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Interleukin-2 and Interleukin-6 as Markers of Non-Response in Patients with Chronic Hepatitis C treated with Peg-Interferon α -2b and Ribavirin

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The treatment of hepatitis C, a viral infection resulting in chronic liver disease, has developed rapidly in its effectiveness and tolerability over the last decades. Mounting evidence describes an important role of T-cell mediated immunoregulation coordinated by cytokines and chemokines in the native immune reaction as well as the medical treatment response to chronic hepatitis C. We evaluated established clinical markers as well as patterns of chemokines and cytokines before treatment initiation (Week 0) and at Week 2, 4, 12 and 24 as well as at month 1 and 6 following the end of treatment in 32 patients with chronic hepatitis C with genotypes 1, 2 and 3.

It could be shown from samples of peripheral blood mononuclear cells using Real Time-PCR that the T-cell type 1 (Th1) cytokine Interleukin-2 ($p=0.016$) as well as the predominantly type 2 (Th2) cytokine Interleukin-6 ($p=0.048$) were both independent markers of later therapy success, defined as no measurable HCV-RNA in peripheral blood 6 months after treatment completion. It was also confirmed that elevated GOT ($p=0.013$), GGT levels ($p=0.031$) and histological liver fibrosis score ($p=0.027$) in biopsy before treatment begin, were independent predictors of later therapy non-response in treatment with pegylated interferon α -2b and ribavirin.

In conclusion, this prospective clinical pilot study describes two cytokines and several clinical markers that are independently able to identify patients with chronic hepatitis C that are likely to fail a curative treatment attempt before beginning therapy with pegylated interferon α -2b and ribavirin.