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Wpływ suplementacji diety żywnością specjalnego przeznaczenia medycznego na zmianę składu ciała i parametrów stanu zapalnego u pacjentów z ostrym zapaleniem trzustki

Effect of dietary supplementation with Food for Special Medical Purposes on changes in body composition and inflammation parameters in patients with acute pancreatitis

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Abstract

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Introduction: In recent years, the incidence of acute pancreatitis (AP) has been increasing. The global incidence of AP increases by 3.07% per year. The most common etiologies of AP are alcohol and gallstones. In AP, the risk of malnutrition increases due to limited oral food intake, abdominal pain, vomiting, the use of fasting to reduce the secretion of pancreatic enzymes according to the concept of "pancreatic rest" or hypermetabolism caused by inflammation. Appropriate nutritional support (enteral and parenteral nutrition) is effective in preventing and treating malnutrition in AP and also in preventing systemic inflammation, limiting complications, and modifying the course of the disease. According to the recommendations of the European Society for Clinical Nutrition and Metabolism (ESPEN), oral diet should be initiated within 24-72 hours in patients with AP and according to the American Gastroenterological Association (AGA) oral nutrition should be initiated within 24 hours of hospital admission. Anthropometry, bioimpedance analysis (BIA), air displacement plethysmography, dual-energy X-ray absorptiometry (DXA), computed tomography (TK) and magnetic resonance imaging (MR) are used to assess nutritional status and body composition. BIA is a reliable, non-invasive, objective and one of the cheapest methods of assessing body composition, characterized by high repeatability and minimal training requirements.

Aim of the study: The purpose of the study was to analyze the effect of dietary supplementation with food for special medical purposes (FSMP) on changes in body composition and inflammatory parameters in patients with AP.

Materials and methods: The study group included patients with AP who were on a strict diet for at least one day. Selected parameters in laboratory tests (C-reactive protein (CRP), white blood cells (WBC), alanine aminotransferase (AlAT), aspartate aminotransferase (AspAT), procalcitonin) and body composition analysis results using the BIA method (body mass, fat mass, muscle mass, protein mass, total body water (TBW)) were analyzed in the whole group. Patients (133 participants) were divided into two groups: 1) the study group (63 patients), who supplemented the FSMP (Nutridrinks or Protifar) and 2) the control group (70 patients), who did not supplement the FSMP.

Results: The study found that patients supplementing FSMP had a lower decrease in fat mass and body mass index (BMI) during observation. It was shown that body weight, BMI, muscle mass, protein mass and TBW at the end of the observation in the control group were statistically significantly lower compared to the study group, the group supplementing Nutridrinks and the group supplementing Protifar (respectively $p < 0.001$; $p < 0.001$; $p < 0.001$; $p = 0.001$ and $p = 0.001$). Moreover, the fat mass decreased significantly in all analyzed groups at the end of the observation (respectively $p = 0.01$; $p = 0.04$; $p = 0.001$; $p = 0.001$). The highest decrease in fat mass was noted in the control group. There was no effect of FSMP on the results of the assessed laboratory tests or on the length of hospitalization.

Conclusions: FSMP supplementation reduces the risk of malnutrition and muscle loss in patients hospitalized with AP. More research is needed in large groups of patients to accurately assess whether nutritional support in the form of FSMP has a beneficial effect on the nutritional status, inflammatory parameters and liver damage indicators in patients with AP.