Abstract

Background: Parenteral nutrition (PN) is a costly therapy that can also be associated with serious complications. Therefore, efforts are focusing on reducing rate of complications, and costs related to PN. Objective: The aim was to analyze the effect of the implementation of PN standardization on costs and quality criteria. Secondary aim was to assess the use of individualized PN based on patient’s clinical condition. Methods: We compare the use of PN before and after the implementation of PN standardization. Demographic, clinical and PN characteristics were collected. Costs analysis was performed to study the costs associated to the two different periods. Quality criteria included were: 1) PN administration; 2) nutrition assessment (energy intake between 20-35 kcal/kg/day; protein contribution according to nitrogen balance); 3) safety and complications (hyperglycemia, hypertriglyceridemia, hepatic complications, catheter-related infection); 4) global efficacy (as serum albumin increase). Chi-square test was used to compare percentages; logistic regression analysis was performed to evaluate the use of customized PN. Results: 296 patients were included with a total of 3,167 PN compounded. During the first period standardized PN use was 47.5% vs 85.7% within the second period (p < 0.05). No differences were found in the quality criteria tested. Use of individualized PN was related to critical care patients, hypertriglyceridemia, renal damage, and long-term PN. Mean costs of the PN decreased a 19.5%. Annual costs savings would be € 86,700. Conclusions: The use of customized or standard PN has shown to be efficient and flexible to specific demands; however customized PN was significantly more expensive.

Keywords

Parenteral nutrition, Parenteral nutrition quality, Parenteral methods, Parenteral nutrition economics.