Trend in Prevalence of Hepatitis C Virus Infection among β-thalassemia Major Patients: 10 Years of Experience in Iran

Maryam Jafroodi1, Ali Davoudi-Kiakalayeh2,3, Zahra Mohtasham-Amiri4, Ali Akbar Pourfathollah2, Azade Haghbin2

1Department of Hematology/Oncology, Guilan University of Medical Sciences, Rasht, Iran, 2Blood Transfusion Research Center, High Institute for Research and Education in Transfusion Medicine, Tehran, Iran, 3Department of Neurobiology, Care Science and Society (NVS),

Background: Hepatitis C virus (HCV) is the leading cause of transfusion transmitted infections (TTIs) among patients with β-thalassemia major. A high prevalence of HCV was reported among these patients. The aim of this study is seeking the trend of the prevalence of HCV infection among the patients with β-thalassemia major in Guilan province, Northern Iran over a 10-year period.

Methods: A retrospective study was conducted on 1113 patients with β-thalassemia major in the Guilan province, northern Iran from 2002 to 2012, using multiple data sources. A blood sample was taken from each patient, and a questionnaire regarding demographic data and risk factors was completed for them. Enzyme-linked immunosorbent assay and recombinant immunoblot assay for HCV were performed in all cases. A stepwise forward logistic regression analysis was done.

Results: The prevalence of hepatitis C infection among β-thalassemia major patients was 13.6%. The risk of hepatitis C among β-thalassemia major patients was greater before screening program for HCV (odds ratio = 9.6, 95% confidence interval: 2.3–40.5). In addition, the prevalence of anti-HCV seropositivity was decreased dramatically among patients who have received transfusions after implementation of blood donor screening for HCV. There were no positive HCV cases in the patients younger than 10 years.

Conclusions: The risk of TTIs including HCV can be reduced by implementing screening program for healthy blood.

Keywords: Blood transfusion, hepatitis C, Iran, transfusion transmitted infections, β-thalassemia