

Nutrition of allergic babies and children

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Abstract. – Atopic diseases of babies and children are frequent, disabling, chronic and even life-threatening. The currently available cow's milk (CM) substitutes for infants with CM allergy (CMA) are soy protein (SP) formulas (SPFs), hydrolyzed formulas (HF), and home-made meat-based formulas. However, in the past few years the antigenicity/allergenicity of SPFs has been over-emphasized in the medical literature. We have demonstrated that SPF allergy incidence in oral food challenge (OFC)/double-blind food challenge (DBFC)-based epidemiological studies attains 3-4%. CM-based protein hydrolysates have provoked 200 severe and less severe reactions.

Key Words:

Soy protein formulas, Cow's milk allergy, Gastrointestinal reactions, Hydrolysate formulas.

Comment

In their recent work¹ the American Academy of Pediatrics (AAP) has substantially responded positively to the request of revising their 1983 Position Paper, since SPFs have provoked a clinical case of anaphylaxis every 22,3 years².

It is true that severe gastrointestinal reactions to SPFs encompass the full gamut of disease seen with CMA in infancy¹. We have reviewed eight pertinent studies² and found a mean of 20% of reactions, also considering two studies limited to 9 or 10 children (ref in 2). However, the only study that employed a DBPCFC (double-blind, placebo-controlled food challenge) found a 0% prevalence³. This also means that 80-100% of infants and children with gastrointestinal disorders can ingest SPFs with impunity.

Seven studies in 2663 children have employed DBPCFCs or OFCs in young infants for the diagnosis of soy allergy, with a mean reaction rate to soy of about 4% (ref in 2), while Bock found in 313 children an incidence of 5.6% for SPFs and of 22% for CM⁴.

Twelve studies have evaluated SPFs in the prevention of allergic diseases². We have noted that in one study diagnosis consisted also of parental telephone reporting⁵, and that another study⁶ evaluated the effect of feeding whey hydrolysate formulas (WHF), SPF, and conventional CM formulas in high-risk infants. Atopic disease developed in an equal number of babies fed SPF or CM (36%). However the skin prick tests (SPT) were positive for CM proteins in 4/5 (80%) of WHF-fed, and in 2/25 (8%) of SPF-fed babies (Fisher 0.0026). In several of these studies the prevalence of CM allergy (CMA) attained high levels such as 60%⁵ and 70%⁶. In the preventative studies with high statistical differences, reactions to SPFs occurred in high-risk children in 9%, and to CM in 22.5% of cases (mean)², therefore the frequency of atopic disease is reduced 2.5 times in SPF-fed children. The same difference (2.2) is found in the only study in which diagnoses were made through OFC⁷.

Conclusion

SPFs can be administered not only to infants with IgE-mediated CMA¹, but are also effective in the prevention of atopy². However the suggestion of giving infants with CM hydrolyzed formulas¹ conflicts with 200 reactions documented in children⁸.

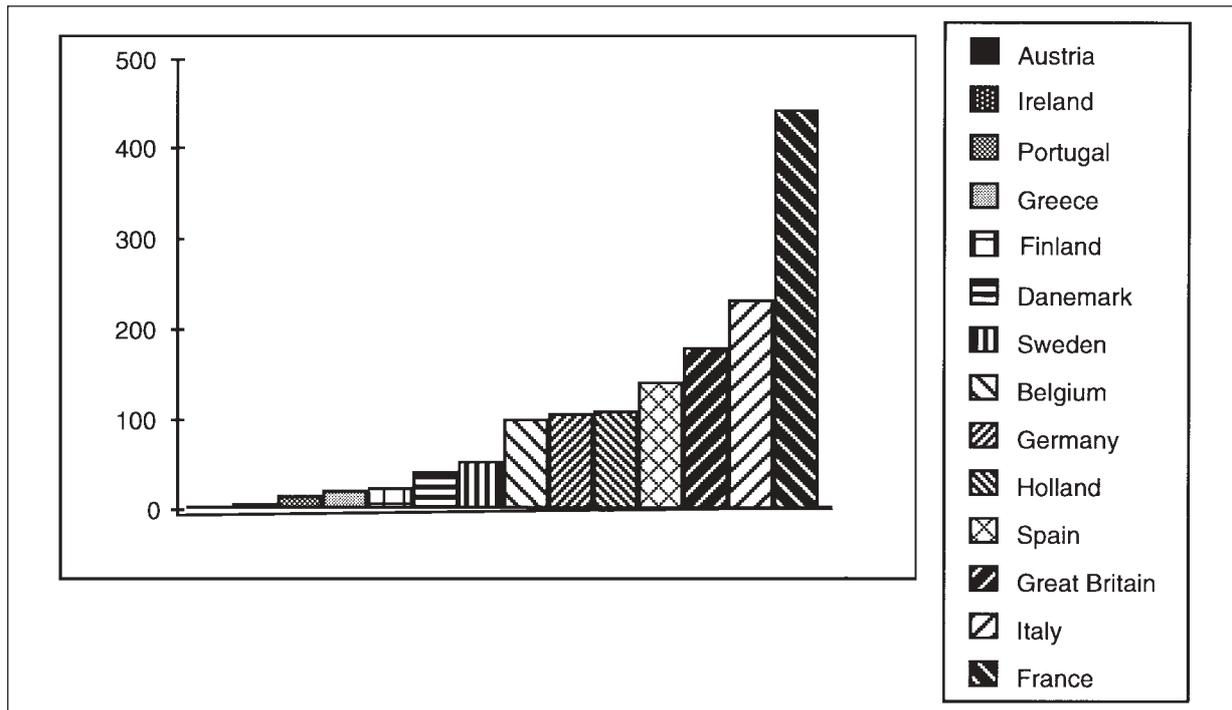


Figure 1. Number of fields where transgenic cultivations are experimented. Note the high number of fields in Italy. Data from WHO.

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