

Increase in long-chain polyunsaturated fatty acid n-6/n-3 ratio in relation to hepatic steatosis in patients with non-alcoholic fatty liver disease

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Hepatic steatosis is a major feature associated with NAFLD (non-alcoholic fatty liver disease). The aims of the present study were to assess the levels of PUFA (polyunsaturated fatty acids) in liver total lipids, triacylglycerols (triglycerides) and phospholipids of NAFLD patients in relation to those in adipose tissue and hepatic indexes related to oxidative stress as factors contributing to hepatic steatosis. Eleven control subjects and 19 patients with NAFLD were studied. Analysis of liver and abdominal adipose tissue fatty acids was carried out by GLC. The liver content of protein carbonyl groups and malondialdehyde were taken as indexes related to oxidative stress. NAFLD patients had a depletion in LCPUFA (long-chain PUFA) of the n-6 and n-3 series in liver triacylglycerols, with decreased 20:4,n-6/18:2,n-6 and (20:5,n-3 + 22:6,n-3)/18:3,n-3 ratios, whereas liver phospholipids contained higher n-6 and lower n-3 LCPUFA. These findings were accompanied by an enhancement of (i) n-6/n