

Analysis of serum and gene expression profile of cytokines (IL-6, TNF-a and TGF- β 1) in chronic hepatitis C virus infection

ABSTRACT

Background: Chronic hepatitis C virus (HCV) infection is one of the major causes of liver cirrhosis and liver carcinoma. Studies have indicated that an imbalance of cytokine activities could contribute to the pathogenesis of chronic HCV infection. This study aimed to investigate serum levels and gene expression of cytokines (IL-6, TNF-a and TGF- β 1) in chronic HCV infection among Malay male subjects. Methods: Thirty-nine subjects were enrolled from various health clinics in Kelantan, Malaysia, and divided into two groups: patients with chronic HCV infection (HP) and healthy control (HS). The serum cytokines IL-6, TNF-a—were measured using Luminex assay, and serum TGF- β 1 was measured by ELISA. The mRNA gene expression for IL-6, TNF-a and TGF- β 1 was measured by real-time reverse transcriptase polymerase chain reaction (RT-PCR). Results: There were statistically significant differences in the mean serum levels of IL-6, and TGF- β 1 in HP compared to HS group ($p = 0.0180$ and $p = 0.0005$, respectively). There was no significant difference in the mean serum level of TNF-a in HP compared to HS group. The gene expression for the studied cytokines showed no significant differences in HP compared to HS group. Conclusion: Serum IL-6 was significantly associated with chronic HCV infection.