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Energy and Nutrient Intakes in Cystic Fibrosis: Do They Achieve Guidelines ?

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Abstract : Background: Dietary recommendations in cystic fibrosis (CF) are based on the need to compensate for the increased energy needs of infection, the increased energy cost of breathing and the losses, incurred from malabsorption. Studies in CF indicate that dietary recommendations for CF patients can be difficult to achieve Aim: The aim of this study was to evaluate the energy and nutrient intakes and to compare in accordance with CF dietary guidelines in CF. Methods: One-hundred sixty patients with CF, aged between 2 to 20 years (mean±SD= 7.4±4.8 years) attending Hacettepe University, Faculty of Medicine, Department of Pediatric Pulmonary Diseases were included. Energy and nutrient intakes from foods and enteral products were calculated using a-24-hour dietary recall method with BEBIS 7.2 programme. Percentages of energy and nutrient intakes were compared in accordance with CF dietary guidelines. Patients or/and parents completed a questionnaire showing mealtime problems, usage of alternative therapies and type of nutrition. Statistical analyses were done using SPSS 16.0 programme. Results: It was obtained that 14.5% and 46.9% of the total energy intake were from proteins and carbohydrates, respectively. The actual contribution of total, saturated, monounsaturated and polyunsaturated fats to the total caloric intake was 37.5%, 14.3%, 14.9%, 9.9%, respectively. It was found that 87.7% of energy, 85% of protein 91.7% of carbohydrate, 81.1% of fat intakes were met, when compared CF recommended intakes of 120% RDA. Additionally 67%, 69.5%, 68.2% and 68.9% of the subjects did not achieve CF recommended intakes of 120% RDA for energy, protein, carbohydrate and fat, respectively. Patients with CF had low intakes for age for almost all vitamins and minerals, although supplementation was given. Especially most patients did not achieve the minimum recommended vitamin K intake of 120% RDA. The percentage meeting 120% RDA was 75.9% for vitamin K. It was shown that 41% of the patients had mealtime problems and they skipped the breakfast. Moreover 25.4% of the patients used alternative products outside the standard treatment (such as omega-3, ginger, turmeric, local honey). It was also showed that 60.8% of patients were using enteral products in addition to normal foods, the remaining patients were on only normal foods. Conclusion: The aims of improving nutritional status in children are to achieve normal weight gain and growth; optimize vitamin and mineral status; and slow the rate of clinical decline. In this study although enteral products were used in patients with CF, it was found that energy and nutrient requirements were unable to meet. Because dietary assessment is essential to identify the need for earlier nutritional intervention, in each visit patients need to be referred to CF specialist dietitian.

Keywords : cystic fibrosis, energy and nutrient intakes, mealtime problems, malabsorbtion
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