

LETTER TO THE EDITOR

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Seroprevalence of HCV Antibody among Patients with β -Thalassemia Major in Amirkola Thalassemia Center, Iran

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ABSTRACT

β -thalassemia major is a common hemoglobinopathy in humans. In some journals, numerous studies have reported different prevalence of hepatitis C among β -thalassemia major because thalassaemic patients need multiple blood transfusions and blood transfusion is a common transmission pathway for hepatitis C virus. Thus this study was performed for detection of anti-HCV between β -thalassemia major patients in our region.

Key words: β -thalassemia major; Hepatitis C; Seroprevalence

LETTER

β -thalassemia major patients are among the high risk groups for hepatitis C virus (HCV) infection.¹ HCV is a common cause of post transfusion hepatitis.² Blood transfusion is a common transmission pathway.³ Chronic hepatitis follows acute hepatitis C in 60 to 70% of cases and progression to cirrhosis occurs in about 20% among patients associated with hepatitis C and hepatocellular carcinoma at a rate of 3-5% per year.⁴

Numerous studies have reported different prevalence of hepatitis C among β -thalassemia major. Thus, this study was performed for detection of anti-HCV among β -thalassemia major in our area and comparing this prevalence with those before and after 1996 (Initiation of donors screening for HCV in Iran). In our study, from January 2005 to August 2005, 113 cases with β -thalassemia major were studied for detection of antibody against HCV (using 3rd generation ELISA, Abbott, Chicago, USA). Data were analyzed statistically by SPSS 11, and t-test and Fisher's exact test.

In the present study, 64 females (56.64%) and 49 males (43.36%) were studied. The mean \pm SD age was 15.8 \pm 8.93 years. In our study, twelve (10.6%) cases were positive for

anti-HCV antibody, which is much higher than the healthy Iranian blood donors (<1%).^{5,6} This result is lower than other studies in Iran and other countries. This may be due to difference in assay system used to test for anti-HCV and low prevalence of HCV in our healthy general population (0.12% - 0.97%).^{5,6}

It seems that the whole population prevalence is less than 1% in Iran that is lower than that of the regional countries: 1.1% in Yemen,⁷ 0.9% in children to 1.8% in adult blood donors in Saudi Arabia,⁸ and 4% of blood donors and 3% of college students in Pakistan.⁹

Most of the patients with positive anti-HCV were in females group (7.08 %) and all anti-HCV positive patients were 11-30 years old.

In this study, mean age \pm SD was significantly ($p=0.015$) higher in patients with positive HCV antibody (21.66 \pm 4.49) compared to negative subjects (15.09 \pm 9.07). The mean transfusion rate \pm SD was 242.33 \pm 56.54 units of packed red blood cells that was significantly ($p=0.000$) higher in patients with positive HCV antibody (242.33 \pm 56.54) compared to negative subjects (150.47 \pm 94.65) implying that the risk of infection rises with each transfusion.¹⁰

After initiation of donors screening for HCV in 1996 in Iran, the prevalence of HCV infection in thalassaemic patients has decreased significantly and no case has been infected after that time ($p=0.008$). We conclude that the prevalence of HCV infection in our β -thalassaemic patients is high and routine screening of blood for HCV is highly suggested to decrease the incidence of infection in blood recipients.

REFERENCES

1. Agarwal MB, Malkan GH, Bhave AA, Vishwanathan C, Billa V, Dube SR, et al. Antibody to hepatitis-C virus in multi-transfused thalassaemics--Indian experience. *J Assoc Physicians India* 1993; 41(4): 195-7.
2. Williams TN, Wonke B, Donohue SM. A study of hepatitis B and C prevalence and liver function in multiply transfused thalassaemic and their parents. *Indian Pediatr* 1992; 29(9):1119-24.
3. Schreiber GB, Busch MP, Kleinman SH, Korelitz JJ. The risk of transfusion-transmitted viral infections. *The Retrovirus Epidemiology Donor Study*. *N Engl J Med* 1996; 334(26):1685-90.
4. Dienstag JL, Isselbacher KJ. Acute viral hepatitis and chronic hepatitis. In: *Harrison's principles of internal medicine*. USA: Mc Graw-Hill, 2005: 1822-50.
5. Alavian M, Abidi P, Zali MR. Hepatitis C virus in Iran: Epidemiology of an emerging infection. *Arch Iran Med*. 2005; 8(2): 84-90.
6. Alavian SM, Gholami B, Massarat S. Hepatitis C risk factors in Iranian volunteer blood donors: a case control study. *J Gastroenterol Hepatol*. 2002; 17: 1092-7.
7. Haidar NA. Prevalence of hepatitis B and hepatitis C in blood donors and high risk groups in Hajjah, Yemen Republic. *Saudi Med J* 2002; 23(9):1090-4.
8. Al-Faleh FZ, Ayoola EA, Al-Jeffry M, Al Rashed R, Al Mofarreh M, Arif M, et al. Prevalence of antibody to hepatitis C virus among Saudi Arabian children: a community-based study. *Hepatology* 1991; 14(2):215-8.
9. Khattak MF, Salamat N, Bhatti FA, Qureshi TZ. Seroprevalence of hepatitis B, C and HIV in blood donors in northern Pakistan. *J Pak Med Assoc* 2002; 52(9):398-402.
10. Ansari MM, Kooloobandi A. Prevalence of hepatitis C virus infection in thalassaemia and haemodialysis patients in north Iran-Rasht. *J Viral Hepat* 2002; 9(5):390-2.

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