

Section: Alcoholic Liver Disease

Abstract no: C 1

Carbohydrate-Deficient Transferrin as a useful biomarker for differentiating nonalcoholic steatohepatitis from alcoholic hepatitis.

Tsutsumi M, George J, Hayashi N, Tsuchishima M

Department of Hepatology, Kanazawa Medical University, Uchinada, Ishikawa, Japan.

Background: Specific clinical and biochemical parameters are not available to distinguish nonalcoholic steatohepatitis (NASH) from alcoholic hepatitis. The present study was aimed to establish a serum and liver biopsy marker for differential diagnosis of NASH from alcoholic hepatitis.

Methods: Sera were obtained from 13 patients with NASH and 26 patients with alcoholic hepatitis. All patients with alcoholic hepatitis consumed more than 80 g of ethanol/day for over 10 years. Liver biopsy was performed in all patients for histopathological evaluation of the liver. Aspartate aminotransferase (AST), alanine aminotransferase (ALT), γ -glutamyl transpeptidase (γ -GT), hyaluronic acid (HA), mean corpuscular volume of red blood cells (MCV) and carbohydrate-deficient transferrin (CDT) were determined as serum or blood biomarker. Immunohistochemical staining was performed for transferrin and CDT in all liver specimens obtained by needle biopsy.

Results: Serum AST, AST/ALT ratio, γ -GT, CDT and MCV in patients with alcoholic hepatitis were significantly higher compared to patients with NASH. However, serum values of all these markers, except CDT, were overlapped in many patients in both diseases. When the cut-off value of 2.66% was applied, serum CDT values in all patients with NASH were significantly lower compared to patients with alcoholic hepatitis. In all patients, staining for transferrin was positive in both NASH and alcoholic hepatitis. On the other hand, staining for CDT was positive only alcoholic hepatitis patients but not in NASH.

Conclusion: The results of the present study indicated that serum CDT values as well as immunohistochemical staining of CDT in the liver biopsy specimens could be used as a suitable biomarker for differentiating NASH from alcoholic hepatitis.