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Soluble ICAM-1 in patients with chronic hepatitis C infection: a prognostic marker of disease activity

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Soluble intercellular adhesion molecule-I (sICAM-1) is an important early marker of response to inflammatory mediators and immune activation released from a variety of cells including hepatocytes. At present, the most reliable determination of severity and prognosis in chronic viral hepatitis is the histological staging of the disease which is an invasive procedure and is often not well accepted by patients. The search for alternative non-invasive methods is mandatory especially in follow ups after initial assessment by biopsy. Serum sICAM-1 level was measured in 19 patients with chronic HCV, 19 patients with non-B, non-C chronic liver diseases (NBNC-CLD) and in 19 healthy control subjects using ELISA. Serum sICAM-1 levels were significantly higher in patients with chronic HCV and in NBNC-CLD patients compared to normal subjects (mean +/- SD, [1003 +/- 453 vs. 232 +/- 177, p<0.001], and [881 +/- 328 vs. 232 +/- 177, p<0.001]), respectively. Furthermore, serum levels of sICAM-1 were significantly higher in HCV-RNA positive patients than in HCV-RNA negative patients (p<0.001). Positive correlations were detected between serum levels of sICAM-1 and serum alanine aminotranseferase (ALT) (p<0.001), aspartate aminotranseferase (AST) (p<0.001), prothrompin time (p<0.001), and alkaline phosphatase (p<0.001), while, a negative correlation with albumin was found (p<0.001). Also, there was a significant correlation between clinical, ultrasonic findings and the level of sICAM-1 in chronic HCV patients as regards hepatomegaly, splenomegaly and normal liver echogenecity. High knodell score was significantly associated with high sICAM-1 level (p<0.001) in both patient groups. while no association between sICAM-1 and fibrosis was found. In conclusion, the measurement of sICAM-1 serum levels in chronic hepatitis C and NBNC-CLD patients is a useful non-invasive marker for monitoring liver disease activity that could replace follow up liver biopsies that are mostly not welcomed by the patients.