Abstract

Background & Aims: Short Bowel syndrome is a serious intestinal insufficiency. The most common etiology in adults nowadays is intestinal ischemia and inflammatory disease, while in children the most common are congenital anomalies, volvolus and necrotizing enterocolitis, which makes the TPN obligatory. However the intestine is intimately related to the liver through the entero-hepatic circulation and different endocrinological entero-hepatic systems. Massive intestinal resections and TPN would alter this relationship, and could change the hepatic tissue composition and its histomorphology. The aim of this work is to know these changes in more detail. Materials and methods: We used 3 experimental groups: Group A (10 guinea pigs), which was given anesthetic and a simple laparotomy and fed for 10 days with NPT. Group B (10 guinea pigs), underwent total thin intestine resection and were fed for 10 days with NTP. The control group (6 guinea pigs) underwent anesthetic and a simple sham laparotomy and were fed orally. After this period blood and hepatic tissue samples were taken in order to study the liver fat (total fat, proportion of neutral and polar lipids, proportion of phospholipids and fatty acids). Liver biopsies were taken and studied under an optical microscope. Results: The animals from group A and B, underwent NPT, showed a significant increase in glycemie and serum triglycerides, decreasing the cholesterol in GB. There was a significant decrease in weight and in the proportion of fat per g of the liver tissue, at a maximum level in GB, and an even higher decrease in the LP/LN ratio in GA and GB. There was also a change in the proportion of phospholipids, decreasing the Phosphatidilinositol and increasing the Phosphatidiletanolamine. There was also a decrease in the AG w6/w3 ratio. Histologically appear a steatohepatitis, with a striking decrease in the mitochondrial density, being more intensive in GB. Conclusions: NPT alters the composition of the hepatic fat and the hystomorphology of the liver. The short bowel syndrome have more lesional mechanisms, favouring the hepatic damage caused by NPT.

Keywords

Short bowel syndrome, Hepato-intestinal relationships, Liver composition, Hepatosteatosis.