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Th17 and IL-17 as Predictors of Hepatic Inflammation in Patients with Chronic Hepatitis C Virus Infection and Treated With Direct Antiviral Therapy

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Limited data exists on the role of Th17 cells in chronic HCV infected patients, particularly with regard to hepatic inflammation and fibrosis. We aimed to investigate the relationship between circulating and intrahepatic frequency of Th17 cells and IL-17 serum level and degrees of hepatic inflammation and fibrosis in chronic HCV patients, as well as to evaluate the effect of successful anti-viral therapy on these parameters. This nested longitudinal case control study included 30 treatment-naïve chronic HCV patients and 20 healthy individuals as control. All patients were investigated for circulating Th17 cell percentage (flow cytometry) and intrahepatic Th17 cell percentage (immunohistochemistry) and serum IL-17 (ELISA) at baseline and at week 12 after discontinuation of therapy. Circulating and intrahepatic Th17 cell percentage and serum IL17 level were found to be significantly higher in chronic HCV patients when compared with controls, with significant correlation with Metavir activity score. No patients required discontinuation of therapy due to any adverse event allowing for sustained virological response at 12 weeks (SVR12) in 24 patients while the remaining six patients were considered "non-responders". Circulating Th17 cells and serum IL17 levels were significantly decreased after successful Sofosbuvir-Ribavirin therapy (*P*<0.0001). The extent of liver inflammation is positively correlated with frequencies of circulating Th17 cells, and their HCV-specific IL17 secretion, and intrahepatic Th17 cells. This data may also provide the basis for the potential use of Th17 as a new marker for disease advancement of chronic hepatitis C.