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Hepcidin level and iron status in β-thalassemia major patients with hepatitis C virus infection

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Background: Clinical features of β-thalassemia include variably severe anemia and iron overload due to increased intestinal iron absorption which may result in damage to vital organs. The hepatic peptide hepcidin is a key regulator of iron metabolism in mammals.

Aim: The present study aimed to determine the relationship between hepcidin expression and iron status in β-thalassemia patients with hepatitis C virus infection. The study included 50 patients diagnosed as β-thalassemia major (21 of them were HCV infected and 29 were HCV negative), in addition, 20 healthy subjects were enrolled in the study. The hepatic iron and hepcidin mRNA concentration in liver biopsy samples were measured as well as serum ferritin, serum iron, hemoglobin levels and serum hepcidin.

Result: Results showed remarkable decrease of serum and liver hepcidin mRNA expression in thalassemic patients as compared to controls and showed a positive correlation with hemoglobin concentration but negatively correlated with serum ferritin level and hepatic iron index (HII). In HCV infected patients, serum and liver hepcidin mRNA were markedly depressed in HCV positive β-thalassemia cases and positively correlated with serum albumin and prothrombin concentrations, but inversely correlated with HII and fibrosis score. In HCV positive β-thalassemia major patients, the hepcidin mRNA level was positively correlated with the synthetic function of the liver (namely serum albumin and prothrombin concentration) and with serum hepcidin level. While, both serum and hepcidin mRNA level was inversely correlated with HII and fibrosis score in these patients.

Conclusion: These results suggest a possible role of hepcidin expression in iron overload in β-thalassemia major, consequent disease progression and development of liver fibrosis.

Biography

Olfat M Hendy completed her MD from Clinical pathology department, Menoufia Faculty of Medicine, Menoufia University, Egypt and become Professor of Hematology & Immunology at the same university in 2009. She is the Head of Hematology Unit at National Liver Institute- Menoufia University, Egypt. She has published more than 28 papers in reputed journals and has been serving as an Editorial Board Member of repute. She was a supervisor of more than 32 MD and Master's theses, and discussed more than 32 theses. She is a member in about 4 medical societies.

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