Due to its proximity to food antigens and the microbiome, GALT must continually be able to distinguish nonpathogenic from pathogenic organisms, as well as enable oral tolerance to specific food antigens.

The Role of Hydrolyzed Formula in Allergy Prevention

by Michael D. Cabana

Key insights

Although breastfeeding is accepted as the optimal way to feed all infants regardless of underlying allergy risk, a large proportion of infants are exposed to infant formula. Initial findings from clinical studies suggest that the use of hydrolyzed formulas may have beneficial effects in reducing the risk of certain allergic diseases, particularly against a background of atopic disease. However, the difficulties in extrapolating these clinical data to general practice arise because different formulas are derived using different hydrolysis methods. These can affect not only the degree of protein hydrolysis but also qualitative changes to the peptides, which in turn can influence the preventive effects of a particular infant formula on the risk of allergic disease.

Current knowledge

Pediatric asthma, eczema, food allergy, and allergic rhinitis incur significant costs to the healthcare system, resulting in missed days of work and school, and affect the quality of life of parents and children. Infant formulas have been developed to mimic human breast milk. Typical infant formulas for full-term infants contain 19–20 calories per ounce and approximately 1.3–1.4 g of protein per 100 mL. Although a variety of protein sources for infant formula exist, the typical protein source is cow’s milk proteins. Using various hydrolysis techniques, the intact proteins can be broken down into smaller components or peptides.

Practical implications

The exposure of smaller peptides to gut-associated lymphoid tissue (GALT) is thought to induce oral tolerance without sensitization, as the decreased molecular weight has been associated with decreased allergenicity of the protein. Because of this, hydrolyzed formulas may lower the risk of allergic disease compared to nonhydrolyzed formulas. Some studies suggest that certain partially hydrolyzed whey formulas and extensively hydrolyzed casein formulas may decrease the risk of eczema compared to nonhydrolyzed formulas for children with a background of atopy. In terms of allergic rhinitis, food allergy, and asthma, the evidence for a preventive effect of hydrolyzed infant formula remains inconclusive.

Recommended reading