Abstract

Chronic liver disease, such as hepatitis B and C viral infections, cirrhosis and liver cancer, are one of the major health problems in the world. *NFE2L1* controls the balance and metabolism of lipids in hepatocytes. The genetic deficiency of *NFE2L1* leads to fatty liver, cell death, inflammation, oxidative stress, fibrosis and liver cancer. *ACOX1* encodes an enzyme called the fatty Acyl-CoA oxidase (AOX), and this enzyme plays the first stage in the metabolism of long-chain fatty acids. Lacking or decreasing the expression of ACOX1, leads to chronic hepatic injury and hepatocellular carcinoma. This study carried out on the peripheral blood of 200 volunteers of liver transplantation referred to Namazi Hospital of Shiraz University of Medical Sciences between 2015 and 2017. Patients divided into three groups: hepatitis B virus infection, hepatitis C virus infection and hepatocellular carcinoma (HCC). The expression of *NFE2L1* and *ACOX1* evaluated using Real Time-PCR and their protein levels were assessed by ELISA method. The results showed that the expression of *NFE2L1* in the group of patients with hepatitis B, C, and hepatocellular carcinoma increased, however was not statistically significant. The expression of the *NFE2L1* protein in the mentioned patient groups showed a significant decrease in patients compared to the control group. The expression of *ACOX1* in the group of hepatitis B, C, and hepatocellular carcinoma decreased in comparison with the control group. The expression level of *ACOX1* in different patient groups was significantly lower than the control group. In conclusion, the NFE2L1 and ACOX1 proteins expression could affect the development of a chronic liver disease.

Key words: NFE2L1, ACOX1, Chronic Liver Disease, qPCR, ELISA

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Study of *NFE2L1* and *ACOX1* expression in patients with chronic liver diseases

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