

**Serum profile of T helper 1 and T helper 2 cytokines in HCV-infected patients**

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**Objectives:** T-helper (Th) lymphocyte cytokine production may be important in the immunopathogenesis of hepatitis C virus (HCV) infection. Th1 cytokines (interleukin [IL]-2, interferon gamma [IFN-gamma]) are necessary for host antiviral immune responses while Th2 cytokines (IL-4, IL-10) can inhibit the development of these effector mechanisms. The aim of the present study was to assess the serum profile of Th1 and Th2 cytokines in treated and non-treated HCV infected individuals. **Methods:** This study was carried out in 63 HCV infected patients (31 under treatment and 32 untreated) and 32 matched HCV-seronegative healthy subjects. The serum samples were checked with enzyme-linked immunosorbent assay (ELISA) for IL-2, IL-4, IL-10 and IFN-gamma. **Results:** Levels of circulating IL-2, IL-4, IL-10 and IFN-gamma were significantly elevated in HCV patients versus normal controls ( $2822.6 \pm 1259.92$  vs.  $950.8 \pm 286.9$  pg/mL;  $1987 \pm 900.69$  vs.  $895.91 \pm 332.33$  pg/mL;  $1688.5 \pm 1405.1$  vs.  $519.03 \pm 177.64$  pg/mL and  $1501.9 \pm 1298$  vs.  $264.66 \pm 71.59$  pg/mL respectively;  $P < 0.001$ ). The serum levels of all cytokines were significantly lower in under treatment patients than those of untreated patients ( $P < 0.001$ ). **Conclusion:** On the basis of our data, the simultaneous increase of Th1 and Th2 related cytokines may indicate that both Th1 and Th2 cytokines have been involved in the pathogenesis of HCV infection. Besides, this activated T-cell response in HCV infected patients could be regulated by treatment.

