NUTRITIONAL MANAGEMENT OF COW'S MILK PROTEIN ALLERGY IN CHILDREN.

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Abstract

Nutritional management of the child allergic to cow's milk proteins is more than essential. The dietary survey allows for the assessment of the whole diet and the nutritional monitoring is done with the collaboration of the dietician to explain the diet and give advice for food diversification. The diet of the child allergic to cow's milk proteins after milk consists of progressive food diversification. Milk substitutes offer a solution to this condition and there is no reason to delay the most allergenic foods. The composition of these substitutes varies in nitrogen, medium chain triglycerides, long chain polyunsaturated fatty acids (LC-PUFA), Ca, iron.... Iron and zinc requirements are important in the second half of life and supplementation with iron, calcium, vitamin D, C and E is necessary to prevent rickets and malnutrition. Monitoring of weight and stature growth is very important because uncontrolled diets can influence the child's growth.

Keyword: allergy, nutrition, dietetics, cow's milk protein, child

1.INTRODUCTION

The main objective of nutritional management of the child with cow's milk protein allergy (CMA) is to ensure normal feeding (1).

2.DIETARY SURVEY

A preliminary dietary survey will allow for an assessment of the overall diet, correction of errors and verification of quantitative nutritional intakes. The child's nutritional surveillance should be carried out regularly with a dietary consultation every three months (2). The collaboration of the dietician is highly desirable in order to carefully explain the diet and give advice on food diversification, including learning how to read labels (3).

3.PRINCIPLES OF FEEDING A CHILD WITH COW'S MILK PROTEIN ALLERGY

Currently, it is recommended to start diversifying allergic children between 4 and 6 months of age like all other children. This diversification should be done gradually by introducing foods one by one, without restriction, every 2 to 3 days (4). Iron and zinc needs are important during the second half of life (meat, egg and fatty fish), so introducing them quickly is wise. Beef and veal are usually tolerated except for children sensitized to bovine serum albumin (5). On the other hand, there is no reason to delay the most allergenic foods (egg, fish, peanut, wheat, etc.) (4). Regular evaluation of the consumption of the therapeutic formula and the nutritional impact of CMPA is essential to ensure that the child's intake is adequate (6).

4.NUTRITIONAL INTAKE AND PREVENTION OF DEFICIENCIES:

Milk substitutes whether in the form of high casein hydrolysate, soy hydrolysate or amino acid blend tend to have the same nutritional composition as first age milks. The daily quantities and the number of bottles should be adapted according to age and weight to meet the needs of harmonious growth and development (7).
The nutritional efficacy of a formula depends both on its efficacy against allergy and on its composition (variability of nitrogen content, medium-chain triglycerides, long-chain polyunsaturated fatty acids (LC-PUFA), Ca, iron, etc.). Medication supplementation may be necessary (iron, calcium, vitamin D) (3). For vitamin D, the intake of the CMPA child should be the same as that of a normal child, following the

recommendations of a daily intake of 300 to 500 IU throughout the first year of life without exceeding a maximum level of 1000 IU (European Food Safety Authority) (8).

The nutritional risk also seems to be increased by the association with asthma. Children with CMPA for more than 4 years, associated with asthma treated with corticosteroids, had a calcium intake corresponding to a quarter of the recommended dietary allowance (9).

Avoidance of cow's milk and its derivatives in infants is life-threatening, as shown by the cases of rickets and kwashiorkor in infants fed rice or soy beverages not fortified with calcium and vitamin D (10).

Vitamin intake will be mainly through the milk substitute but also through the introduction of fruits and vegetables for vitamin C. In Christie's work, more than 25% of children consumed less than 2/3 of the recommended intake of calcium, vitamins D and E. The calcium deficiency was most pronounced in children with CMPA or poly-allergies (11). Hernell's study of healthy infants fed casein hydrolysates compared to standard formula showed poorer iron status, excessive amino acid intakes, resulting in elevated urea nitrogen, and elevated plasma amino acids, justifying a reduction and better balance of amino acids in some formulas (12). Iron deficiency, the most frequent nutritional deficiency in CMPA, has been curiously little studied. Iron deficiency anemia alone can be indicative of CMPA (13). In an Italian study, one quarter of iron-deficient subjects had CMPA (14). According to Agostoni, rice hydrolysate induced lower plasma values of phosphorus, urea nitrogen, amino acids (except for threonine, which was higher) and the ratio of essential + semi-essential/non-essential amino acids (15). The nutritional risk is higher in food allergies associated with CMPA, the elimination diet can be easily deficient. Exclusion of foods such as egg and fish may induce long-chain polyunsaturated fatty acid (LC-PUFA) deficiency (16).

5.GROWTH MONITORING OF THE CHILD:

APLV is responsible for weight and statural growth retardation, which can only be corrected with appropriate management (17). Some forms of CMPA in infants result in hypotrophy. The long-term consequences of these nutritional deficiencies are poorly understood (3).undernutrition may be the consequence of an uncontrolled, inadequate or excessive elimination diet (18). In Finland, Seppo found that in children with proven CMPA fed a soluble protein hydrolysate supplemented with calcium and vitamin D, height at 2 years was close to national standards, weight/height measurements were close to the 50th percentile at 4 years, and intakes were close to recommended intakes (19). Rzehak found that feeding casein hydrolysate induced a transient reduction in weight growth during the first year of life, with no long-term effect on body mass index (BMI) (20). Lasekan found that the z-score was lower in children with CMPA fed a rice hydrolysate than in those fed a free diet after the age of diversification (21).

6. CONCLUSION:

Finally, nutritional management is a critical step in the treatment of CMPA. It is necessary to avoid the many deficiencies that a child with cow's milk allergy may experience

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