Iron overload: An important co-factor in the development of liver disease in alcoholics

17 February 2009

Alcohol and iron are believed to have a synergistic effect in the development of liver injury. Furthermore, alcohol enhances iron absorption. Primary hemochromatosis is a genetic disorder, mostly resulting from mutations in the HFE gene, with a disturbance in the iron metabolism which leads to iron accumulation that may eventually result in liver disease. However, data regarding an association between iron metabolism, HFE mutations and alcoholic liver disease are inconclusive at present.

A research article to be published on January 7, 2009 in the *World Journal of Gastroenterology* addresses this question. A research team led by Professor Helena Cortez-Pinto, from Hospital Santa Maria in Lisbon, studied a group of heavy drinkers with and without liver disease.

A high prevalence of iron overload was found in alcoholics, which appeared to be related to the development of liver disease [odds ration for having liver disease in alcoholics with transferrin saturation greater than 45% was 2.2 (95% CI 1.37-3.54)]. Regarding HFE mutations, only H63D was found to be associated with alcoholic liver disease [odds ratio 1.57 (95% CI 1.02-2.40)]. Alcoholics who were heterozygotes for H63D mutation and had evidence of iron overload, showed an even greater risk of developing liver disease [odds ratio 2.17 (95% CI 1.42-3.32)].

Based on these findings, it appears that iron overload is an important co-factor in the development of liver disease in alcoholics. Even heterozygotes for H63D mutation, who classically do not develop liver disease, had an increased susceptibility to liver disease, in the presence of excessive alcohol consumption.

Reference: Machado MV, Ravasco P, Martins A, Almeida MR, Camilo ME, Cortez-Pinto H. Iron homeostasis and H63D mutations in alcoholics with and without liver disease. World J Gastroenterol 2009; 15(1): 106-111
www.wjgnet.com/1007-9327/15/106.asp

Source: World Journal of Gastroenterology