

Relationship between in vivo chlorzoxazone hydroxylation, hepatic cytochrome P450 2E1 content and liver injury in obese non-alcoholic fatty liver disease patients

Orellana, Myriam

Rodrigo, Ramón

Varela, Nelson

Araya, Julia

Poniachik, Jaime

Csendes, Attila

Smok, Gladys

Videla, Luis A.

The aim of the present study was to test the hypothesis that induction of cytochrome P450 2E1 (CYP2E1) in the liver of patients with non-alcoholic fatty liver disease (NAFLD) is correlated both with the in vivo activity of the cytochrome and with the development of liver injury. For this purpose, the liver content of CYP2E1 was determined by Western blot and the CYP2E1 activity by the in vivo hydroxylation of chlorzoxazone (CLZ). The study groups were obese women with an average body mass index (BMI) of 40.3 kg/m², who underwent therapeutic gastroplasty or gastrectomy with a gastro-jejunal anastomosis. Further, the hepatic histology was determined to establish the pathological score grouping the subjects into three categories: control, steatosis and steatohepatitis. The liver CYP2E1 content and the CLZ hydroxylation of obese patients with steatosis and, particularly, with steatohepatitis were significantly higher than controls and correlated positively with both the severity of the liv