

Editorial

Use of hydrolyzed cow's milk formulae for prevention of early sensitization and signs of atopy must be further documented

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In this issue, the Committee on Hypoallergenic Formulae, within the European Society of Pediatric Allergy and Clinical Immunology, ESPACI, presents their paper on hypoallergenic formulae (HF) (1).

In Northern Europe and North America, the diet of infants and children is based to a large extent on cow's milk and dairy products. Atopic individuals are sensitized to antigens to which they are exposed. Thus, sensitization of atopic children often starts with sensitization to cow's milk. Since cow's milk is one of the main constituents of the normal diet of children, substitutes are needed. Goat's milk (2) contains antigens cross-reacting with antigens in cow's milk, and soy formulae are also allergenic (3). Therefore, extensively hydrolysed cow's milk formulae (eHF) with only small peptides and very low allergenicity have been widely used as a substitute for cow's milk formulae in children with cow's milk hypersensitivity. As reviewed in the position paper (1), there is convincing evidence that the majority of cow's milk allergic children tolerate eHF. The drawback with these products is their often offensive smell and taste.

Recently, less hydrolysed cow's milk formulae (pHF) have been marketed. The allergenicity of these formulae, in relation to cow's milk, is only

moderately reduced as reviewed in the position paper (1). The smell and taste of these products is, however, better than that of eHF. Since there have been severe allergic reactions in cow's milk-allergic children (CMA) to pHF, their use in CMA children has been discouraged.

eHF as a substitute for breast milk, have been shown to protect children from sensitization to cow's milk and early manifestations of atopy (4–8). The beneficial effect of replacing cow's milk formulae with eHF, however, appears to be limited to a reduced risk of dermal and gastrointestinal allergic symptoms in the first year of life.

Some manufacturers have claimed that pHF protect against both sensitization to cow's milk and development of other atopic diseases. Some investigators claim a protective effect of pHF mainly against skin symptoms (9–12), but patient selection and inclusion criteria, and definition of symptoms/diseases were not well defined in these trials. Papers have also appeared in non-peer reviewed journals. Furthermore, there are no data on the preventive effect of HF when applied to unselected populations.

Therefore, as concluded in the position paper (1), before pHF are marketed as hypoallergenic, prompted for use in the general population, further large trials should be performed using well-

defined samples of high-risk infants. As there are large economic interests involved, such trials should be supervised by an independent board of recognized pediatric allergists.

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References

1. BUSINCO L, DREBORG S, EINARSSON R, GIAMPIETRO PG, HØST A, KELLER KM, STROBEL S, WAHN U. Hypoallergenic formulae. Allergenicity and use for treatment and prevention. A position paper of ESPACI. *Pediatr Allergy Immunol* 1993; 4: 101–11.
2. RIBADEAU-DUMAS B. Structure and variability of milk proteins. In: Barth CA, Schlikke E, eds. *Milk Protein. Nutritional, clinical functional and technological aspects*. Darmstadt: Steinkopff Verlag, New York: Springer Verlag 1988: 112–23.
3. BUSINCO L, GIAMPIETRO PG, BRUNO G, CANTANI A. Allergenicity and nutritional adequacy of soy protein formulas. *J Pediatr* 1992; 121: 21–7.
4. ZEIGER RS, HELLER S, MELLON MH, HELSEY JF, HAMBURGER RN, SAMPSON HA. Genetic and environmental factors affecting the development of atopy through age 4 in children of atopic parents: a prospective randomized study of food allergen avoidance. *Pediatr Allergy Immunol* 1992; 3: 110–27.
5. HATTEVIG G, KJELLMAN B, SIGURS N, BJÖRKSTÉN B, KJELLMAN N-IM. The effect of maternal avoidance of eggs, cow's milk and fish during lactation upon allergic manifestations in infants. *Clin Exp Allergy* 1989; 19: 27–32.
6. HØST A, HALKEN S, HANSEN L, ØSTERBALLE O, GJESING B, LØWENSTEIN H. Comparison of breast, whey hydrolysate and casein hydrolysate feeding on incidence of cow's milk allergy in high risk infants. *J Allergy Clin Immunol* 1990; 85: 273.
7. ARSHAD SH, MATTHEWS S, GRANT C, HIDE DW. Effect of allergen avoidance on development of allergic disorders in infancy. *Lancet* 1992; 339: 1493–7.
8. HALKEN S, HØST A, HANSEN LG, ØSTERBALLE O. Effect of an allergy prevention programme on incidence of atopic symptoms in infancy. A prospective study of 159 high risk infants. *Allergy* 1992; 47: 545–53.
9. CHANDRA RK, SINGH G, SHRIDHARA B. Effect of feeding whey hydrolysate, soy, and conventional cow milk formulas on incidence of atopic disease in high risk infants. *Ann Allergy* 1989; 63: 102–6.
10. CHANDRA RK, HAMID A. Cumulative incidence of atopic disorders in high risk infants fed whey hydrolysate, soy and conventional cow milk formulas. *Ann Allergy* 1991; 67: 129–32.
11. VANDENPLAS Y, DENEYER M, SACRE L, LOEB H. Preliminary data on a field study with a new hypo-allergenic formula. *Eur J Pediatr* 1988; 63: 102–6.
12. VANDENPLAS Y, HAUSER B, VAN DEN BORRE C, SACRE L, DAB J. Effect of a whey hydrolysate prophylaxis of atopic disease. *Ann Allergy* 1992; 68: 419–24.