



Prevalence of Occult Hepatitis C Virus Infection in the Iranian Patients with Beta-Thalassemia Major

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Background:

Occult hepatitis C virus infection (OCI) is a new pathological entity of chronic HCV infection characterized by the presence of the HCV-RNA in liver biopsy and/or peripheral blood mononuclear cell (PBMC) specimens and the absence of HCV-RNA and anti-HCV Abs in plasma samples. β -thalassemia major is a hereditary recessive blood disease with deficiency in the hemoglobin beta chain. Thalassemic patients need blood transfusion therapy; repeated blood transfusion increases viral blood borne infection. The aim of this study was to determine the prevalence of OCI in the Iranian patients with β -thalassemia major

Materials and Methods:

From February 2015 to November 2015, a total of 147 Iranian patients with β -thalassemia major were enrolled in this cross-sectional study. After extraction of the viral RNA from the plasma and PBMC samples, the genomic HCV-RNA of the specimens was amplified by RT-nested PCR using primers from the 5'-UTR. The HCV genotypes of the positive specimens were tested using the RFLP assay. To confirm the HCV genotypes, the 5'-UTR fragment was amplified and cloned into pJET1.2/blunt cloning vector and then sequenced.

Results:

From the 147 patients, 106 (72.1%) were anti-HCV Abs and HCV-RNA negative. The HCV-RNA was found in PBMC specimens of six (5.7%) patients, from a total of 106 patients with undetectable HCV-RNA plasma and anti-HCV Abs. Therefore, six out of 106 patients had OCI. The HCV genotyping revealed that three patients were infected with HCV-subtype 1b, two patients were infected with HCV-subtype 3a, and one patient was infected with HCV-subtype 1a.

Conclusion:

The obtained results revealed that Iranian patients with beta-thalassemia major may have OCI. Therefore, it seems that the design of a study to identify this infection in the patients with β -thalassemia major would provide valuable information.

Keywords:

beta-thalassemia major, hepatitis C virus, occult HCV infection, peripheral blood mononuclear cells.

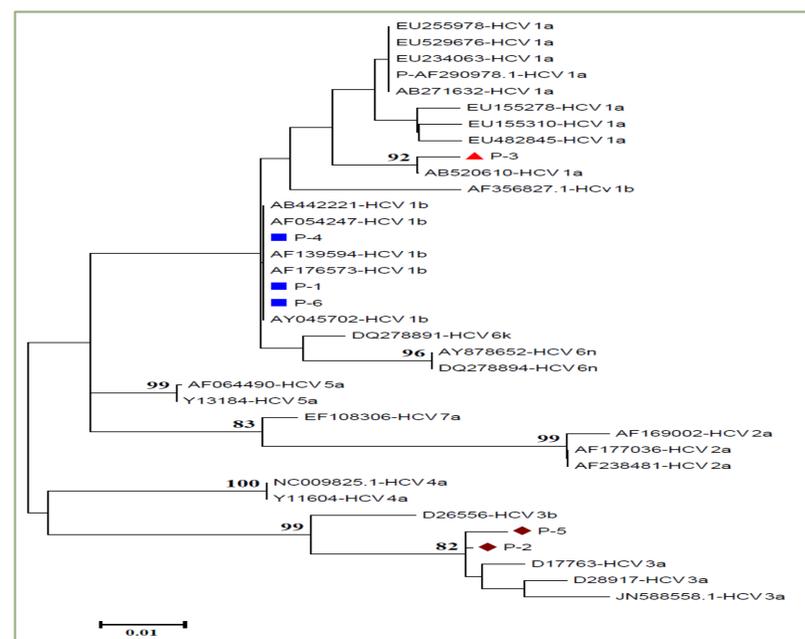


Fig.1 Phylogenetic tree based on HCV 5'-UTR nucleotide sequences of clones obtained from PBMC samples from six individuals suffering from β -thalassemia major with occult HCV infection

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