

An Unbelievable Fact on “Dialysis Centers Without Hepatitis C Infection”

Seyed Moayed Alavian^{1,2,*}

¹Baqiyatallah Research Center for Gastroenterology and Liver Diseases, Baqiyatallah University of Medical Sciences, Tehran, IR Iran

²Middle East Liver Disease Center, Tehran, IR Iran

*Corresponding author: Seyed Moayed Alavian, Baqiyatallah Research Center for Gastroenterology and Liver Diseases, Baqiyatallah University of Medical Sciences, Tehran, IR Iran. Tel: +98-2188945186, Fax: +98-2188945188, E-mail: alavian@thc.ir

Received: February 2, 2014; **Accepted:** February 10, 2014

Keywords: Hepatitis C; Renal Dialysis; Epidemiology

Hepatitis C virus (HCV) infection is the second viral cause for chronic liver disease (CLD) in the world and nearly 170 million people are infected worldwide (1, 2). The history of transfusion before 1992 (time of blood and blood products screening), illegal drug using, exposures among health care workers, unprotected multi-partner sexual contact, and chronic hemodialysis are known risk factors for HCV infection (3-5). HCV infection is a common infection in hemodialysis (HD) patients as well as dialysis centers (6). It is currently the major cause of CLD and mortality after kidney transplantation (7). Distribution of HCV infection among HD patients is not globally homogeneous. We performed a multicenter study in Tehran in 2002 and the prevalence of HCV infection among HD patients was around 13% (8). We systematically reviewed all published and unpublished documents related to HCV infection prevalence in Iranian HD patients from April 2001 to March 2008 (9). Eighteen studies from 12 provinces (consisting of 49.02% of the total Iranian population) reported prevalence of HCV infection in Iranian HD patients. HCV infection prevalence in Iranian HD patients was 7.61% and showing that the burden has changed during the recent years (9).

In 2006, we started a project for control of hepatitis C infection in dialysis patients (10). Iran Hepatitis Network (IHN), Ministry of Health and Medical Education (MOHME), many experts in hemodialysis and gastroenterology and infectious departments in many universities were involved in it in Iran. We presented main strategies for control of HCV infection in dialysis centers that consisted of: periodic screening of HCV in dialysis centers and reporting to MOHME for evaluation, distributing information to both patients and health staffs, training courses and congresses in various cities with more focus on the cities with higher HCV infection prevalence, treatment of HCV-positive patients with ap-

proved protocols, treatment according to a widely approved protocol, and putting HCV-positive HD patients in the top of waiting list for kidney transplantation (10). Changes in the epidemiology of HCV infection and decrease in the burden of liver diseases in HD patients has been reported according to the report of MOHME in Iran (11). The prevalence of HCV has decreased from 14.4% in 1999 to 4.5% in 2006 (11). Recently published articles of different centers from various parts of Iran showed the continuation of this burden decrease. Samimi-Rad et al. reported the prevalence of HCV antibody among HD patients around 5.0% in Yazd province and 5.4% in Markazi province (12, 13). Fortunately, the authors performed the molecular tests for all anti-HCV antibody-positive cases in their study. Zahedi et al. reported the prevalence of HCV antibody among HD patients around 7% in Kerman province (14) and Assarehzadegan et al. reported it 7.9% in Khuzestan province (15). In Zahedi et al. study, less than 50% of positive cases were HCV RNA-positive, meaning that less than 3.5% of their samples were HCV infected. I would like to mention that we should evaluate the epidemiology of HCV infection in addition to serological tests, using molecular tests such as RT-PCR, and ask the history of antiviral therapy in hemodialysis patients with anti-HCV Ab-positive results and consider the RT-PCR negative results as cured cases, not positive ones. This mistake might result in over-estimation of the prevalence of HCV infection in this high group. antiviral therapy; introduction of erythropoietin which has resulted in the decrease of transfusion needs; early transplantation; treatment of positive cases; training health staffs; and higher mortality of HD patient with HCV infection on hemodialysis. Finally, I would like to emphasize that we can imagine the “dialysis center without HCV” if we follow the standard infection precautions for control of HCV infection.

Implication for health policy makers/practice/research/medical education:

Understanding the view of epidemiology of HCV infection in hemodialysis patients can help health policy makers for better decisions. Epidemiology of hepatitis C infection has changed during the recent years and I recommend all scientists to review the achievements in control of hepatitis C in Iranian hemodialysis patients.

Copyright © 2014, Nephrology and Urology Research Center; Published by Kowsar Corp. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Acknowledgments

Thanks to all nurses in hemodialysis centers, all gastroenterologists and infectious specialists for treatment of patients, and Iran blood transfusion organization for providing safe blood resources to all Iranians especially HD patients.

Financial Disclosure

No financial interest or conflict was present.

Funding/Support

This study was supported by Baqiyatallah Research Center for Gastroenterology and Liver Diseases.

References

1. Murakami T, Enomoto N, Kurosaki M, Izumi N, Marumo F, Sato C. Mutations in nonstructural protein 5A gene and response to interferon in hepatitis C virus genotype 2 infection. *Hepatology*. 1999;**30**(4):1045-53.
2. Alavian SM, Gholami B, Masarrat S. Hepatitis C risk factors in Iranian volunteer blood donors: a case-control study. *J Gastroenterol Hepatol*. 2002;**17**(10):1092-7.
3. Yen T, Keeffe EB, Ahmed A. The epidemiology of hepatitis C virus infection. *J Clin Gastroenterol*. 2003;**36**(1):47-53.
4. Strader DB, Wright T, Thomas DL, Seeff LB, American Association for the Study of Liver D. Diagnosis, management, and treatment of hepatitis C. *Hepatology*. 2004;**39**(4):1147-71.
5. Alavian SM, Hosseini-Moghaddam SM, Rahnavardi M. Hepatitis C among hemodialysis patients: a review on epidemiologic, diagnostic, and therapeutic features. *Hepat Mon*. 2007;**7**(3):153-62.
6. Alavian SM. A shield against a monster: Hepatitis C in hemodialysis patients. *World J Gastroenterol*. 2009;**15**(6):641-6.
7. Rostami Z, Nourbala MH, Alavian SM, Bieraghdar F, Jahani Y, Einollahi B. The impact of Hepatitis C virus infection on kidney transplantation outcomes: A systematic review of 18 observational studies: The impact of HCV on renal transplantation. *Hepat Mon*. 2011;**11**(4):247-54.
8. Alavian SM, Einollahi B, Hajarizadeh B, Bakhtiari S, Nafar M, Ahrabi S. Prevalence of hepatitis C virus infection and related risk factors among Iranian haemodialysis patients. *Nephrol*. 2003;**8**(5):256-60.
9. Alavian SM, Kabir A, Ahmadi AB, Lankarani KB, Shahbabaie MA, Ahmadzad-Asl M. Hepatitis C infection in hemodialysis patients in Iran: a systematic review. *Hemodial Int*. 2010;**14**(3):253-62.
10. Alavian SM. Hepatitis C, Chronic Renal Failure, Control Is Possible. *Hepat Mon*. 2006;**6**(2):551-2.
11. Alavian SM, Bagheri-Lankarani K, Mahdavi-Mazdeh M, Nourozi S. Hepatitis B and C in dialysis units in Iran: changing the epidemiology. *Hemodial Int*. 2008;**12**(3):378-82.
12. Samimi-Rad K, Hosseini M, Mobeini G, Asgari F, Alavian SM, Tahaei ME, et al. Hepatitis C virus infection among multi-transfused patients and personnel in haemodialysis units in central Islamic Republic of Iran. *East Mediterr Health J*. 2012;**18**(3):227-35.
13. Samimi-Rad K, Hosseini M. Hepatitis C virus infection and hcv genotypes of hemodialysis patients. *Iran J Public Health*. 2008;**37**(3):146-52.
14. Zahedi MJ, Darvish Moghaddam S, Alavian SM, Dalili M. Seroprevalence of Hepatitis Viruses B, C, D and HIV Infection Among Hemodialysis Patients in Kerman Province, South-East Iran. *Hepat Mon*. 2012;**12**(5):339-43.
15. Assarehzadegan MA, Shakerinejad G, Noroozkohnejad R, Amini A, Rahim Rezaee SA. Prevalence of hepatitis C and B infection and HCV genotypes among hemodialysis patients in Khuzestan province, southwest Iran. *Saudi J Kidney Dis Transpl*. 2009;**20**(4):681-4.