Abstract

Introduction: Few studies have evaluated the route of nutritional therapy in patients with head trauma. Objective: We aimed at investigating whether early enteral (EN) or parenteral nutrition (TPN) may differ in protein/calorie supply, serum glucose modifications, and acute phase response in patients with traumatic brain injury (TBI). Methods: Twenty two patients with moderate TBI (Glasgow score between 9-12) were randomized to receive isocaloric and isonitrogenous either EN (n = 12) or TPN (n = 10). The daily amount of calories and nitrogen (N) supplied, the nitrogen balance, and the daily serum level of glucose, C-reactive protein, and albumin were collected for 5 consecutive days. Clinical endpoints as length of stay and mortality were also compared. Results: Mortality was 9.1% (two cases) with one case in each group. A progressive caloric deficit occurred in both groups (p = 0.001) without difference between them. The mean serum glucose level in TNP patients (134.4, 95% CI = 122.6 to 146.2 mg/dl) was significantly higher than in the EN group (102.4; 95% CI 91.6 to 113.2 mg/dL) (p < 0.001). There was a trend (p = 0.06) of 24 h urinary N loss to be greater in TPN group which received higher amounts of N than the NE group (p < 0.05). However, nitrogen balance was similar in the two groups. There was no difference in either the clinical outcome variables or the acute phase response. Conclusion: Both routes were able to supply increasing provision of calories to brain injured patients. TPN provided significantly greater amount of nitrogen but losses were also greater. Nitrogen balance was similar with both types of therapy. Parenteral compared to enteral nutrition lead to greater hyperglycemia. There was no influence of the route in both the early inflammatory response and clinical outcome.

Keywords

Enteral nutrition, Parenteral nutrition, Brain injury, Trauma, Nutritional therapy.