Abstract

Background: Parenteral nutrition-associated liver dysfunction can be progressive and irreversible, particularly in children and patients with long-term treatment. This study has assessed the incidence of abnormal liver function tests in hospitalized adults during short term parenteral nutrition (PN) and has investigated risk factors for developing alterations of each parameter. Methods: A prospective cohort study of parenteral nutrition treated patients with preserved liver function at baseline. Variables examined included nutritional and clinical data and laboratory parameters. Determinations were performed before starting PN and weekly until liver function test alteration was observed. Risk factors were investigated by four stepwise forward logistical regressions. Results: Eighty patients were included, 57.5% had liver function test alterations. PN mean duration was 15.9 (8-54) days. Mean days with PN and additional enteral/ oral nutrition were 1.5 (0-20). The following associations were found: gamma-glutamyl-transferase increased with soybean lipid intake and absolute diet; alkaline phosphatase increased with septic shock; alanine transaminase increased with septic shock, hyperglycemia and elevated creatinine; total bilirubin increased with septic shock, absolute diet, low prealbumin and glucose, and high creatinine. Conclusions: The incidence of altered liver function tests is high in adult hospitalized patients treated with short-term PN. However, the effect of nutritional factors in this alteration is low. Oral/enteral nutrition and reduction of soybean lipid supply can reduce increases in some liver function tests such as gamma-glutamyl-transferase and total bilirubin. The high association between all liver function tests and clinical systemic-hypermetabolic variables suggest the importance of specific nutritional strategies for this condition.

Keywords
Liver dysfunction, Gamma-glutamyl-transferase, Bilirubin, Alanine transaminase, Alkaline phosphatase, Soybean lipid.