support normal growth and also assure adequate nutritional status in these patients. Dietary management of CMA with an hypoallergenic amino acid-based formula (AAF) has been proven to be effective and safe. Data on mineral status after dietary management by AAF are however scarce. In a prospective, randomized, double-blind controlled study, full term infants with diagnosed CMA received an AAF (n=110) with or without synbiotics (neutral and acidic oligosaccharides, Bifidobacterium breve M-16V) for 16 weeks. Primary outcomes were growth and formula tolerance and have been reported previously [¹²]. Mineral status was assessed by analyses of blood samples obtained at baseline and 16 weeks, which included calcium, phosphorus, chloride, sodium, potassium, magnesium and total iron. Total protein, albumin, prealbumin, hemoglobin and ferritin were also determined. Formula intake was recorded through diaries at weeks 0, 4, 8 and 16 during the study. Average age of infants at inclusion was 4.5±2.4 months (mean±SD). Median study product intake ranged from 704 ml/day in the first week to 789 ml/day at week 16. At baseline, averages (mean, median) of blood levels of calcium, phosphorus, chloride, sodium, potassium, magnesium and iron were within reference ranges. After 16 weeks on AAF, the averages of all mineral blood levels were again within the specified reference ranges set for the corresponding infant ages. Also the averages of total protein, albumin, prealbumin, hemoglobin and ferritin were within reference ranges. For some minerals, a number of individual values at baseline were below references, i.e. calcium (n=1), phosphorus (n=1), chloride (n=1), and sodium (n=1), whereas at week 16 none of these minerals had individual values below reference ranges. This study shows that an AAF with or without synbiotics, which have been reported previously to be equally tolerated and to support normal growth [¹²], are effective in managing an adequate mineral status in CMA infants.

References:

¹ Harvey BM et al, Pediatr Res, 75; 343-51, 2014
² Burks AW et al, Pediatr Allergy Immunol, 26: 316-22, 2015